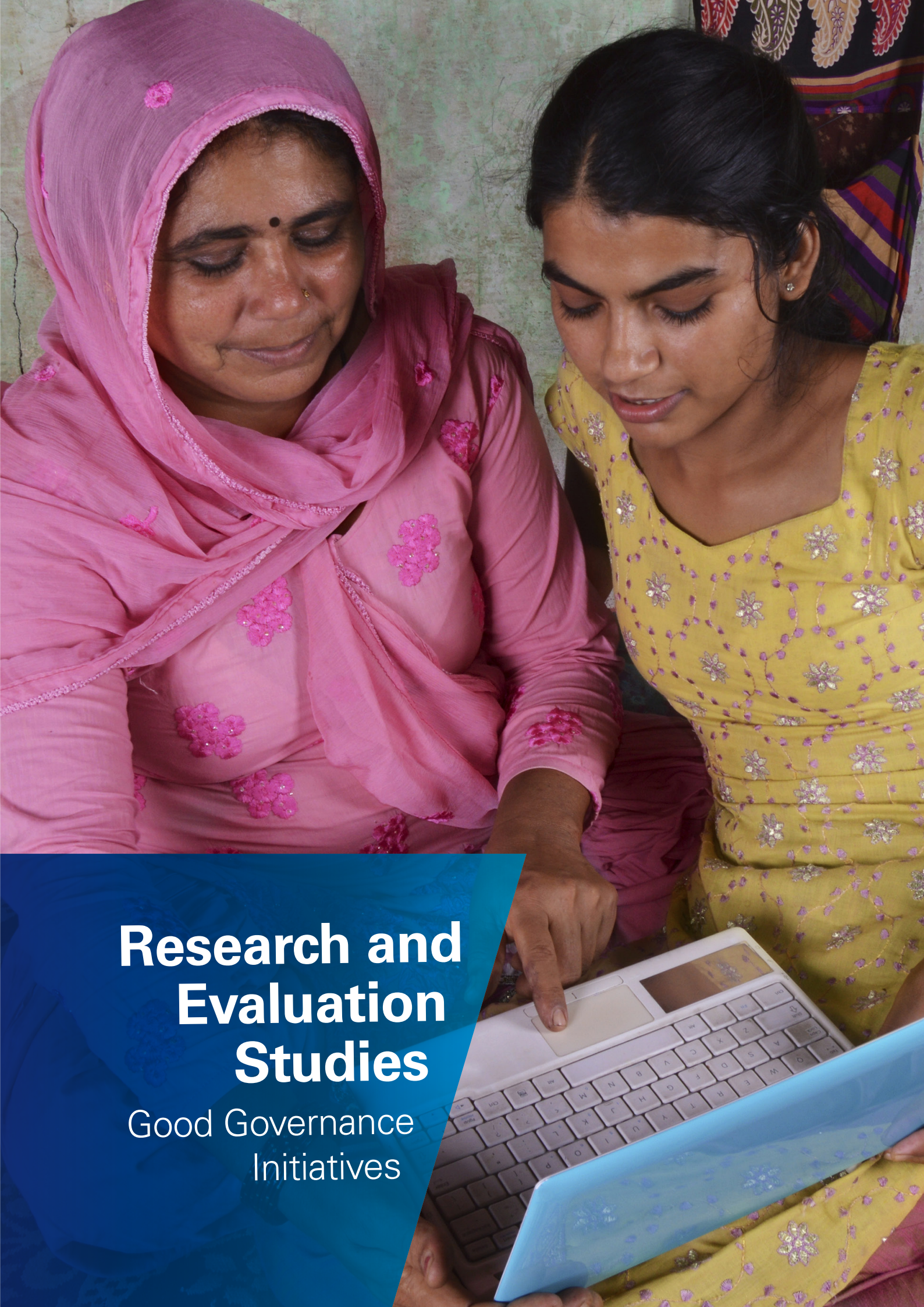

Research and Evaluation Studies

Good Governance Initiatives

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Research and Evaluation Studies

Good Governance Initiatives

सत्यमेव जयते

Department of Administrative Reforms
and Public Grievances
Ministry of Personnel, Public Grievances and Pensions
Government of India

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Executive Summary

Towards promoting good governance in the country, Department of Administrative Reforms and Public Grievances (DARPG), Government of India, has been awarding best practices with the Prime Minister's Awards for the Excellence in Public Administration, and the National e-Governance Awards. Over the period, a battery of such practices has been identified in various sectors of governance.

These good governance practices have been documented and disseminated to State Governments through a multi-pronged approach. National e-Governance Conference is organised every year showcasing e-governance initiatives. Regional Conferences on specific themes are organised in various regions of the country facilitating platform for exchange of good governance practices. Sixty-seven documentary films on best practices have been produced and disseminated to all concerned departments and training institutes. These films are also made available in department website (www.darpg.gov.in), YouTube and telecast in Doordarshan for wider dissemination. Case studies on eight best practices are prepared and provided to State administrative training institutes and central training institutes for encouraging the officers towards innovation. A series of books on best practices titled Bringing Your Own Bytes, Splendour in the Grass by Penguin India; Roofless Towers, In Search of Light, People First by Unicorn Publishers; Some Gems Some Pearls by Macmillan India Publishers; Thinking Out of the Box by Bloomsbury India Publishers, have been brought out.

While continuing the effort, a necessity of research & analysis of these practices is felt, as most of these best practices were implemented several years ago. In a fast moving dynamic world where latest innovations are providing different options to take up challenges and at times making earlier good governance practices look less relevant, DARPG has commissioned a study on ten select best practices through M/s KPMG India Ltd. These ten practices cover a diverse range of areas in governance such as primary education, health, rural development, gender equality, etc. The objective of the study was to evaluate the present state of each initiative at the field, and to do research on how to further improve and replicate them.

In this report, each of these initiatives is discussed in-depth and findings are given based on the spot study and stakeholder consultation. Several key elements are captured in the report which may generate a lot of interest:

- Findings highlight the present position in terms of impact, utility, user satisfaction, sustainability, replicability etc.
- Gaps and the unique features are also identified.
- An attempt is made to evolve an improved model practice taking features of other best practices in the area.
- Potential States for replication of each of these ten practices are identified and guidelines for step-wise implementation are suggested.

It is expected that the report would be an invaluable source book on ten successful initiatives culled out from across the country to Administrators who are looking for new insights and strategies in the process of implementing good governance initiatives. It is hoped that the report would not only encourage adaptation, replication and further innovation of the initiatives but also their professional evaluation and documentation.

Introduction

The project was envisaged with view to assess the present state of each initiative at the ground level; gather key inputs from the point of view of stakeholders, influencers and beneficiaries to help improve outcomes, and develop a set of clear, time-bound guidelines to help replicate the initiatives in other states / regions.

DARPG laid down certain objectives for the study to be conducted

- To understand the impact, utility, user satisfaction, sustainability, scalability and replicability of the selected 'good governance' initiatives
- To develop a model practice from the shortlisted 'good governance' initiatives and suggest an implementation strategy
- To improve good practices by incorporating technological advancements, changed requirements of people etc. for possible replication in other states of India.

For the project M/s KPMG dedicated a team of experienced Subject Matter Experts (SMEs) and Consultants to study each initiative. A detailed study was carried out by the KPMG team by analysing secondary information available on web sites, newspaper reports and journals. This was supplemented by an extensive primary survey of stakeholders, influencers and beneficiaries (selected by employing purposive sampling). A comparative assessment was made vis-à-vis case studies of similar projects run by other state governments. Finally, after factoring in new technological innovations and management best practices, a plan blueprint was developed for replication of each initiative in shortlisted states / districts of the country.

In the chapters to follow each of the ten good governance initiatives is discussed in-depth and findings presented to generate interest and debate amongst the administrative leadership and their teams at various levels of government.

Table 1 - Study Coverage: Ten Shortlisted Good Governance Initiatives

S. No.	Name of the Initiative
1	Activity Based Learning (ABL) Methodology for Primary Education (Std. I to IV), Tamil Nadu
2	SCORE: e-Registration – An innovative model taking care of all stakeholders, Bihar
3	Improved Health and Sanitation Practices through Convergence of Administration, Community and Gram Panchayats in District Surguja, Chhattisgarh
4	Computerisation of Decentralised Paddy Procurement and Public Distribution System (PDS) in Chhattisgarh
5	Removal of Encroachments of Structures of Different Religions while Maintaining Communal Harmony in Jabalpur, Madhya Pradesh
6	Involvement of Community under National Rural Employment Guarantee Scheme (NREGS) in Naxalite Affected Areas, Madhya Pradesh
7	Making Medicines Affordable, Rajasthan
8	Aarogyasri Public Health Insurance Scheme, Andhra Pradesh
9	Beti Bachao Abhiyan: Save the Girl Child, Gujarat
10	Cervical Cancer Screening: Evolving a New Methodology – A Life Saving Initiative of Chennai Corporation, Tamil Nadu

Research Approach and Methodology

Outlined below is the study methodology adopted for each of the good governance initiatives:

- Critically evaluate each of the selected good governance initiatives with the help of primary and secondary data
- Select initiatives based upon their performance to develop model practices
- Recommend areas where the model practices can be implemented

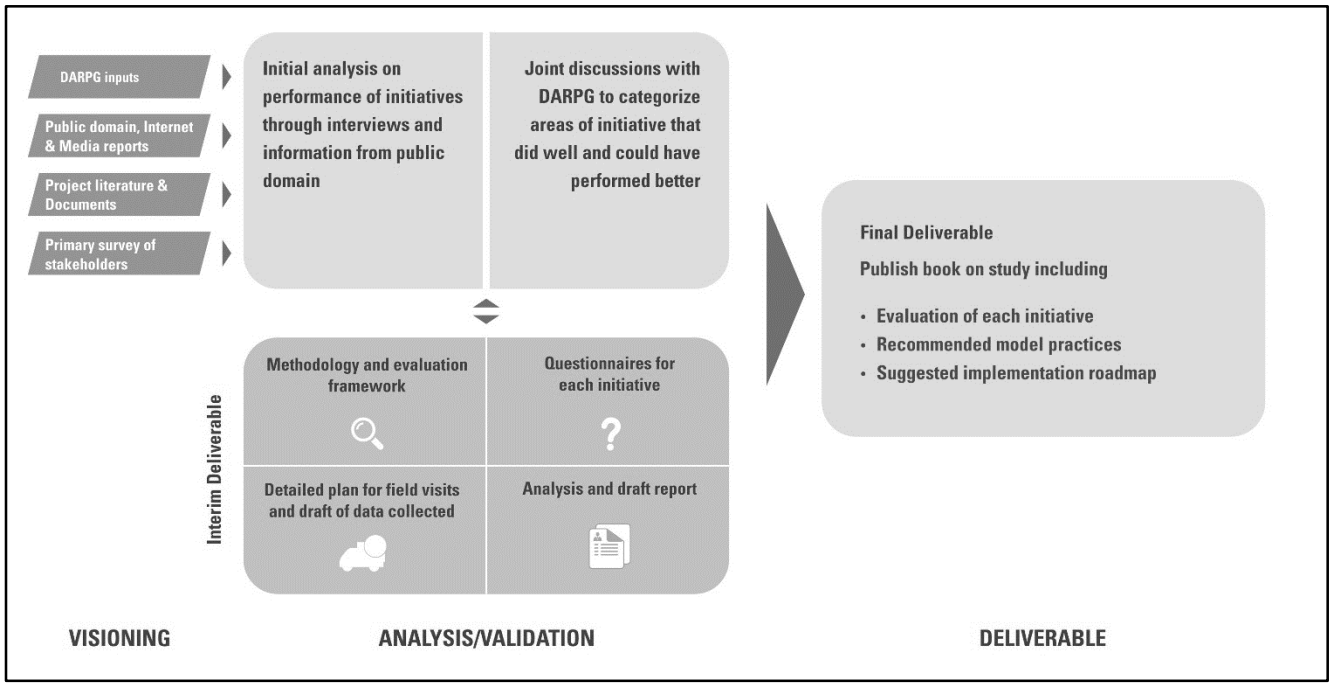


Figure 1 – Project phases

Key Research Activities Undertaken

- Finalisation of data sources – stakeholders, contact personnel, web addresses, media sources for data collection
- List of objectives on identified initiatives leveraging available literature and viewpoints of stakeholders, both written (reports, presentations, manuals etc.) and verbal (sound bytes obtained during KIIs)
- Study of impacted ecosystem (stakeholders and definition of sample size) of each initiative
- Finalisation of questionnaires/schedules/discussion guides for each initiative
- Detailed Plan for field visits and data collection
- Raw data collected on performance of good governance initiatives
- Data Collation, Quality Checks
- Analysis & Recommendations

1 – Activity Based Learning (ABL) Methodology for Primary Education (Std. I to IV), Tamil Nadu

Activity Based Learning (ABL) is an innovative teaching-learning programme that aims to change the lecture-based instructional pedagogy in classrooms to self-paced learning using innovative, colourful and child-friendly teaching-learning aids. Started in Corporation of Chennai schools on a pilot basis in 2002-2003, the programme has been subsequently extended to cover the whole of Tamil Nadu state.

1.1 Initiative Objectives

- Raising the achievement of students in different subjects at primary level by changing teaching practices in classrooms and making them more children oriented.
- Creating a conducive learning environment by changing role of the "teacher" to a facilitator.

1.2 Background: Rationale behind the Initiative

Tamil Nadu, like many other states in India, especially southern states like Kerala and Karnataka, has culturally and historically placed emphasis on learning in pursuit of knowledge. Unfortunately, with the sharp growth of population after independence, the government-run school education system could not cater to the learning and skill-development needs of the vast numbers of young, especially in remote rural areas. Although literacy levels in Tamil Nadu have been traditionally higher than the national average, the 'quality of learning outcomes' were inconsistent across districts and schools and often resulted in students displaying below par understanding of the subjects taught. One of the main issues identified for this situation was the traditional classroom pedagogy, which laid emphasis on delivery of content through the lecture mode, rote learning and passing exams, rather than conceptual clarity, self-confidence in communication and initiative taking in learning.

ABL is an initiative which has received wide attention from scholars and policy makers, as this quality initiative aims at child-centred learning by using an innovative approach to improve the teaching-learning process in classrooms. The ABL has also been viewed to bring about a major systemic change, by doing away with orthodox methods of teaching-learning and reducing dominance of teachers in primary education.

ABL methodology is based on the academic principle of 'learning through doing'. For each subject, under ABL, competencies are split into different parts or units called 'milestones' that are developed into different activities. These milestones and activities are arranged in a logical sequence from simple to complex. Clusters of milestones are linked together into ladders. Each milestone has different steps of the learning process represented by logos having six types of activities, viz., **introduction, practice, reinforcement, self-assessment or evaluation, remedial** and **enrichment activities**. Group cards are used to engage students in group learning activities.

1.3 Key Factors Leading to Initiative

A team constituted by the Tamil Nadu Sarva Shiksha Abhiyan (TNSSA) investigated the classroom practices and explored the reasons for low achievement of students. It was found that the classroom practices were highly teacher dominated and involved rare use of teaching-learning material.

The team also found out that too much emphasis was laid on orthodox methods of teaching and learning. Teaching through lecture mode was the most common practice adopted by teachers, who assumed that children did not know anything and needed to be taught everything by their class or subject teacher. Also, the existing classroom practices did not offer a range of opportunities to the learners and it was assumed that children learn at a uniform pace and achieve curricular competencies uniformly. There was thus a wide gap between teachers' expectations and children's learning patterns. The team also observed that when students were absent for a few days, there was no way for them to recover the loss of learning during their absence period.

In addition to that, the state faced problems due to multi-grade situations similar to those in other parts of the country. Teachers had to teach children in a mixed age-group scenario in more than two-thirds of primary schools in the state, where textbook was the only teaching-learning resource.

Also, students were not exposed to modern ways of assessment. Hence, there was a need for a learning approach which could offer scope for diverse learning styles, intelligences and abilities.

1.4 Project Initiation: When and Where?

Shri M P Vijaya Kumar, previously the Collector of Vellore in 1994, took the initiative of educating children working as bonded labourers. In collaboration with colleagues, he opened a few special schools for the rescued young bonded labourers. One such school was functioning in a building adjacent to a regular school. In the alternative school, learning methods and materials were introduced in a student friendly and joyful manner such that children showed interest in coming to school.

Later, in 2002, when Shri Vijaya Kumar took charge as the Commissioner, Corporation of Chennai, he created an experimental group consisting of four programme coordinators working in the state-run teacher education institutions and 26 primary teachers of the schools run by Chennai Corporation.

1.5 Implementation Strategy Adopted

Implementation of ABL began in 2002-2003 and was carried out in a phased manner. During 2002-2003, it was pilot tested in 12 schools run by the Chennai Corporation, and was extended to all its 264 schools in 2003-2004.

In 2006-2007, it was further extended to about 4,100 government run schools, covering 10 schools from each block of the state. These were later named as 'model schools'. In 2007-2008, ABL was further up-scaled to about 37,500 schools, wherein all schools run by government education departments, and local governments such as municipal corporations and private schools receiving government aid were a part of this initiative.

Implementation Phases

Implementation of ABL in Tamil Nadu was divided into four phases:

1) Preparation or Capacity Building Phase;
2) Experimental Phase;
3) Extension Phase, and
4) Evaluation Phase.

During the capacity building phase, a core team which consisted of four programme coordinators and selected 26 practicing teachers were trained by Rishi Valley REC team 3-4 times repeatedly during 2003 and 2004. After this, the four co-ordinators along with the teachers developed the teaching-learning modules for ABL.

Next, the ABL approach was experimented for one year in selected 13 schools in 10 zones of Chennai during 2003, the experimental phase. Since printed cards were not available at that time, photocopies of the same were used in classrooms. During this stage, only Classes I and II were integrated. The ultimate idea was to integrate up to class IV.

As the results from the experimental phase were encouraging, this approach was extended to all 264 schools in Chennai Corporation during 2004. During this phase, learning cards for Classes I and II (4 subjects) and a Teacher's Manual was prepared, printed and distributed. In 2005, Class III was integrated with Classes I and II. Workbooks for Classes I and II for four subjects were prepared, printed and distributed during 2004-2005.

Training of Classroom Teachers and other Staff

Under the Capacity Building phase, experimental school teachers handling Class I and II were trained initially and sent for refresher training at reasonable time limits in ABL methodology during 2003 and 2004 under capacity building phase. Project Appraisal and Review meetings were conducted periodically for smooth conduct of the programme.

To enhance resource support, a team of 100 members, ten in each zone/block were trained sufficiently in the ABL methodology, who in turn trained all the classroom teachers handling Classes I to III, as well as teachers who were handling Classes IV to VIII.

For effective monitoring and supervising of the ABL Tamil Nadu project, all BRTEs, HMs, DEOs, CEOs and ADPCs, Supervisors, AEEOs were trained by the core team members in various cycles during 2004-2005.

Teachers and Headmasters were also trained and oriented by visiting model schools and other schools of appreciable performance and interaction with successful teachers.

Apart from these formal training sessions and model school visits, teachers were provided on-the-spot support by an expert team, periodically and regularly. A resource centre was functioning to offer 'on-call' support to teachers at Corporation Middle School, Ranganathan Street, Nungambakkam in Chennai.

Development of Curriculum and Improved Pedagogy

The Tamil Nadu Education Department team's visit to Rishi Valley Rural Education Centre (REC), Andhra Pradesh was a turning point. Not only had the REC given a lot of attention to the curriculum in Mathematics, Telugu and Environmental Science, but the textual material had been broken up into small units, which could be mastered one at a time. The entire material was put into small incremental units, to be completed serially. This organisation of the material into Learning Ladders was a brilliant piece of innovation. The Learning Ladders provided structure to the curriculum and allowed every child to proceed at a self-selected pace.

In the ABL Tamil Nadu kit, the subjects covered are five plus one. *Tamil language* is the first area, where the lesson begins with illustrated cards and short words that are easy to write, rather than with the alphabet sequence. A similar method is used for teaching *English*. *Mathematics* is learnt through using the attractive Montessori materials, designed systematically, for the fundamental principles of addition, subtraction, multiplication and division. *Science* and *Social Science* cards are largely based on the textbook, with a variety of activities attached to every chapter. The sixth subject is that of *puppetry, story-telling, reading of story books, paper craft, drawing, collage and many kinds of group games*, some played outdoors.

In the ABL Tamil Nadu, there are significant departures from and improvements in the Rishi Valley REC teaching-learning materials. Firstly, English was added to the curriculum in ABL Tamil Nadu. The children learn both Tamil and English. The second difference in the Tamil Nadu adaptation was the inclusion of both Science and Social Science, while the Rishi Valley REC had included only Environmental Science. The third innovation was the introduction, into the Primary

curriculum, of three-dimensional materials in Mathematics. Thus, the Montessori system proved to be a big source of enrichment to ABL Tamil Nadu. The materials now available in ABL are colourful, easy to handle, hardy and meticulously developed and enable children to understand place value (units, tens, hundreds) and the basic mathematical processes.

More details about subject-wise teaching-learning materials are provided in Replication Guideline Step No. 4 in Section 1.11.

Low Level Blackboards (LLBs): By bringing the blackboard from the teacher's eye level to the child's, and by increasing the blackboard space, two more learning aids have been created: a specific space for each child to write and a large space to read each other's exercises. Every child can proudly own a part of the blackboard as his/her own show window.

Colour Coded Learning Materials: The learning materials are not only systematically stacked on the shelves, but they are colour-coded, for each class level. Also logos of animal and insect forms are used for different aspects of the curriculum. When the child completes one set, there is a card for Self Evaluation. This can be administered by the child himself/herself or with the assistance of another child.

Non-Competitive Spirit of Learning: The philosophy of the ABL methodology is that no child is "better than" or "worse than" another. The teacher keeps an eye on the levels attained by every child and sometimes helps by pairing an advanced learner with a slower one, for specific exercises. This kind of peer-to-peer teaching-learning has been observed to work well and ingrain a spirit of cooperation in children.

This is of special relevance to rural areas, as harvest time is when children are needed on the farm to help their parents. Their short-term absence from school is no longer treated as a problem. Time away from school can be made up by self-paced and peer-to-peer learning. Fairs and festivals can be enjoyed without their seriously disrupting a child's learning outcomes.

Self-Assessment by Students: The entire ABL system is designed to allow for diversity and differential rates of progress. The 'Achievement Chart' clearly shows the positions of the children in each area. Thus, the teacher is enabled to track every learner's progress. Monitoring of progress by the teacher is subtly combined with the child's freedom to select the pace of learning.

'No Exams' System of Learning: By creating an in-built opportunity of recall of material learnt at each stage, ABL has made evaluation a part of the daily teaching-learning process. For the children, there is no failure and therefore, there is no fear of failure. This is as against the conventional school system, where so many children drop out of school because they fail. The need for an examination at the end of the term or school year has been made redundant in the ABL system.

Self-Marking of Attendance: Taking the daily attendance roll call is a ritual in most schools, with the teacher calling out the names and the pupils responding. In the ABL method, this process is made child-friendly. There is an Attendance Card for each child, to be filled up every day by the child himself/herself. As a result of this practice, children have come to love the sense of trust reposed in them. When they assemble in the morning, one student from each class level in the room distributes the Attendance Cards and collects the filled up ones. The entire process is orderly. It puts the responsibility for marking attendance on the child and not on the teacher.

More details, examples and specific outcomes of the ABL methodology are covered in Sections 1.6, 1.7 below, and Implementation Approach Guideline No. 4 in Section 1.11.

1.6 Challenges Faced

While ABL was an innovative teaching-learning methodology, the state education department officials/administrators, school principals and

teachers were faced with multiple concerns during the extension/roll-out phase. Chief among these were:

- Absence of appropriate School Infrastructure, including classrooms with adequate ventilation and lighting, availability of toilets (separately for boys and girls, with regular water supply), availability of playgrounds, and availability of kitchen sheds for preparation of mid-day meals etc.
- Lack of appropriate teaching-learning aids to facilitate interactive, self-paced learning by students
- Insufficient training to school teachers, lack of referral libraries, training centres at state, district and block levels.

Thus, officials of the MHRD and Government of Tamil Nadu formulated a holistic plan for implementing ABL in Tamil Nadu by utilising the funds provided to the state under the Sarva Shiksha Abhiyan (SSA), in order to address all the issues related to capacity building. A separate State Project Office (SPO) was created, headed by a State Project Director, to oversee the implementation of the ABL programme in Tamil Nadu. A team of state, district and block level officials, educational administrators, subject experts and other resource persons were deployed to oversee and manage the day-to-day operations of the ABL (Classes I to IV). Currently, the SPO office is headed by the State Project Director, Sarva Shiksha Abhiyan Tamil Nadu, who reports to the Principal Secretary, Education, Govt. of Tamil Nadu.

1.7 Outcomes Achieved

1.7.1 Greater Self Confidence in Students

When asked about the outcomes that were most visible in classrooms since the inception of ABL, teachers, BRTEs and community members commented upon students' level of self-confidence. In interviews, teachers stated that students were highly '*confident*', were able to '*express themselves efficiently'*, and '*communicate fearlessly*. Parents also noted an increased level of self-confidence among their children, as reflected in a parent's statement in a focused group discussion:

"*The picture of the traditional classroom has drastically changed. I feel very proud when I see my child's drawings hung on wired strings, and his art and craft work exhibited in the class. His confidence level has increased as students now have an opportunity to showcase their talents, which was absent in traditional classrooms*."

Two other aspects of ABL (i.e., self-assessment and giving responsibility to students to mark their attendance) have also contributed to increased confidence levels. This was reported by teachers in their interviews:

"*Children are allowed to move at their own pace on the learning ladder, and assessment is done only for the completed milestones in the ladder. This enables every child to work individually and work with sincerity and focus*."

"*A child-centric, individual-based, non-threatening mode of assessment (which is made part of the ladder) builds up the confidence level of every child. The child is expected to work on assessment cards at the end of each milestone. The child sees the assessment card as another activity and not as an 'exam'. Thus, every child progresses on the learning curve; no child is judged in terms of failure or success*."

1.7.2 Improved Learning Levels of Children

As per the DISE State-wise Report for Tamil Nadu, schools across 30 districts of the state achieved a Transition Rate (Primary to Upper Primary classes) of 98.6% in AY 2010-2011 versus 96.7% in AY 2009-2010. This was just one indicator of the improved outcomes in the state of Tamil Nadu. Data also showed that rural students outperformed urban students, and girls outperformed boys. Detailed state-wise school category-wise elementary education performance metrics are available in the DISE reports for AY 2010-2011, AY 2011-2012 and AY 2012-2013

1.7.3 No Fear of Teachers, Studies or Exams

Students were asked in interviews whether or not they felt afraid while learning in ABL classrooms. Most frequently, they said:

a. *'I don't fear books and learning'*
b. *'I don't fear my teacher'*
c. *'I don't fear that my classmates will tease me for my low achievement'*
d. *'I don't fear that my parents will scold me for bad performance'*
e. *'I don't fear to explore'*
f. *'I don't fear to engage in creative activities'*
g. *'I don't fear asking questions'*
h. *'I don't fear doing things on my own'*
i. *'I don't fear trying out and failing' and 'I don't fear being corrected when I do something wrong'.*

These responses revealed that 'no fear' could mean a range of things for students. Students have become less hesitant in carrying out a variety of activities as expected in ABL. For example, some students have stated that they do not fear exams any more. Potential reasons for this lack of fear may be that each child is tested based on what he/she has learnt. A crown is held on the head of a child who has completed a milestone, and all children get to wear the crown at some point in time. Hence, ABL is characterised by an absence of examination, fear of ranking, passing or failure. This process is likely to have resulted in students reporting no fear of examinations.

1.7.4 Cordial relations among students; between teachers, students and parents

Figure 1.1 - SABL Classroom, TN State Govt. School

One common response of teachers, BRTEs, and parents about ABL was the change in the teacher-student relationship. They stated that ABL has strengthened the teacher-student relationship. Teachers were asked to comment on the differences in the behaviour between their colleagues working with ABL classes and those who were not working with ABL classes. Teachers noted that ABL students had better relationships with teachers working in ABL classes. To quote a school headmistress: **"***In ABL, my role has changed from being a headmistress to co-teacher and friend of students.***"**

The multiple roles which teachers are required to play in ABL classrooms may have contributed to this phenomenon. ABL teachers have to sit on the floor with students for the whole day and also carry out the task of clarifying doubts of individual student or group of students. Teachers are also required to give attention to students sitting in other groups. During the lunch break, teachers provide materials for students to read or to watch on the computer or television (where available) and work along with them. They also work with ABL students in whole-class situations for doing side ladder activities. These ABL requirements are likely to have improved the student–teacher relationship.

1.7.5 More Awareness & Responsibility among Students

Every day each student is required to fill in the attendance sheet, a group of students is required to fill in the weather chart; every student is required to keep in mind the milestone and card completed in the previous class of the same subject. After completing an activity in a milestone, she or he has to pick up the next card and sit in the respective group. Even though all students may not be able to follow the requirements of ABL fully, community members indicated that there were a variety of opportunities provided in ABL classrooms that help in inculcating a sense of responsibility among most students.

1.7.6 Better Creativity among Students

Teachers and parents were asked to record their observations about the influence of ABL on children in and out of schools, as well as on those who did and did not study in ABL classes. They considered the improvement of students' creativity as an important outcome of ABL. When community members were asked a similar question, the response received from them also was analogous to that of parents and teachers. Apart from the development of hygiene and cleanliness among students, increase in student creativity was community members' third most frequently cited outcome. Likewise, when teachers were asked to share their views about the innovations and improvements of classroom processes that had occurred as a result of ABL, many teachers reported heightened levels of student creativity.

1.8 Key Study Findings

1.8.1 Scheme Scope & Coverage, Enabling Policy Interventions (Impact & Utility)

ABL Implementation Outcomes

The number of schools, enrolment in Std. I-VIII as per DISE for Tamil Nadu for the Academic Year 2010-2011 is given in the tables below:

Table 1.1 - Schools in Tamil Nadu by Category, AY 2010-2011

S. No.	Management	School Category					
		Primary only	Primary with Upper Primary	Primary with Upper Primary and High/Higher Sec. School	Upper Primary Only	Upper Primary & High/Higher Sec. School	KGBV
1	Govt.	22,877	8,279	42	17	4,568	54
2	Private Aided	5,071	1,572	107	36	1,645	-
3	Private Unaided	6,124	587	3,344	15	406	-
4	Others	154	53	210	1	13	-
	Total	34,226	10,491	3,703	69	6,632	54

Source: SSA Tamil Nadu

Table 1.2 - Class-wise Enrolment in Tamil Nadu Schools, AY 2010-2011: Boys, Girls, Overall

Class	Boys	Girls	Total	% Girls
I	620,939	586,200	1,207,139	48.56
II	613,001	581,625	1,194,626	48.69
III	619,382	588,804	1,208,186	48.73
IV	634,892	600,495	1,235,387	48.61
V	655,566	615,889	1,271,455	48.44
VII	623,217	581,583	1,204,800	48.27
VIII	632,038	589,086	1,221,124	48.24
I-V (Total)	3,143,780	2,973,013	6,116,793	48.60
VI-VIII (Total)	1,901,338	1,779,133	3,680,471	48.34
I-VIII (Total)	5,045,118	4,752,146	9,797,264	48.50

Source: SSA Tamil Nadu

Table 1.3 - Year-wise, Category-wise Student Performance in Tamil Nadu: Completion Rate, 2002 to 2010

Year	Completion Rate					
	Primary			Upper Primary		
	All	SC	ST	All	SC	ST
2002	64	61	58	68	62	59
2003	69	66	61	74	68	67

Year	Completion Rate					
	Primary			Upper Primary		
	All	SC	ST	All	SC	ST
2004	75	73	72	79	74	76
2005	78	74	68	82	78	77
2006	86.55	84.40	83.40	88.57	85.85	84.48
2007	92.46	89.88	87.10	91.29	88.89	87.73
2008	93.94	91.18	88.16	92.7	90.15	89.07
2009	97.03	96.59	91.95	93.04	90.24	89.40
2010	97.36	96.84	92.08	93.35	90.67	89.74

Source: SSA Tamil Nadu

Table 1.4 - Year-wise, Category-wise Student Performance in Tamil Nadu: Repetition Rate, 2002 to 2010

Year	Repetition Rate					
	Primary			Upper Primary		
	All	SC	ST	All	SC	ST
2002	24	25	23	19	23	19
2003	23	24	23	16	19	19
2004	19	21	16	12	16	13
2005	19	22	21	10	13	10
2006	11.54	13.64	13.1	7.35	9.37	10.49
2007	6.14	8.9	11.06	6.67	8.78	9.86
2008	4.84	7.69	10.43	5.41	7.64	8.66
2009	1.95	2.47	6.69	5.08	7.57	8.49
2010	1.65	2.25	6.59	4.85	7.34	8.28

Source: SSA Tamil Nadu

Table 1.5 - Year-wise, Category-wise Student Performance in Tamil Nadu: Dropout Rate, 2002 to 2010

Year	Dropout Rate					
	Primary			Upper Primary		
	All	SC	ST	All	SC	ST
2002	12	14	19	13	15	17
2003	8	10	16	10	13	14
2004	6	6	11	9	10	11
2005	4	4	11	8	9	14
2006	1.91	1.96	3.5	4.08	4.8	5
2007	1.4	1.22	1.84	2.04	2.33	2.41
2008	1.23	1.13	1.41	1.9	2.2	2.27
2009	1.02	0.94	1.36	1.88	2.18	2.11
2010	1.00	0.91	1.32	1.79	1.99	1.98

Source: SSA Tamil Nadu

Table 1.6 - SABL in Minority Language Schools (Urdu)

S. No.	District	No. of Schools	No. of Beneficiaries
1	Chennai	18	280
2	Coimbatore	4	14
3	Cuddalore	9	54
4	Dharmapuri	11	80
5	Erode	3	13
6	Kancheepuram	7	81
7	Krishnagiri	51	677
8	Namakkal	2	7

S. No.	District	No. of Schools	No. of Beneficiaries
9	Perambalur	3	28
10	Salem	12	103
11	The Nilgiris	1	8
12	Thiruvallur	40	90
13	Thiruvannamalai	43	622
14	Vellore	105	3016
15	Villupuram	35	241
16	Thiruchirappalli	6	46
	Total	350	5,360

Source: SSA Tamil Nadu

Table 1.7 - Sample Monthly Report of SSA Tamil Nadu: Comparison of school grading in SABL for September and October 2013(8 Districts) Sample Report of SSA Tamil Nadu

S. No.	District Name	No. of Schools	Grade																			Net Total
			A				B				C				D				E			
			Sept	%	Oct	%	Sept	%	Oct	%	Sept	%	Oct	%	Sept	%	Oct	%	Sept	%	Oct	%	
1	Ariyalur	538	225	42	266	49	271	50	241	44.8	41	8	30	6	0	0	0	0	0	0	1	0	537
2	Chennai	433	49	14	61	14	303	70	307	70.9	76	18	64	15	1	1	1	0	3	1	3	1	433
3	Coimbatore	1136	168	15	187	16	795	70	796	70.1	173	15	153	13	0	0	0	0	0	0	0	0	1136
4	Cuddalore	1425	206	14	238	17	1029	72	1060	74.4	173	12	119	8	16	1	8	1	0	0	0	0	1424
5	Dharmapuri	1159	151	13	135	12	707	61	866	74.7	294	25	98	8	7	1	0	0	0	0	0	0	1159
6	Dindigul	1400	173	12	191	14	1136	81	1137	81.2	90	6	71	5	1	0	1	0	0	0	0	0	1400
7	Erode	1176	138	12	167	14	851	72	879	74.7	151	13	94	8	0	0	0	0	36	3	36	3	1176
8	Kanchipuram	1354	359	27	380	28	811	60	809	59.7	181	13	163	12	2	0	1	0	1	0	1	0	1354

Source: SSA Tamil Nadu

1.8.2 Scheme Monitoring and Review Mechanisms, Innovations & Reward Structure (User Satisfaction)

Review of Curriculum, Teaching-Learning Materials: With regard to the curriculum, educational experts, teachers and students demonstrated positive perceptions about ABL methodology. This included perceptions that ABL curriculum enabled the teaching-learning process to move away from textbooks and use a variety of learning materials. Cards were rated as "good" on content and physical aspects, but need for improvement was suggested in terms of inaccuracies of illustrations, restricted usability and relevance. Evidence also suggested that at times cards were used in a way that promoted drilling, or mechanical ways of learning. There was also some disagreement between experts and teachers with regard to the extent to which cards enhanced children's thinking capacity, sequencing of cards and milestones, and whether activities were appropriate, simple and easy. Similarly, most of the supplementary material was rated from satisfactory to excellent by experts.

However, there were some reports of poor quality of supplementary material, and reports of issues with regard to language used, illustrations, font size and factual inaccuracies. Concerns about the safety aspects of the Mathematics kit were also raised. A suggestion to develop district-specific supplementary books was also raised.

State Report Cards: Using the DISE software developed by NUEPA, State Report Cards are prepared based on data received from about 1.41 million schools spread over 644 districts in 35 States and UTs of the country. Tamil Nadu state reports are also prepared on a monthly and academic year basis using this software and shared with educational administrators in the state for their review.

1.8.3 Capacity Building and IEC Campaigns (Utility and Sustainability)

ABL Support Systems: Curriculum, Teacher Training and Support by BRTEs

NCERT and other baseline quantitative studies suggest that overall results were mixed with regard to the effectiveness of ABL support systems. With regard to teacher training, teachers expressed a positive perception towards ABL methodology and were satisfied with the training imparted. The content of training material was rated as good by experts (BRTEs); however, they also expressed a need to make the training material more contextually relevant.

Evidence suggested that ABL was not being fully implemented as intended. Although teachers reported that they received training and felt competent in ABL methodology, evidence from BRTEs suggested poor attendance, participation and lack of cooperation from teachers during ABL training. BRTEs also referred to teachers' resistance in accepting the new ABL methodology as well as perception of parental dissatisfaction about ABL.

Although teachers and BRTEs possessed good knowledge and awareness of the ABL methodology, improvements were still required with regard to their understanding of teachers' role with different groups, self-learning material, use of ABL cards and supplementary material, purpose of teacher cards and sequence of activities.

Secondly, the awareness of parents, community members and VEC members was found to be limited, especially with regard to how ABL differs from regular schooling in terms of non-usage of textbooks, self-assessment instead of examination, and lack of homework and progress cards.

Thirdly, NCERT and other baseline quantitative studies also found that improvement in classroom organisation is required. A large number of teachers (approximately 44%) also felt the need for additional material during the teaching-learning process in ABL classrooms. Possible reasons for ABL not being implemented as intended included inadequate training of teachers, BRTEs and VEC members, and lack of knowledge and awareness among some of the older generation teachers and the community members about ABL methodology. Teachers' enhanced workload and their inability to sit on the floor amongst students due to health problems may have further impeded proper implementation of ABL. Implementation gaps were also observed in infrastructural aspects such as lack of space, provision of cards and inadequacy of additional support material.

Active Learning Method (ALM)

As batches of ABL-educated school children progressed and graduated from lower primary (Classes I to IV) to upper primary (Classes V to VIII) classes, a need was felt to introduce a similar, self-paced and peer-to-peer learning methodology for better understanding and skill development in upper primary classes (Classes V to VIII). Thus, an adaptation of the existing school curriculum, teaching-learning materials and books was undertaken by the SSA Tamil Nadu team, in close coordination with the SCERT Tamil Nadu. ALM is functional in approx. 12,000 upper primary government and aided schools of Tamil Nadu since 2008. This approach also serves to provide professional satisfaction to teachers, especially younger batches, who feel motivated to adopt the innovative pedagogy in the classroom.

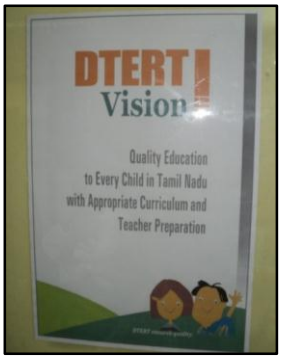


Figure 1.2 - SABL Messaging

Figure 1.3 - Stacks of Teaching-Learning Material: SSA Warehouse Chennai

1.8.4 Financial Viability (Sustainability): Funding through Sarva Shiksha Abhiyan

Simplified Activity Based Learning (SABL) programme is funded by the Government of Tamil Nadu through state govt. funds and SSA funds for providing necessary infrastructure and capacity building.

As such there has not been a shortfall in funding for running the ABL programme or rejection of a suggested activity, purely on budgetary grounds by Govt. of Tamil Nadu.

1.8.5 Organisational Structure and Stakeholder Participation: Non-Academic outcomes of ABL (Scalability and Sustainability)

Qualitative data pointed to several non-academic outcomes associated with the ABL initiative. These included greater self-confidence, increased motivation and less fear of teachers and exams among students, improved student-teacher relations, better cooperation among students, increased teacher involvement, and a greater focus on child-centred practices.

Impact on Teachers: Under the ABL methodology, students up to Class IV were not given any homework. This helped reduce teachers' workloads considerably and freed up young children to continue to learn a variety of things from the family, from their community and from observing nature/natural surroundings. Thus, ABL propagates the principle that knowledge can be garnered from many sources.

An unintended negative outcome emerged when a few teachers reported developing health problems due to sitting on the floor for long hours.

1.8.6 Technology Interventions (Scalability and Replicability)

District Information System for Education (DISE), www.dise.in: The DISE report is one of the principal sources of planning and monitoring used by the SSA Project Team. Data is collected from all recognised and unrecognised schools to meet the requirement of both School Education and Elementary Education Directorates. NUEPA supplied new software, which was first piloted exclusively in Tamil Nadu. This was in view of the fact that Tamil Nadu was the first state to achieve complete coverage under DISE. The required reports are generated through the software at Cluster, Block, District and State levels and shared with user departments, namely, the School Education and Elementary Education Directorates as well as stakeholders at various levels.

Education Management Information System (EMIS), www.emis.tnschools.gov.in: Currently, the Tamil Nadu School Education Department operates its website and communication (e-mail system) with the help of the NIC. But given the vast scale of operations of the School Education Department, the Govt. of Tamil Nadu announced the creation of the Education Management Information System (EMIS). The portal of the School Education Dept. (functioning since 2013) hosts the entire database of schools, teachers,

students and officials, the Educational Content Server (ECS) and Intra-Departmental Communication system.

SMS-based Attendance System for Teachers: Starting June 1, 2012 an SMS-based attendance marking system has been started in all Tamil Nadu government schools. The Headmaster/Headmistress is required to upload the attendance records of all teachers and non-teaching staff to the central server, which in turn is transmitted to all senior officers of the School Education Department. This has brought a greater degree of transparency and discipline and also ensures availability of teachers in the classrooms.

ICT @ Schools: The ICT in Schools, Smart Schools and Project Shiksha (supported by Microsoft) programme have enabled high and higher secondary schools with computer facilities, besides helping in capacity building through training of teachers. Going forward, the Govt. of Tamil Nadu announced the "ICT @ Schools" programme to provide computer facilities to primary and upper primary schools in the state, so as to train children at a very young age in the use of computers. Under this programme 20,420 schools are being provided with computers in a phased manner from 2012-2013 to 2015-2016. Along with the computers, multimedia projectors are also being supplied to schools. These facilities are expected to help middle schools, high schools and higher secondary schools to be integrated as well as to facilitate students to learn subjects through computers and the Internet.

More details on deployment of innovative ICT solutions are mentioned in the Implementation Approach section.

1.9 Shortfalls and Suggested Corrective Actions

Table 1.8 – Initiative shortfalls and suggested corrective actions

Weakness/Shortfall	Suggested Corrective Action
1) **Non-uniform implementation:** All schools across all districts may not have the same capabilities in terms of availability of professional teachers and trained resource persons.	Regular monitoring of school performance and intervention through expert resource persons, such as BRTEs; due consultations between Directorate of School Education and SSA State Project Office so that adequate strength of qualified teachers are recruited and trained, to plug gaps in teaching capability in identified 'low performance' districts/blocks.
2) **Rewards and Recognition:** This is not clearly defined for teachers, principals or resource persons who display exemplary zeal in implementing the ABL scheme.	The system of rewards and recognition, promotion and transfers needs to be closely aligned with the expected teaching-learning outcomes in line with the SABL guidelines, CCE curriculum, RTE and other requirements of UEE. Specifically, SSA/SABL state project office should be consulted by Dept. of School Education while designing reward and recognition programmes for teachers and principals.
3) **Suspect Quality of School Infrastructure and Facilities:** Schools in small towns and remote villages have basic infrastructure and facilities, but it is not clear if these are adequate to meet increasing expectations of students and parents.	Schools in small towns, remote villages must be upgraded with adequate facilities (classrooms, lighting, clean drinking water, separate toilets for girls etc.). This will enable them to attract better teachers, more student

Weakness/Shortfall	Suggested Corrective Action
	enrolments and help bridge the urban-rural divide, especially in the adoption of digital technologies.
4) Non-availability or Low Availability of Infrastructure for Teaching-Learning through the use of PCs, Audio-Visual Aids: Many schools lack PC-based or AV teaching-learning equipment.	Teaching-learning with the use of PCs, Tablets and other audio-visual aids should be incorporated as a part of standard pedagogy to give young children a taste of modern technology at an early age.

1.10 Indicative Factors for Identification of Target States

The Ministry of Human Resource Development (MHRD) is implementing various schemes in Educationally Backward Blocks (EBBs) such as Model Schools, construction of girls' hostels, Kasturba Gandhi Balika Vidyalayas (KGBVs) etc. These EBB blocks have been identified by the following methodology:

> *Initially a list of 3,073 educational backward blocks (EBBs) was drawn up in connection with the Sarva Shiksha Abhiyan. This was arrived at on the basis of twin criteria of Female Literacy Rate (FLR) being below the national average of 46.13% and Gender Gap in Literacy being above the national average of 21.59%. Both these criteria had been earmarked by the Registrar General of India (RGI). Subsequently, this list was expanded to include 406 more blocks, out of which 404 blocks had rural FLR of less than 45% irrespective of the Gender Gap. Besides, one SC concentration block from West Bengal with SC Rural FLR of 19.81% and one ST concentration block in Odisha with ST Rural FLR of 9.47% were also included, taking the total number of EBBs to 3,479.*

Thus, states/districts that have: a) low literacy rates and/or high school drop-out rates; b) low female literacy rates (FLR) and/or large gender gaps in literacy [in effect, a large number of educationally backward blocks (EBBs)], and c) low levels of learning outcomes amongst elementary school students, are good candidates for replication of an activity-based learning programme.

Indicative data, to serve as a guideline and for the purpose of illustrating the suggested methodology, is provided in the tables below; as shown, Andhra Pradesh, Bihar, Chhattisgarh, Dadra & Nagar Haveli, Gujarat, Jharkhand, Odisha, Rajasthan and Uttar Pradesh are prime states/UTs where an innovative, learning-aids assisted school education system could help to tackle the decades-old problems of low literacy rates, high school drop-out rates and poor educational outcomes.

The 'Big Change' in India's school education policy framework since 2012 (Twelfth Plan document of the Planning Commission) is summed up in the following two abstracts:

"The four main priorities for education policy have been access, equity, quality and governance. The Twelfth Plan will continue to prioritise these four areas, but will place the greatest emphasis on improving learning outcomes at all levels."

"Improve learning outcomes that are measured, monitored and reported independently at all levels of school education, with a special focus on ensuring that all children master basic reading and numeracy skills by Class 2 and skills of critical thinking, expression and problem solving by Class 5."

Table 1.9 - Grade Wise School Leavers' Rate by State, 2009-2010

S. No.	State	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
1	Andhra Pradesh	11.5	10.3	8.5	8.4	4.8	5.4	3.0	-
2	Assam	4.2	3.3	1.9	1.5	5.4	3.4	2.8	-
3	Bihar	7.9	7.2	8.2	7.4	6.3	6.0	4.9	1.3
4	Chhattisgarh	7.3	4.9	7.5	6.8	1.4	9.5	5.1	2.1
5	Delhi	1.6	1.4	1.4	1.0	1.0	1.3	1.3	0.3
6	Gujarat	4.5	4.0	4.2	4.3	5.5	4.0	2.3	-
7	Haryana	4.2	3.8	4.2	3.3	1.6	1.0	1.4	0.7
8	Himachal Pradesh	2.3	2.4	2.3	1.7	1.5	3.6	1.4	0.4
9	Jammu & Kashmir	13.6	5.8	3.9	2.2	1.1	2.4	1.7	1.0
10	Jharkhand	9.7	8.6	10.1	9.1	8.7	8.3	7.6	4.8
11	Karnataka	4.3	3.4	3.5	3.7	3.4	3.1	1.4	-
12	Kerala	2.5	2.5	2.4	1.7	4.3	1.6	1.3	-
13	Madhya Pradesh	6.9	8.0	5.7	6.4	2.4	4.1	3.0	3.8
14	Maharashtra	4.7	4.2	2.4	2.6	6.8	4.9	1.8	-
15	Orissa	2.8	2.9	2.4	2.8	2.0	3.4	6.1	-
16	Punjab	7.4	5.9	5.6	5.0	4.1	4.9	4.7	5.0
17	Rajasthan	15.1	14.2	13.0	12.0	6.6	11.9	7.8	5.9
18	Tamil Nadu	3.2	2.2	1.9	1.2	2.0	4.9	4.0	4.0
19	Uttar Pradesh	6.7	6.5	5.9	5.3	1.1	2.9	4.4	2.6
20	Uttarakhand	2.0	2.0	1.7	2.0	0.8	2.1	2.7	1.1
21	West Bengal	2.7	2.7	2.3	1.9	1.0	2.0	1.7	0.4
	All States	**6.3**	**5.9**	**5.4**	**5.0**	**3.3**	**4.8**	**4.0**	**2.8**

Source: EdCil Report, January 2013

School Leavers: A student is termed as a school leaver if he/she has left the school and his/her name is struck off the rolls on or before 30th September of the academic year.

School Dropouts: A school leaver or pass-out is a dropout if he/she does not pursue studies in another school during the following academic session.

Table 1.10 - Grade Wise School Dropout Rate by State, 2009-2010

S. No.	State	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
1	Andhra Pradesh	1.3	1.4	2.0	0.9	9.0	1.6	3.2	-
2	Assam	1.7	1.1	1.2	7.0	2.4	1.8	5.9	-
3	Bihar	2.3	2.3	2.7	1.9	6.2	1.6	1.3	0.5
4	Chhattisgarh	2.8	1.6	2.7	2.5	13.7	6.1	2.4	1.7
5	Delhi	0.3	0.3	0.7	0.2	21.6	0.2	0.5	0.2
6	Gujarat	0.4	0.4	0.8	2.3	0.5	0.3	7.8	-
7	Haryana	0.8	0.6	0.8	0.7	6.5	0.3	0.1	0.2
8	Himachal Pradesh	0.3	0.4	0.4	0.5	5.0	2.2	0.3	0.2
9	Jammu & Kashmir	0.7	0.8	0.4	0.2	4.5	0.8	0.4	0.3
10	Jharkhand	2.5	2.1	2.1	1.8	6.5	2.7	3.0	2.7
11	Karnataka	1.0	1.2	0.8	1.1	3.5	1.7	9.6	-
12	Kerala	0.1	0.0	0.0	15.5	0.1	0.1	10.5	-
13	Madhya Pradesh	2.3	1.5	1.5	0.9	7.9	2.2	1.7	2.5

S. No.	State	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
14	Maharashtra	1.7	0.7	0.4	4.9	0.2	0.2	3.9	-
15	Orissa	0.5	0.4	0.5	0.5	5.0	1.5	8.3	-
16	Punjab	3.2	2.3	2.6	2.6	9.0	1.7	2.2	0.5
17	Rajasthan	2.6	2.2	2.1	2.5	6.6	2.5	2.2	2.0
18	Tamil Nadu	0.6	0.4	0.6	0.4	6.0	2.3	1.6	1.8
19	Uttar Pradesh	1.5	1.9	1.5	1.0	18.1	1.5	1.7	1.2
20	Uttarakhand	1.0	1.1	0.9	1.0	4.5	1.0	1.0	0.4
21	West Bengal	1.5	1.1	0.8	6.9	0.1	0.4	0.4	0.2
	All States	**1.6**	**1.4**	**1.4**	**2.1**	**10.1**	**1.6**	**3.3**	**1.3**

Source: EdCil Report, January 2013

Table 1.11 - Educationally Backward Blocks in India by State, 2007-08

S. No.	State Name	Total Block	EBB Block	Non-EBB Block	% of EBB Blocks
1	Andhra Pradesh	1,128	737	391	65.3%
2	A & N Islands	9	0	9	0.0%
3	Arunachal Pradesh	79	40	39	50.6%
4	Assam	178	81	97	45.5%
5	Bihar	534	530	4	99.3%
6	Chandigarh	20	0	20	0.0%
7	Chhattisgarh	146	74	72	50.7%
8	Daman & Diu	2	0	2	0.0%
9	Delhi	28	0	28	0.0%
10	D & N Haveli	1	1	0	100.0%
11	Goa	11	0	11	0.0%
12	Gujarat	224	85	139	37.9%
13	Haryana	119	36	83	30.3%
14	Himachal Pradesh	118	5	113	4.2%
15	Jammu & Kashmir	215	97	118	45.1%
16	Jharkhand	212	201	11	94.8%
17	Karnataka	180	74	106	41.1%
18	Kerala	164	1	163	0.6%
19	Lakshadweep	8	0	8	0.0%
20	Madhya Pradesh	313	201	112	64.2%
21	Maharashtra	355	43	312	12.1%
22	Manipur	35	5	30	14.3%
23	Meghalaya	39	9	30	23.1%
24	Mizoram	36	1	35	2.8%
25	Nagaland	47	11	36	23.4%
26	Orissa	315	173	142	54.9%
27	Puducherry	3	0	3	0.0%
28	Punjab	142	21	121	14.8%
29	Rajasthan	254	186	68	73.2%
30	Sikkim	9	0	9	0.0%
31	Tamil Nadu	402	44	358	10.9%
32	Tripura	40	9	31	22.5%
33	Uttarakhand	96	19	77	19.8%
34	Uttar Pradesh	830	680	150	81.9%
35	West Bengal	362	87	275	24.0%
	National/Total Average	**6,654**	**3,451**	**3,203**	**51.9%**

Source: Sarva Shiksha Abhiyan, on the basis of Secondary Education Management Information System (SEMIS) for 2007-2008

Table 1.12 - Performance of States on School Education: India (Rural) – ASER 2009 (%age of Children who can Read English and Do Arithmetic)

S. No.	State	Percentage of Children who can Read English					Percentage of Children who can Do Arithmetic				
		Capital Letters or More	Capital Letters or More	Words or More	Words or More	Sentences	Recognise Nos. 1-9 or do more	Recognise Nos. 11-99 or do more	Subtract or do more	Subtract or do more	Do Division
		STD I	STD II	STD III	STD IV	STD V	STD I	STD II	STD III	STD IV	STD V
1	Andhra Pradesh	63.9	78.5	42.1	59.2	37.3	78.4	69.5	44.5	65.9	44.2
2	Arunachal Pradesh	93.5	97.3	84.8	94.2	73.8	97.5	93.6	80.3	93.4	65.1
3	Assam	36	59.1	30	44.9	25.6	70.3	54	34.2	55	23.7
4	Bihar	33.4	63.1	31.4	49.6	31.3	59	53.4	45.5	68.9	52.1
5	Chhattisgarh	49.4	75.3	19.5	36.8	19	85.3	59.2	42.8	70.2	52
6	Goa	81.2	97.6	84	96.1	87	97.5	93.1	86.1	95.3	80.2
7	Gujarat	25.3	38	10.4	16.5	7.9	64.8	38.9	23.4	41.9	24.6
8	Haryana	65.8	86.2	47.3	60.5	43.8	77.4	66.7	53	68.1	54.9
9	Himachal Pradesh	72.5	92.4	63.5	84.5	63.3	86.4	82.5	66.1	84.4	64.1
10	Jammu & Kashmir	69.5	88.6	54.8	67.9	41.8	76.7	52.4	32	43.4	23.6
11	Jharkhand	41.8	70.1	21.7	40.6	18.1	65.9	48.4	32.1	56	31.8
12	Karnataka	37	53.8	18.1	27.1	15.6	76	58.7	28	46.1	21.7
13	Kerala	84.6	91.6	65.9	78.5	54.5	94.4	87.9	62.7	77.2	45.4
14	Madhya Pradesh	60.9	81.1	33.1	51.8	29.6	90.8	70.8	67.9	84.5	66.5
15	Maharashtra	40.1	64.1	30.8	50.5	34.6	89.1	74.1	55.8	77.9	51.2
16	Manipur	94	98.4	82.4	90.2	66.6	96.8	87.9	69.8	84.4	51
17	Meghalaya	79.9	93.3	58.2	78.7	57	86.9	73.6	45.9	69.5	32.6
18	Mizoram	81.4	94.6	73.3	87.2	57.8	86	82.7	67.3	82.2	59.5
19	Nagaland	93.5	98	71.9	84.8	68	96.6	83.4	57.4	73.8	62
20	Orissa	34.5	55.6	28	46.4	25.3	81.6	60.5	48.5	65.9	44.3
21	Punjab	67.7	83.4	39.9	58	34.5	82.7	59.5	50.9	73.3	48.9
22	Rajasthan	34.6	62.1	20.9	36.1	17.8	57.2	39.4	27.1	48.2	31.5
23	Sikkim	90.6	97.8	89.9	91.3	80.8	96.4	86.3	64.8	79.2	49.1
24	Tamil Nadu	43.3	71.7	28.3	45.1	19	55.3	57.7	19.2	39.3	13.9
25	Tripura	80.4	85.7	33.5	56.7	22.7	94.5	71.6	44.6	59.3	24.1
26	Uttarakhand	61.7	77.7	37.4	55	34.5	73.7	59.6	42.8	65.7	45.7
27	Uttar Pradesh	34.8	58	16.2	27.1	14	54.8	36	20.5	36.9	21.1
28	West Bengal	56.9	74.4	35.4	52.2	27.1	79.9	58.6	43.8	63.4	36.5
	All India	**43.8**	**66.2**	**28.6**	**44.1**	**25.7**	**69.3**	**54.6**	**39**	**58.8**	**38**

Source: ASER Reports for 2009, http://asercentre.org

Thus, while Tamil Nadu had a relatively high literacy level, the quality of schooling was unsatisfactory. In studies conducted by organisations such as ASER, the achievement (quality of learning outcomes) in language and numeracy skills was found to be below par. More details are mentioned in the table above.

In fact, Tamil Nadu was ranked 22nd among all the 25 states, in Mathematics, the average score was as low as 52.5% (*Source: NCERT Baseline Study, 2008*).

1.11 Implementation Approach

Based on the 'Outcomes Achieved' and 'Key Study Findings' sections, states of India that wish to replicate the Activity Based Learning (ABL) Tamil Nadu model of elementary education, or those that wish to improve capacities in school infrastructure, teacher training, teaching-learning pedagogy, learning outcomes of students and development of intuitive teaching-learning material (books, models, learning cards etc.) can refer the short-listing criteria and implementation approach (replication guidelines) described below.

Table 1.13 - Critical Success Factors for Scheme/Project Replication

Factor	Strength/Benefit
Scheme Scope & Coverage, Enabling Policy Interventions	**1)** Non-competitive approach to learning imbibed amongst students. **2)** Intuitive, colour-coded learning materials help to reinforce understanding of subjects by students, strengthen conceptual skills. **3)** Creative (art & craft) and extra-curricular activities help children discover their tastes and likes/dislikes. **4)** SABL running successfully across nearly 37,500 govt. and aided schools in Tamil Nadu.
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	**1)** **Innovative Pedagogy**: Informal style of teaching-learning and shared responsibility creates good classroom atmosphere, improved learning outcomes. **2)** **Monthly and Annual District-wise, Block-wise Monitoring of Performance by use of School Proforma**: The DISE system is used to generate district-wise school monitoring reports, as detailed in the following sections.
Capacity Building and IEC Campaigns	**1)** **Creation of a Critical Mass of School Education Experts**: A panel of Subject Experts, Editors, Writers, Visual Artists, and Child Psychologists has been created under the aegis of SCERT Tamil Nadu, DTERT and DIETs. Expert teacher training resource persons (BRTEs) are available at state, district and block levels. **2)** **IEC Campaigns:** These have focused on getting stake-holder buy-in for the new pedagogy, especially from teachers, through posters, training programmes and refresher classes held at regular intervals or on need-basis.
Financial Viability	**1)** **Programme Funding via SSA Budgets**: SSA funds are utilised by GoTN to implement ABL methodology in government and aided primary schools.
Organisational Structure and Stakeholder Participation	**1)** **State-wide Implementation**: The ABL scheme has been implemented across all 32 districts of Tamil Nadu in nearly 30,000 government and aided schools. **2)** **Cadre of Professional Teachers, Trainers and Resource Persons**: ABL has helped to create a dedicated cadre of research, training & teaching staff at state, district and block levels.
Technology Interventions	**1)** **School Performance Monitoring & Reporting Automation**: DISE software developed by NUEPA helps to track and monitor the performance of schools by district on a monthly basis.

Salient Features of Activity Based Learning (ABL), Tamil Nadu: Replication Guidelines

Several states in India are experimenting with and adapting versions of Activity Based Learning (ABL). Tamil Nadu, Karnataka and Andhra Pradesh have expanded the programme to include all government schools. Madhya Pradesh and Chhattisgarh are covering a large number of their schools. According to UNICEF estimates of 2011, the ABL programme is running in 13 states of India covering approx. 2,50,000 primary schools and close to 10 million children. Additionally, groups in Ethiopia, Peru, Malawi, Sierra Leone and Pakistan have shown interest in implementing the ABL model.

The following step-wise approach may be followed for replication of the programme by the

State SSA Project Director's Office, in coordination with the Directorate of Primary Education. The approach must consider and incorporate the outcomes and findings of the Tamil Nadu ABL model as captured in the earlier sections, duly factoring in necessary steps to overcome the shortfalls encountered:

Step 1: Understand and document drawbacks of legacy teaching-learning practices (high school dropout rates, unsatisfactory learning outcomes, high repetition rates etc.)

Understand the shortfalls of traditional methods of formal classroom teaching, e.g., stress on rote learning and passing exams. This can be done through analysis of information captured in the School Proformas, DISE reports, NCERT baseline studies or third-party reports such as those published by ASER, UNICEF and other international aid agencies.

As per an EdCil report on school drop-out rates in 21 states of India published in January 2013, the top reasons for dropping out of school were: lack of interest in studies; poor economic condition of parents; migration of family and to help the family in domestic work After dropping out of school, the children were involved in helping their parents in household work, occupation work, working to earn money, while a lot of students were sitting idle and doing nothing.

Thus, such students represent an opportunity for an innovative programme such as ABL to target and bring back to school.

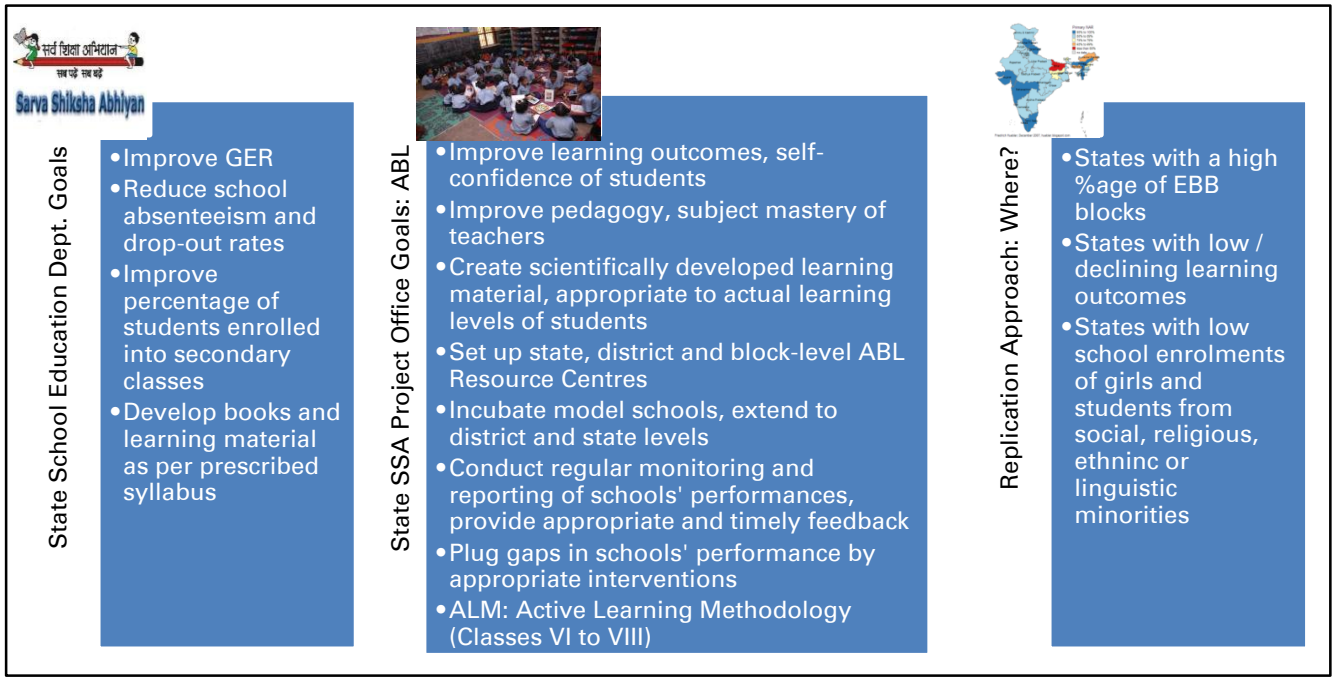


Figure 1.4 - Evolution of Primary Education Goals and Pedagogy in Tamil Nadu: Pointers for States

Step 2: Define scope and goals of State's Elementary Education Programme

Outcomes must be clearly stated in terms of reduction in school drop-out rates, improvement in GER, promotion to higher classes, enrolment of girls, minorities, enrolment under RTE Act, improvement in learning outcomes etc. The scope and goals should also be in line with the stress laid on improving school educational outcomes, as per the Twelfth Plan document of the Planning Commission of India (PCI) in Section 1.10. In this context, one would like to quote a leading educationist. When asked "Why cannot all elementary schools in India follow the ABL method of teaching-learning?", she observed:

"The answer to this question is dependent on three major factors - openness to change

amongst teachers, trainers and supervisors; administrative machinery and clout enjoyed by educational policy-makers and officials, and political will and financial support of the state government."

Step 3: Design Suitable Course Curriculum

Set up a cadre of expert, professional teachers and educationists to develop appropriate curricula suited to Elementary Classes/SABL methodology, with the aim to encourage use of ICT tools and audio-visual aids. Teacher-Student ratios are typically defined by the Dept. of School Education for any given state.

Case Study: Change in School Curriculum in line with CBSE's CCE Guidelines, Reinvention of ABL into SABL, Re-drafting of Teaching-Learning Materials

Starting September 2011, the School Education Department, Govt. of Tamil Nadu decided that all state board schools would introduce the Continuous and Comprehensive Evaluation (CCE) system in schools across the state, similar to that in CBSE schools and schools affiliated to other state boards such as Kerala and Karnataka. This led to the need to redraft the Tamil Nadu elementary school curriculum, rewrite books and redesign teaching-learning aids on a large scale. This exercise was undertaken by the SSA Tamil Nadu team, with active help and support from the SCERT Tamil Nadu. The opportunity was used to simplify and reduce the number of teaching-learning materials as well as the number of achievement milestones (Learning Ladder steps) for each of the five subjects taught to elementary school students under ABL Tamil Nadu. Under the curriculum and teaching-learning material restructuring exercise, the following activities were undertaken:

- Based on common syllabus all the subjects and languages underwent modification from Classes I to IV.
- Numbers of cards as well as activities were reduced reasonably.
- All the activities in ABL cards were simplified and refined for comprehensive learning.
- As referred in the National Curriculum Framework, Class I and Class II children belong to same age group. Hence, Class I and Class II Learning Ladders were combined and framed. In the same way Class III and Class IV Learning Ladders were combined.
- Logos of all the subjects were modified and framed, which are relevant to the activities.
- Text Books were used for – Reading, Writing, Homework, Colouring, Drawing and Reinforcement.
- "Puthaga poongkothu" books with colourful pictures were given to children to enrich their general knowledge and to create interest in extra reading.
- In accordance with CCE, the Evaluation Cards were prepared on the basis of knowledge, analysis, understanding and application.
- Formative Assessment (A) and Formative Assessment (B) activities were inbuilt in every milestone.
- Summative Assessment (SA) activities were incorporated at the end of each term, according to the timeframe.

Step 4: Design Teaching-Learning Material

Engage a panel of subject experts, teachers, writers, visual artists and editors to develop suitable material – books, charts, colour-coded models and other learning aids, audio-visuals etc. Further, the teaching-learning material to be developed must be in accordance with the guidelines laid down under CCE by MHRD/the relevant state school education board.

Case Study: SABL Tamil Nadu Teaching-Learning Material

In contrast to the traditional classroom setup where the lecture method was the primary source of student instruction, ABL allows children to learn through cards, indulge in various activities, make their own novel displays which are hung in classrooms, and learn subjects conventionally perceived as difficult, e.g., Mathematics with the help of kits. Such learning is likely to foster creativity amongst children by providing them with ample opportunities to learn via trial and error.

Table 1.14 - For SABL teaching-learning material, subject-wise colours are given as follows:

Subject	Colour Coding
Tamil	Blue
English	Pink
Environmental Studies	Green
Mathematics	Maroon
Social Science	Orange

Source: SSA Tamil Nadu

Table 1.15 - Restructuring of Teaching-Learning Materials and Milestones under SABL as per CCE, 2011

Activity Cards I-IV	Tamil	English	Maths	Science	Social Science
Old cards Numbers	874	1649	914	825	384
New Cards	321	342	404	416	230
Old Milestone	64	48	64	50	31
New Milestone	39	29	40	47	26

Source: SSA Tamil Nadu

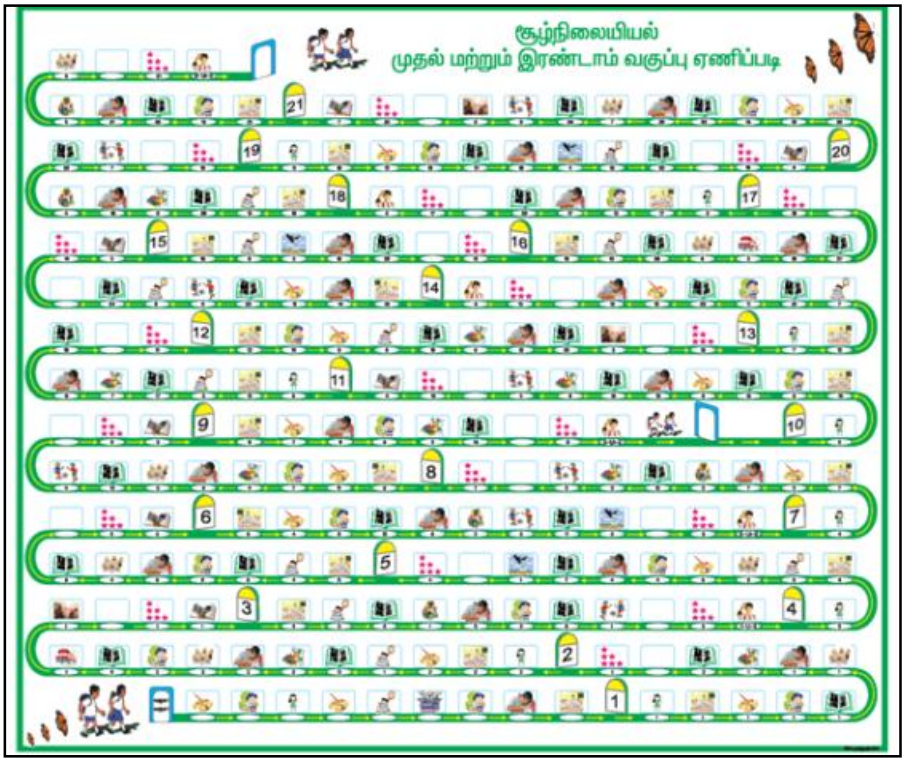


Figure 1.5 - SABL Tamil Nadu: Sample EVS Chart (Tamil Medium)
Source: SSA Tamil Nadu

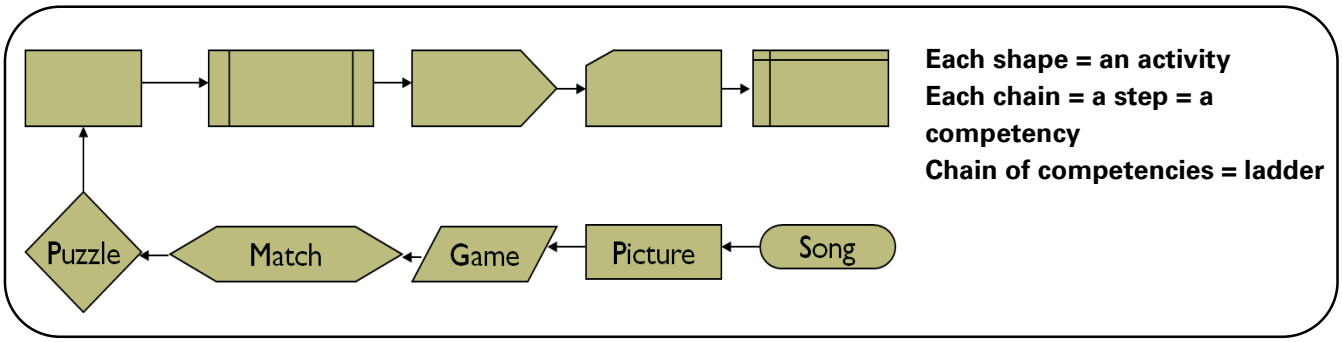


Figure 1.6 - SABL Learning Ladder
Source: SSA Tamil Nadu

Innovation: There are a few blank steps in every ladder. These are intended for any new area the teacher may wish to include. Thus, the material leaves scope for the teachers to be creative. They may add songs that the children can sing together and relate/build stories for the shadow puppet shows. In effect, children learn better by use of familiar material from their own environment.

Case Study: National Council for Teacher Education (NCTE), http://www.ncte-india.org

The National Council for Teacher Education, in its previous status since 1973, was an advisory body for the Central and State Governments on all matters pertaining to teacher education, with its Secretariat in the Department of Teacher Education of the National Council of Educational Research and Training (NCERT). Despite its commendable work in the academic fields, it could not perform essential regulatory functions, to ensure maintenance of standards in teacher education and preventing proliferation of substandard teacher education institutions. The National Policy on Education (NPE), 1986 and the Programme of Action there under, envisaged a National Council for Teacher Education with statutory status and necessary resources as a first step for overhauling the system of teacher education.

The National Council for Teacher Education as a statutory body came into existence in pursuance of the National Council for Teacher Education Act, 1993 (No. 73 of 1993) on the 17th August,1995.

The main objective of the NCTE is to achieve planned and coordinated development of the teacher education system throughout the country, the regulation and proper maintenance of Norms and Standards in the teacher education system and for matters connected therewith.

Step 5: Define aims and objectives of capacity building; Institutionalise review mechanisms: Improve frequency of training

Teacher training in handling new material, train the trainer programmes, refresher courses, succession planning etc. Besides induction training for teachers being recruited into the SABL, refresher courses should be organised at regular intervals, say, every six months, so that teachers can share their experiences and suggest improvements and innovations. Teacher strength must be monitored at regular intervals of say, every two years, in order to maintain adequate staffing levels.

Case Study: Directorate of Primary Education Tamil Nadu

As per the vision of policy-makers and the provision of the Right to Education (RTE) Act, 2009, states should endeavour to ensure that all children in the 6-14 years age group are enrolled in school.

The Tamil Nadu Right of Children to Free and Compulsory Education Rules, 2011 was notified by the state government in November 2011. In order to focus on Primary Education, the state govt. set up a separate Directorate in 1986. As per the Govt. of Tamil Nadu's budget for 2012-13, the Directorate had the objective of achieving 100% enrolment of children in school education by end of 2012-13. The Directorate is headed by a Senior Director and supported by nearly 4,500 non-teaching staff. Under the jurisdiction of the Directorate are nearly 35,000 primary schools, nearly 10,000 middle (upper primary) schools, with student strengths of nearly 55 lac – nearly 32 lac in primary and 22 lac in upper primary schools.

There were nearly 1.4 lac teachers in the state's primary schools and 0.75 lac teachers in upper primary schools. Directorate of Primary Education, Govt. of Tamil Nadu decided to further strengthen the cadre of teachers by recruiting nearly 8,000 secondary grade teachers, nearly 3,200 graduate assistants and nearly 1,900 Headmasters/Headmistresses.

Tamil Nadu was already well ahead of the India average in terms of Pupil-Teacher Ratio (PTR) as prescribed by the RTE Act. At the primary school level, the state's PTR moved from 1:41 in 2002-2003 to 1:27 in 2011-12, as against the RTE prescribed norm of 1: 35.

Thus, the improved availability of teaching and teacher support staff further helped in improving the coverage of ABL in Tamil Nadu.

Table 1.16 - Tamil Nadu Pupil-Teacher Ratio (PTR): Academic Year 2011-2012

Category	PTR as per requirement	State PTR
Primary	1:30	1:27
Upper Primary	1:35	1:27

Source: Tamil Nadu School Education Policy 2012-2013 Report (Azim Premji Foundation)

Measuring, Monitoring & Reporting Teaching-Learning Outcomes, Planning Interventions to Improve School Performance: In Tamil Nadu ABL schools, **Achievement Charts** are used to clearly show the level of achievement of children in a classroom in each subject. Thus, the teacher is enabled to track every learner's progress. Monitoring of progress by the teacher is subtly combined with the child's freedom to select the pace of learning.

Achievement Charts for all classes in a school are consolidated to give rise to the monthly *School Proforma* report. School Proformas are uploaded and accessible to Directorate of Primary Education, Govt. of Tamil Nadu officers via the DISE portal, www.dise.in and, going forward, via the state-level EMIS portal, www.emis.tnschools.gov.in. The reports provide a school-wise, district-wise and state-wide view of school performance month-on-month. SSA State Project Directorate and GoTN Directorate of Primary Education teams can then take a view on further interventions required to improve the performance of schools' teaching-learning outcomes, transfer of teachers etc.

Case Study: Using ICT Solutions to address Apprehensions/Issues of Teachers and Parents with ABL Methodology in 'Nali-Kali' Karnataka

In Karnataka, during the state-wide roll-out of ABL methodology in AY 2009-2010, the **Department of State Education Research and Training (DSERT)** organised four teleconferences and covered around 90,000 teachers to address their issues with regard to the 'Nali-Kali' teachers' preparations, students' preparations and management of class-room transactions (teacher-student and student-student protocol). Teleconferences were also organised in the months of August, September, November and December of 2009 to enlighten the general public and parents, in particular. Further, five episodes on the classroom process of 'Nali-Kali' were prepared and telecast in the months of November and December 2009.

To allow for teachers and parents to solve their classroom management and monitoring of ward (son/daughter attending primary school) issues, a 'Nali-Kali Helpline' (**Sahayavani Toll Free Helpline**) was set up at state and district levels, working between 8:00 a.m. to 8:00 p.m. The state-level Toll Free Helpline was set up at the SSA Karnataka State Project Director's office with the number **1800-425-3030**.

'Nali-Kali' Monitoring: Finally, the task of Evaluation and Effectiveness of 'Nali-Kali' was entrusted to the Centre for Multidisciplinary Development Research of Dharwad. 'Nali-Kali' Resource Centres were set up at state, district, block and cluster level. 'Nali-Kali' Cells were activated at the state and district offices of SSA Karnataka. Academic support was provided by appointing a nodal officer for every 6-7 'Nali-Kali' schools, and School Visit Reports were prepared and circulated to all the monitoring functionaries at block, district and state levels to monitor progress in implementation.

'Nali-Kali' Evaluation: The state's Dept. of Primary Education administrators evaluated the teaching-learning and implementation methodology in-depth in the year 2002, before scaling up to all Govt. of Karnataka schools

Step 6: Focus on creation of shared assets, common resource pool and community involvement, incentives for future growth

Institutionalise a system with defined roles & responsibilities for educational administrators, content developers, subject experts, writers, visual artists, teachers, trainers, resource persons, PTA/MTA/SDMC/VEC members etc. at state, district and block levels. For example, the

state SABL teams need to engage closely with the State Councils of Educational Research and Training (SCERTs), District Institutes of Education and Training (DIETs) and Department of Teacher Education, Research & Training (DTERTs) to develop and update appropriate curriculum, text books and other teaching-learning aids. Shared assets such as State Resource Centre, District Resource Centres and Block Resource Centres should be set up and involved in the day-to-day management of the scheme.

Illustrative List of Enabling Institutions, Resource Centres and Resource Persons

1) District Institute of Education and Training (DIET)
2) Directorate of Teacher Education, Research and Training (DTERT)
3) State Resource Centre (SRC)
4) Block Resource Centre (BRC)
5) Block Resource Teacher Educator (BRTE)
6) State Council of Educational Research and Training (SCERT)

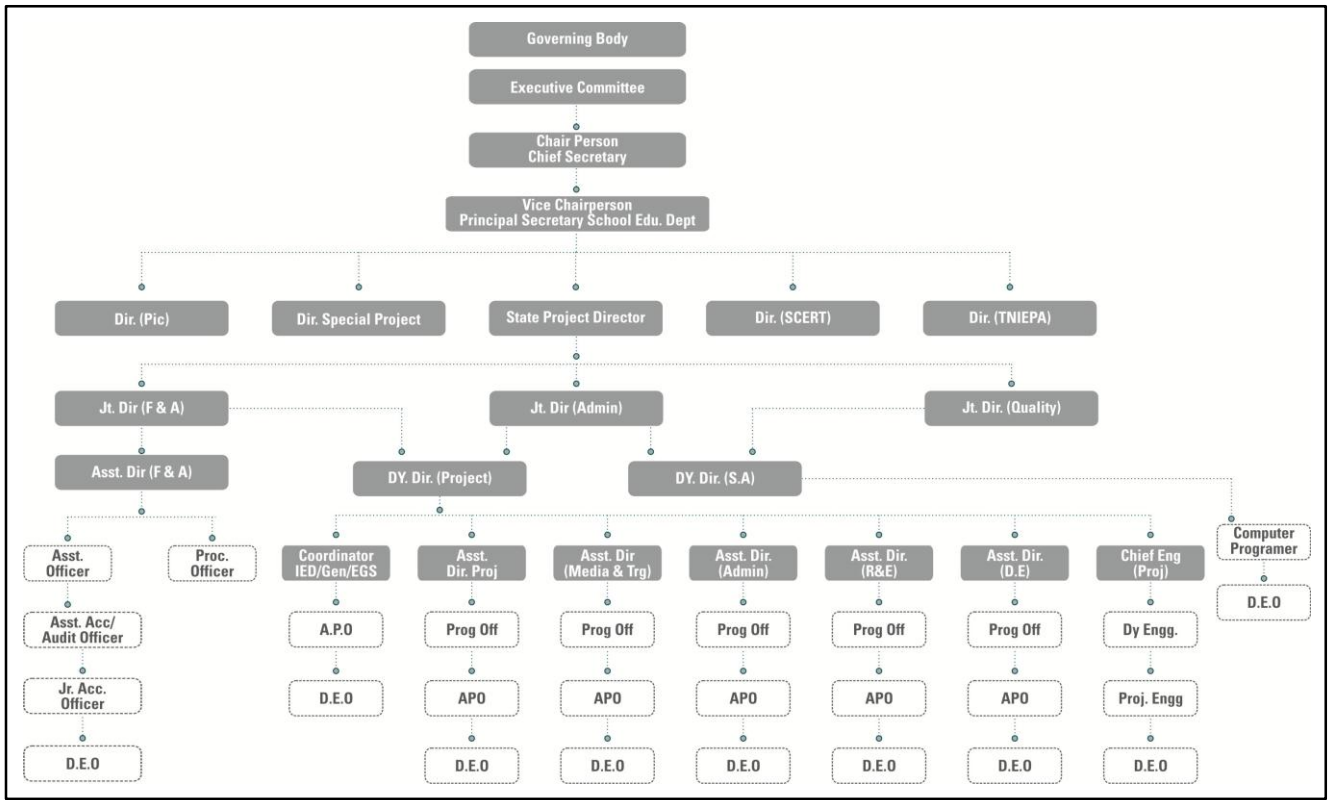


Figure 1.7 - Typical/Model Organisational Structure: State School Education Dept. And Sarva Shiksha Abhiyan State & Dist. Offices

Principal Secretary-School Education Dept: Principal Secretary-School Education Department
Dir-Pri Education: Director-Primary Education
SPD: State Project Director
Dir-SCERT: Director-State Council of Educational Research and Training
Dir-TNIEPA: Director-Tamil Nadu Institute of Educational Planning and Administration
Jt Director (F&A): Joint Director-Finance and Accounts
Dy Director (SA): Deputy Director-School Administration
Asst. Director (F&A): Assistant Director-Finance and Accounts
Coordinator (IED/Gen./EGS): Coordinator-Inclusive Education/General/Education Guarantee Scheme
Asst Director (R&E): Assistant Director-Research and Evaluation
APO: Assistant Programme Officer
DEO: Data Entry Operator

Overview of Key Processes: 'The How To' for Replication of ABL in Elementary Classes

Step 1 - Identify Elementary Education Needs & Priorities of State

1. **Children:**
   a. Identify the level of independent learning in children
   b. Examine learning levels of children
   c. Assess if Learning is taking place with understanding
   d. Understand the confidence level and self-esteem among children
   e. Assess students' thinking skills
2. **Classroom Process:**
   a. Need for shift from teacher-centric to learner-centric, child friendly classrooms at the primary level
   b. Identify and understand the self-learning potential of children
   c. Level of child participation and retention in schools
3. **Teacher:**
   a. Assess teacher's ability to deal with multi-grade/multi-level teaching-learning situations effectively
   b. Whether teachers are involved in facilitating students to learn at their own pace
   c. Assess whether the nature of evaluation is child friendly
   d. Examine the capacity of teachers to create learner-centric child friendly classrooms

Step 2 – Inputs/Resources

1. **Finances/Budgetary Support**:
   a. Local Govt. – SSA funds sanctioned by District or Block Project Officer/ Education Officer
   b. State Govt. – SSA District Budget sanctioned by State Project Director
   c. Central Govt. – SSA State Budget approved by MHRD
2. **Human Resources**:
   a. Teacher Trainers
   b. Teachers
   c. NGO/CSO workers
   d. Educational administrators and functionaries – state, district and block level
   e. VECs – School Principals, Teachers, MTA members, NGO activists etc.
3. **Materials:**
   a. Contextualised self-learning materials
   b. Infrastructure for classroom management
   c. Training materials

Step 3 – Implementation Activities

1. **Pedagogy and Material Development**
   a. Identification of institutions following alternative curricular practices, e.g., Rishi Valley Rural Education Centre (REC), Andhra Pradesh; Mirambika School, Delhi; Shikshantar School, Gurgaon; Ekalavya in Madhya Pradesh and Siddharth Village, Odisha etc.
   b. Exposure visits of selected teachers, subject experts and content writers to Rishi Valley REC, Andhra Pradesh; Mirambika School, Delhi; Shikshantar School, Gurgaon; Ekalavya in Madhya Pradesh and Siddharth Village in Odisha etc.
   c. Setting up of an ABL working model for state (model schools at state and district headquarters); development of teaching-learning materials for students (learning cards, charts, ladders, models etc.)
   d. Testing of ABL pedagogy and teaching-learning material at district level model schools; orientation session for parents of students/MTA members
   e. Fine tuning pedagogy and teaching-learning materials to suit local needs
2. **Teacher Training & Classroom Preparation**
   a. Material Development for Teacher Training using the services of the SCERT
   b. Series of training/orientation sessions for teachers in model schools at district and block headquarters
   c. Demonstration and on-site support by trained practicing teachers
   d. Inputs/suggestions for improvement from state level, district level and block level educational functionaries (AEEOs,

DEEOs, CEOs, BRTEs, CRC Supervisors etc.)

3. **Upscaling of ABL**
   a. Setting up of model ABL schools in each block
   b. Expansion of ABL pedagogy and teaching-learning material to all government and private aided schools in the state
   c. Provision of infrastructure required to implement ABL initiative (floor-level blackboards, teaching-learning material, audio-visual aids etc.) in state schools
   d. Printing and distribution of materials required for use in ABL classrooms
   e. Re-organisation of activities of teacher trainers (BRTEs)
   f. Receiving feedback from teachers for improvement of training modules, teaching-learning materials
   g. Review meetings at various levels of school administration
   h. Review visits by state and district level school education department functionaries, SSA State Project Director, SSA District Project Officer and others
   i. Process based gradation of schools' performance (monthly review)
4. **Other Activities**
   a. Policy directions through government orders to implement ABL in all state government-run, local body-run, minority community-run and private aided schools in the state
   b. Policy directions to cover requirements of Right to Education (RTE), Continuous Comprehensive Evaluation (CCE), Universalisation of Elementary Education (UEE), education of girls, minorities etc.
   c. Organisation of awareness programmes and orientation for Village Education Committee (VEC) members, Mothers' Teachers' Association (MTA) members etc.
   d. Mobilisation of support through local media – hoardings, banners, posters etc. and local influential persons – NGO/CSO workers etc.
   e. Review and improvement workshops for teaching pedagogy, teacher training materials, teaching-learning materials etc. in coordination with the State Council of Educational Research and Training; members of NGOs, CSOs etc.

Step 4 – Outputs

1. **Material Development**
   a. A duly constituted panel of experts to develop teacher training material, including practicing teachers, faculty members from DIETs/DTERT etc.
   b. A mechanism to seek inputs from teachers during their participation in material development workshops
2. **Teacher Training and Classroom Preparation**
   a. Teacher Training programmes conducted for government and aided school staff
   b. Various modules and training manuals prepared for teachers
   c. A panel of Teachers/Master Trainers/BRTEs to visit schools created as part of the Teacher Training calendar
   d. Preparation of classrooms to accommodate low-level blackboards (LLBs), racks for teaching-learning materials etc.
3. **Upscaling of ABL**
   a. Adequate number and types of cards, charts, models and other ABL teaching-learning materials made ready
   b. Suitable classroom infrastructure provided in government schools
   c. Classrooms for implementing ABL method of teaching-learning in school
4. **Monitoring**
   a. Quantum of money spent for meeting various ABL requirements – One-time as well as recurring monthly expenses
   b. School visits by SSA state project director, district project officer and block level monitoring officials
   c. Review meetings held
   d. Awareness campaigns and orientation programmes conducted amongst school administrators, teachers, MTA/PTA members etc.

Key Replication Processes: Indicative Timelines

These timelines are indicative timelines based on the interactions with the stakeholders involved in the initiative and secondary researches; the actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city. The indicative timeline may also vary depending on political and administrative will of policy makers and implementers.

Table 1.17 - Indicative Timelines

S. No.	Key Phase/Implementation Step	Indicative Timeline
1.	Understand and document drawbacks of legacy teaching-learning practices (high school dropout rates, unsatisfactory learning outcomes, high repetition rates etc.)	6 to 12 months
2.	Define scope and goals of State's Elementary Education Programme	6 to 12 months (along with Replication Step No. 1)
3.	Design Suitable Course Curriculum	6 to 12 months (after completion of Replication Step Nos. 1 and 2)
4.	Design Teaching-Learning Material	6 to 12 months (along with Replication of Step No. 3; including development & testing of an online school performance/teaching-learning outcomes monitoring & evaluation portal)
5.	Define aims and objectives of capacity building; Conduct training & orientation sessions for teachers; Institutionalise review mechanisms: Improve frequency of training	3 to 6 months (on completion of Replication Step Nos. 3 and 4, thereafter as an ongoing activity using the State, District and Block level resource centres/resource persons/BRTEs etc., including training of)
6.	Focus on creation of shared assets, common resource pool and community involvement, incentives for future growth and improved outcomes	As defined for Step No.5, above, thereafter as an ongoing activity

Overview of Proposed 'ABL' Implementation Approach

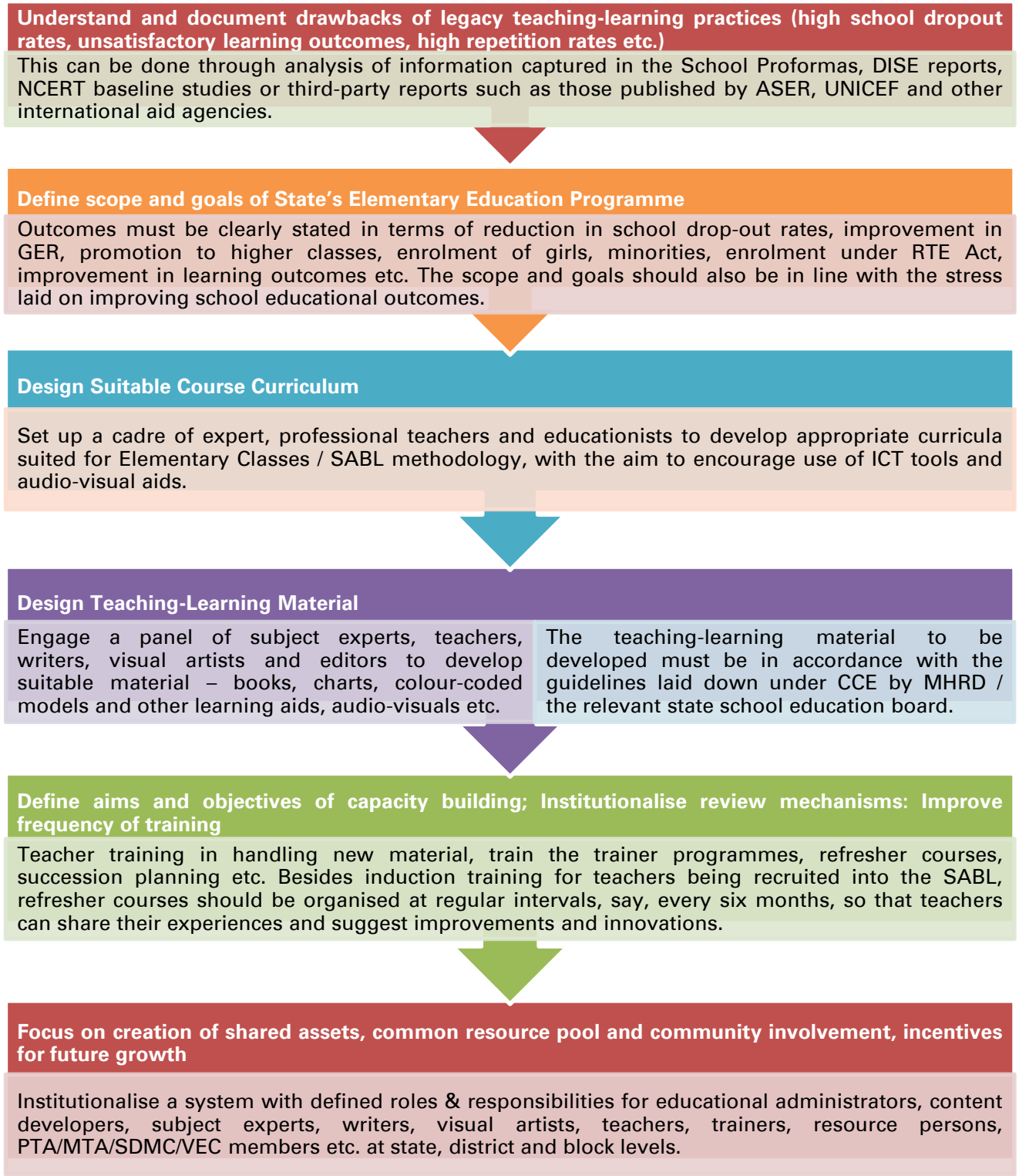


Figure 1.8 - Overview of proposed replication guidelines

2 – SCORE: e-Registration – An innovative model taking care of all stakeholders, Bihar

SCORE (**S**ystem for **Co**mputerised **Re**gistration) is an ICT solution incorporating all instruments under Acts for property registration in Bihar. It has deployed a self-sustainable operational model, under which hardware is rented only as needed, keeping costs in line with operations at all times. Today a person can approach the registration department with better understanding, and confidence in the efficiency and reliability of the process.

2.1 Initiative Objectives

- To computerise registration of documents in a timely manner, ensure authenticity of deeds pertaining to immovable property; marriage and divorce; birth and death; partnership business etc.
- To protect private individuals from faulty transactions and guarantee land owners security against loss of documents concerning immovable property.
- To reduce instances of corruption at Registration Offices and in the form of under-valuation of property to evade stamp duty, at the time of registration of sale/purchase of immovable property
- To implement a transparent, time-bound process for quick delivery of original deeds to the concerned individuals/parties.

2.2 Background: Rationale behind the Initiative

Prior to the implementation of SCORE e-Registration system in Bihar in 2005, the state was running a manual system of registration of property since the 18th century. This system was subjected to the whims of the Registrar and subordinate staff of the Registration Office, involved arbitrariness in fixing the 'rateable value' of land or property and thus provided ample scope for corruption and undervaluation of property. Moreover, deeds were to be mandatorily written or typed on stamp paper, of which the court-designated vendors often created an artificial shortage, in order to earn a premium via its black marketing. Deposit of stamp duty and registration fees was to be made in cash at the courts, which was also a source of nuisance and corruption for the common citizen. Finally, the whole process of manual registration led to long queues and delays, often forcing people to make multiple visits to the Registration Office. In sum, the old, manual process of registration of immovable property, birth, death, marriage etc. in the state of Bihar was a source of big nuisance for common citizens which led to the creation of the ICT solution, SCORE.

SCORE has been implemented in 38 district registrar and 84 sub-registrar offices of the state. The software used is able to capture details of the deed, identify and evaluate the minimum value rate (MVR) of property, check the correctness of stamp duty and registration fees. It also has features to capture photos of parties, identify fingerprints and print endorsements.

2.3 Key Factors leading to Initiative

Inspired by the computerised system of registration in Andhra Pradesh and other southern states, the Registration Department of Government of Bihar started taking initiatives to implement it in Bihar as well.

The objective of the Registration Act is to provide not only a guarantee of the genuineness of the instrument, but also a record from which a person who may desire to enter into dealings with respect to the property may be able to obtain information as to the title. Registration is mainly designed for the purpose of giving legitimacy to the deed.

The most important feature of the SCORE e-Registration system is that it provides safeguard against fabrication of documents of title to immovable property, a major source of litigation and violence in Bihar, and to check fraud, forgery, corruption and loss of revenue to the state government.

2.4 Project Initiation: When and Where?

In 2005-06 a team of departmental officers and officers of NIC Bihar launched SCORE e-Registration as a pilot project in the Patna Registrar Office.

2.5 Implementation Strategy Adopted

The SCORE project was inaugurated on 5th September, 2005 by the Commissioner-cum-Inspector General of Registration, Govt. of Bihar. From "Day One" manual registration was completely stopped. SCORE has now been replicated across all the 122 (38 district level and 84 sub-district level) registrar offices in Bihar.

With the introduction of SCORE in 2005, computerised registration replaced the manual procedure and now the entire process can be completed within 25-30 minutes.

The Registration Department, Govt. of Bihar experimented with two models for SCORE implementation. One was by BOOT (Build, Own, Operate, and Transfer) model and the other Hardware on Hire Basis (HOHB) model. The Pilot implementation of the project started keeping in view the RoI (Return on Investment) and efficacy of the chosen models - At Patna, the state capital, where the average daily load of deed registrations was around 80, BOOT was selected, while Muzaffarpur, an important district of Bihar, where the average load of deed registrations was 135, the HOHB model was selected. Both had their own pros and cons and both succeeded in a limited way, with expected teething problems.

After due analysis considering all the facts, it emerged that for better RoI and self-sustainability of the project, the state-wide implementation of SCORE will be more effective on the model of Hardware on Hire Basis (HOHB) as BOOT was relatively less cost effective. HOHB in terms of its productivity and acceptability was better suited to the vision and mission of the Department of Registration, Excise and Prohibition, Government of Bihar over 3 to 5 years.

The salient features of the SCORE e-Registration system are described below:

- Simplification of the registration process with the help of automated procedures resulting in delivery of original deeds in about 25 to 30 minutes
- Transparency and accountability of registered deeds
- To provide speedy, reliable and one-stop, non-stop disposal of deed registration
- Auto-valuation of property based on MVR
- Auto-calculation of stamp duty, addl. stamp duty (if any), registration fee and other subsidiary fees (if any)
- Photo and fingerprints capture of parties (Executants, Claimants) and identifier (Witnesses)
- Generation and printing of memo of presentation, all endorsements, receipt and final registration endorsement
- Stamp duty, registration fee may be directly deposited in treasury banks
- No more need to purchase stamp/stamp paper from treasury
- Did away with black marketing of stamps as well as use of fake stamps
- Scanning of original documents in the presence of parties
- Preservation and archival of registered deeds on electronic media like CD-ROMs

2.6 Challenges Faced

The manual system of registration of property that pre-dated the SCORE e-Registration system in Bihar owed its genesis to the British colonial administration of the nineteenth century. This manual system was not only inaccurate and time-consuming, but also encouraged forgery and corruption on a large scale.

A major hurdle came up when vested interests in Bihar filed three PILs/writ petitions challenging the implementation of the SCORE e-Registration project. Thankfully, the Honourable High Court at Patna dismissed these petitions, thus paving the way for a smooth roll-out.

Internal stakeholders of Dept. of Registration were also not convinced that a computerised system could completely replace the old, manual system in a state like Bihar.

Finally, the BOOT system of implementation itself posed operational and cost challenges, with the System Integrator, M/s ECIL Hyderabad expressing their inability to manage the system at Rs. 20/- per page of printout, deeming the volumes insufficient to meet cost of operations.

2.7 Outcomes Achieved

SCORE has completely eliminated manual handling of documents by the registration officer (RO) and at present boasts electronic registration of nearly 8-9 lac documents per year.

Major Benefits of SCORE e-Registration Scheme

The major benefits of the SCORE e-Registration Scheme are:

- Has replaced time-consuming manual system with standardised e-mechanism of registration
- Cost effective operations due to 'hardware on hire basis' (HOHB) model
- Digitally indexed and endorsed documents
- On-time delivery of documents to concerned parties
- Has eliminated illegal circulation of stamp papers
- Creation of Visual MVR (Minimum Valuation Register) using GIS maps with integration of spatial and non-spatial data related to MVR, land type and other attributes. This has streamlined revenue collection and controlled corruption within the Department of Registration, Excise and Prohibition, GoB.
- Establishment of a Data Centre to store land and property registration data from the year 1996 onwards.
- Improved efficiency and objectivity within the Department of Registration, Excise and Prohibition, GoB through increased transparency.
- Digitised registered property documents since 2006

2.8 Key Study Findings

2.8.1 Scheme Scope & Coverage, Enabling Policy Interventions (Impact, Utility)

The history of the system of registration in Bihar is as old as of the Presidency of Bengal. At present there are 122 registration offices located at different places of Bihar functioning under the Registration, Excise and Prohibition Department, GoB. Of these 38 offices are at district headquarter-level, headed by District Registrars and 84 offices at sub-district level, headed by District Sub-Registrars/Sub-Registrars, who discharge all the duties of the District Registrar except to hear appeals against their own orders. The administrative responsibilities of the Department of Registration, Excise and Prohibition Dept., GoB are Registration Act, 1908; Indian Stamp Act, 1899; Societies Registration Act 1860; Partnership Act, 1932; Special Marriage Act, 1954; Birth, Death and Marriage Registration Act, 1886; Bengal Mohammedan Marriage & Divorce Registration Act, 1876; Quazis Act, 1880; Parsi Marriage and Divorce Act, 1936, and Indian Christian Marriage Act, 1872.

2.8.2 Scheme Strategies, Monitoring and Review Mechanisms, Innovations & Reward Structure (User Satisfaction)

NIC has developed a third version of the data management software – SCORE VER 3, incorporating increased security features and computerised mapping, and including MVR values of properties across all districts, This has been done to prevent tampering of property records and manipulation of registration fees

payable by collusion between property owners/sellers, buyers, touts and petty officials.

Every property deed registered using the SCORE software solution bears a unique token number as a combination of running number and year. All registered deeds are allotted a running serial number and book wise deed number. The Registration Offices keep various registers, books and indexes for meeting the subsequent queries and legal contingencies. SCORE facilitates generation of all registers like daily as well as consolidated fee book, Index I, Index II, Index III, Index IV, Fingerprint Register, Day-wise Registered and Not-registered Deeds via Back Office Computerisation.

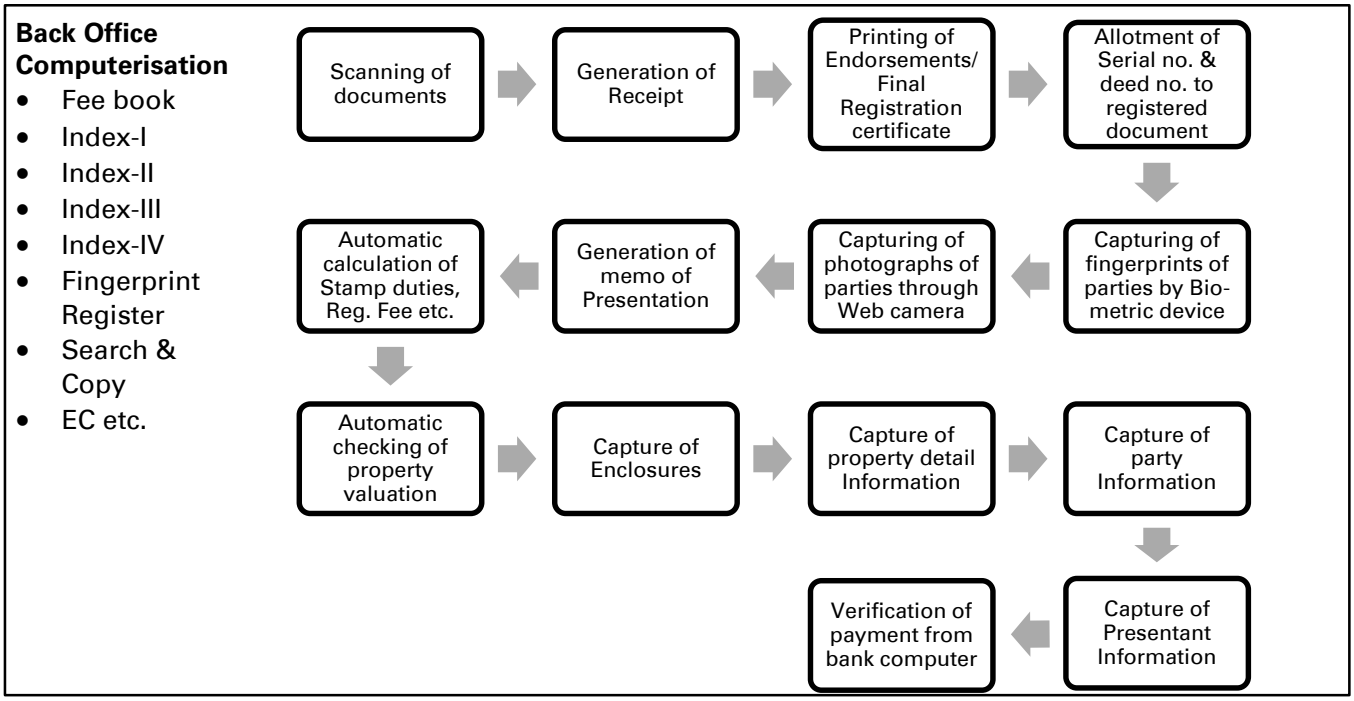


Figure 2.1 - SCORE e-Registration Process Flow

Source: Dept. of Registration, Excise and Prohibition, GoB

2.8.3 Capacity Building and IEC Campaigns (Utility and Sustainability)

NIC imparted two types of training to SCORE users - one on the Computer Awareness and the other on SCORE software package for the District Registrars, Sub-Registrars and staff. In order to implement this in 122 offices, a phase-wise approach was adopted. Young, interested, enthusiastic persons were identified from the four SCORE operational registration offices and given exhaustive training to play the role of Master Trainers for the other offices.

2.8.4 Financial Viability (Sustainability)

One of the big advantages of SCORE has been its cost effectiveness. The software has been the developed by National Informatics Centre (NIC), a central government organisation, at no cost. Hardware is hired, allowing for the supply of five computers, one printer, one webcam, and one scanner, at a renting cost ranging from Rs. 15,000 to Rs. 20,000 per month. Furthermore, revenues are generated through a charge of Rs. 25 per page of document scanned. Hence, there is no financial liability on the state and the generated revenue has made the model locally self-sustainable.

Another improvement brought about by SCORE is with regard to the MVR, a government enforced Minimum Value Rate on property that is determined on the basis of its location, use and quality of construction. This is now automatically computed and stored in the electronic database. Prior to the computerisation of MVR, landowners looking to sell property would deflate the market value to avoid having to pay higher taxes. Post-

implementation, SCORE has been able to check such unlawful practices to some extent, thus leading to better revenue realisation for GoB.

Another positive outcome has been in terms of realisation of revenues for the Govt. of Bihar from stamp duty over the years, as shown in the table below:

Table 2.1 - Stamp duty over the years

Financial Year	Stamp Duty Paid through Bank Challan (Rs. Crore)	Stamp Duty Paid through Stamp Paper (Rs. Crore)
2008-09	331.30	199.32
2009-10	516.60	328.83
2010-11	571.45	334.32

Source: Dept. of Registration, Excise and Prohibition, Govt. of Bihar

On the whole, the SCORE e-Registration System in Bihar is running successfully and being maintained by District SCORES (District Level Societies) under the chairmanship of the District Collector. A service charge of Rs. 25/- per page of scanned document is levied to meet the expenditures for running and maintaining the system. As a result, the SCORE e-Registration system in Bihar has not created any liability of Govt. of Bihar; rather it has created surplus revenue. The Dept. of Registration, GoB now plans to bring on permanent rolls approx. 370 front-line staff that are currently deployed in the 122 offices – 38 district offices and 84 sub-district offices.

2.8.5 Organisational Structure and Stakeholder Participation (Scalability and Sustainability)

The SCORE/Department of Registration, Excise and Prohibition, GoB team at Head Quarter and Field Office levels is as shown in the organisational charts below:

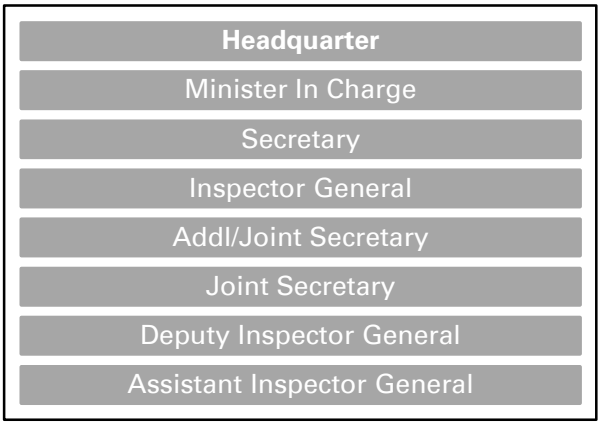


Figure 2.2 - Team Structure at Headquarter Level
Source: Dept. of Registration, Excise and Prohibition, Govt. of Bihar

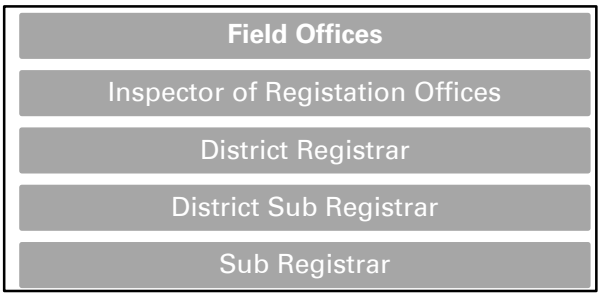


Figure 2.3 - Team Structure at Field Office Level
Source: Dept. of Registration, Excise and Prohibition, Govt. of Bihar

2.8.6 Technology Interventions (Scalability and Replicability)

Two major ICT innovations that have contributed to the high acceptance and success of the SCORE e-Registration Scheme in Bihar are:

1) **SCORE e-Registration software solution** is developed by NIC Bihar. SCORE is a user friendly software package designed on the Windows based client-server architecture. The database was developed on ORACLE8i and the front end application on D2K with security features like User ID, Password, along with privileges defined as per roles.

   The key features of SCORE are online capture of details of a Deed, Identifier, auto-valuation of the property based on the Minimum Value (MVR) criteria, auto-calculation of required stamp duty, additional stamp duty, registration and other fees, photo captures of parties, identifier, fingerprints capture of parties and identifier, generation and printing of all endorsements, receipt, memo of presentation and final registration endorsement in Hindi. Last but not the least,

scanning of the deed is done to mark the completion of registration process.

2) **Bhumi Jankari Services portal, http://bhumijankari.gov.in/BiharPortal/Home.aspx** allows people to avail various services related to property registration and information related to MVR, land deals, property ownership, transactions etc. in a transparent and easily accessible manner.

2.9 Shortfalls and Suggested Corrective Actions

Table 2.2 – Initiative shortfalls and suggested corrective actions

Weakness/Shortfall	Suggested Corrective Action
1) High Volume of Registrations in February & March: Due to anticipation of increase in registration and stamp duty rates.	GoB should declare a rebate on registration fees and stamp duty for those who register their property deeds early in the financial year, thus avoiding a last-minute rush at the Registration Offices. This will not only reduce unnecessary hardship to common citizens, but will also smoothen the volume of work for Bank and Registration Office staff. Further, early realisation of Stamp Duty and Registration Fees will help the GoB plan for faster and better implementation of development schemes in the state.
2) Exploitation of Poor, Illiterate People: Petty officials still try to harass poor, illiterate property owners by withholding their deeds or through misinformation.	Clear communication of process timelines, roles & responsibilities of officials. Strict 'No Entry' for touts and 'No Mobile Phone Use' during office/work timings to prevent collusion with unscrupulous persons. Penalties for delays and corrupt practices.
3) Poor Condition of Infrastructure: Common people face a lot of difficulty due to lack of cleanliness, basic amenities like drinking water, clean toilets and waiting area.	Being a department with a financial surplus, proper amenities should be provided in all offices, based on expected number of visitors per day. For example, banking sector customer service norms and 'token' system of queue management could be applied to all large registration offices.
4) Suspect Role of Deed Writers: Licenced deed writers often resort to unfair means to manipulate the system and earn commissions for undue favours.	Strict and regular monitoring of deed writers interactions with registry office staff. More effective IEC campaigns to increase the awareness about the system amongst the common people.
5) Bottleneck at Bank Branches Collecting Stamp Duty and Registration Fees: People who wish to have their property registered and need to pay stamp duty or registration fees often face a bottleneck at the designated State Bank of India branches.	Online payment or payment through PoS terminals/kiosks should be enabled to allow people to pay the requisite charges and fees smoothly.
6) Inadequate coordination between Dept of Registration and Banks: Property registration fees and stamp duty are to be paid at designated bank branches only within banking hours.	Dept. of Registration offices should be able to accept payment of fees directly by electronic means (PoS terminals etc.) or through online payment gateway.

Weakness/Shortfall	Suggested Corrective Action
7) Remote Registration of Property Deeds: The e-Registration process does not allow for remote registration of property deeds, as this was stopped years ago to prevent fraudulent registration.	Inter-district sharing of property registration databases to allow for remote registration of property deeds. To provide legal safeguard to this process, suitable changes in the applicable law and rules governing registration of immovable property must be duly passed in the central and state legislatures, as appropriate.

2.10 Indicative Factors for Identification of Target States

Rapid Urbanisation: Need to Introduce Transparency

When industrial activity in a state is undeveloped or contributes to a relatively smaller proportion of its GDP, then pressure on land for livelihood, shelter and other residential, commercial and economic activities is bound to be higher.

Rapid urbanisation and the rate of increase of building activities is a key factor responsible for rise in the number of property disputes both in state capitals and large commercial hubs, as well as smaller district headquarters. The graphic ahead, pertaining to a December 2011 news report from Patna illustrates the point in the case of Bihar:

The fastest rate of urbanisation has been observed for top three urban agglomerations in India, namely, Mumbai, Delhi and Kolkata. Urbanisation is taking place at a faster rate in India. As per the technical group report on population projections constituted by the National Commission on Population (May 2006), the urbanisation in India would be 38.8% by the year 2026. According to a survey by UN State of the World Population report in 2007, by 2030, 40.76% of country's population is expected to reside in urban areas. India will lead the world's urban population surge by 2050 as per the World Bank.

Figure 2.4 - December 2011 news report from Patna

Source: Media and National Crime Records Bureau

Table 2.3 - Growth of Urban Population in India, 1951-2011

Census Year	1951	1961	1971	1981	1991	2001	2011
All-India % of Urban Population	17.29	17.97	19.91	23.08	25.49	27.81	31.16

Source: Registrar General of India

According to the Ministry of Urban Development (MoUD), as per Census 2001 figures, among all the States and Union territories, the National Capital Territory of Delhi is most urbanised with 93 percent urban population followed by Union territory of Chandigarh (89.8 percent) and Pondicherry (66.6 percent).

Among the major States, Tamil Nadu is the most urbanised state with 43.9 percent of the population living in urban areas followed by Maharashtra (42.4 percent) and Gujarat (37.4 percent). The proportion of urban population is the lowest in Himachal Pradesh with 9.8% followed by Bihar with 10.5 percent, Assam (12.7 percent) and Orissa (14.9 percent).

Thus, states that have large concentrations of BPL population living in rapidly urbanizing areas, with corresponding increase in slum populations are good candidates for replication of a computerisation of property/land registration project.

Increasing Fragmentation in Property Ownership: Opportunity to Digitise Records, Increase Revenues

Another major issue that an ICT-enabled land and property registration system could address is the need to digitise old ownership & registration records, as growth in population, especially in states like Bihar and Uttar Pradesh has resulted in division of ancestral properties, with an attendant rise in cases of family disputes and litigation. Thus, besides introducing transparency, Registration of Property through a SCORE-type system in the names of legal heirs presents an opportunity to digitise and update age-old Nazul maps and property ownership records. More importantly, this can help to increase government revenues as larger family sizes typically lead to residents adding floors or rooms to existing/old structures.

Uttar Pradesh and Jharkhand are two states which have tried the SCORE e-Registration Bihar with local variations.

2.11 Implementation Approach

As discussed in the 'Outcomes Achieved' and 'Key Study Findings' sections, state/UT administrations that wish to provide speedy, transparent and efficient e-registration services for property deeds and other key documents (birth & death certificates, domicile certificates, marriage certificate etc.) can adapt the Bihar SCORE e-Registration solution to suit local conditions. Suitable Business Process Reengineering (BPR) and Computerisation/Web-enablement of the registration process are the key to implement an accessible, cost-effective and citizen-friendly e-registration system. The key "win-win" of such a solution is the creation of an expert cadre of e-registration and IT experts with increased flow of revenues to the state exchequer. The following sections provide a basis for selection of states for implementation of a computerised e-Registration solution and guidelines for replication of a 'model' practice.

Table 2.4 - Critical Success Factors for Replication of the Initiative

Factor	Strength/Benefit
Scheme, Scope & Coverage, Enabling Policy Interventions	1) **Wide Scope and Geographical Coverage** SCORE e-Registration Scheme enables registration of nearly 8-9 lac property deed documents every year through 38 district registration offices and 84 sub-district registration offices.
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	1) **Prevent tampering and fraud and issue of genuine deeds**: Every property deed registered using the SCORE software bears a unique token number as a combination of running number and year. Records are maintained in the form of Registers for easy retrieval and cross-checking in case of any legal challenges. The SCORE VER 3 software contains enhanced security features.

Factor	Strength/Benefit
Capacity Building and IEC Campaigns	**1) Training & Orientation**: NIC imparted two types of training to SCORE users. One on the Computer Awareness and the other on SCORE software package for the District Registrars, Sub-Registrars and staff. In order to implement this in 122 offices, a phase-wise approach was adopted. Young, interested, enthusiastic persons were identified from the four SCORE operational registration offices and given exhaustive training to play the role of Master Trainers for the other offices. **2) IEC Campaigns**: Local media – print and electronic, hoardings, posters, wall paintings etc. in registry offices announced the benefits for common citizens.
Financial Viability	**1) Increased Revenues for GoB:** Department of Registration, GoB is the only department which earns a surplus from the processing fees collected.
Organisational Structure and Stakeholder Participation	**1) Well Structured Team with Defined Roles:** Department of Registration, GoB has a well-defined structure of roles and responsibilities with officers posted at all the 122 offices throughout the state. This makes it easier for common people to get their property registration deed issued, without having to travel long distances.
Technology Interventions	**1) SCORE software** It is a user friendly software package designed on the Windows based client-server architecture with the database was developed on ORACLE8i and the front end application on D2K. NIC has now developed SCORE Ver 3.0 with enhanced security features like User ID, Password, along with privileges defined as per roles. The key features of SCORE are online capture of details of a Deed, Identifier, auto-valuation of the property based on the Minimum Value (MVR) criteria, auto-calculation of required stamp duty, additional stamp duty, registration and other fees, photo captures of parties, identifier, fingerprints capture of parties and identifier, generation and printing of all endorsements, receipt, memo of presentation and final registration endorsement in Hindi. Last but not the least, scanning of the deed is done to mark the completion of registration process. **2) Bhumi Jankari Services portal:** Both these ICT systems allow for quick, efficient, transparent and safe process to issue property registration deeds, checking of property registration/ownership status, monitoring of transactions, MVR etc. This allows the system to be accessed from any of the 122 registry offices in Bihar for ease of service delivery.

The following replication guidelines should be read along with the 'Suggested Corrective Actions' outlined in Section 2.9, in order to get a holistic perspective of the proposed 'model replication practice for e-registration' in a target state.

Salient Features of a Replication Model for e-Registration

Since SCORE, i.e., System for Computerised Registration was a new innovation and its implementation model, i.e. HOHB incorporates an affordable and user friendly ICT solution for registration of property, issue of deeds and electronic storage/retrieval of authenticated records, it can be easily replicated in any state across the country.

Major factors that resulted in the success of the project, which represent a step-wise approach to develop a 'model practice' for property registration are summed up below. These should

be read along with the notes on implementation strategy; outcomes achieved; scheme strengths, and weaknesses as well as suggested remedial action in the preceding sections.

Step 1: Design a Comprehensive Solution to address Needs of all Stakeholders

An important factor that contributed to the success of the project was that it took care of all stakeholders such as, staff, officers, deed writers, stamp vendors and the common citizens. Due to its transparent and efficient ICT-enabled functioning, the SCORE e-Registration system in Bihar helped to reduce unnecessary hardship to common citizens, who are now able to get copies of their deeds in approx. 30-40 minutes. It has also smoothened the work-flow for Registration Office staff, which does not have to maintain or search for old paper files. Further, increased realisation of Stamp Duty and Registration Fees helps the state government plan for faster and better implementation of development schemes in Bihar.

Thus, any other state that wishes to launch a similar scheme or improve an ongoing property registration scheme must give top priority to issues faced by beneficiaries such as ease of access, simple, transparent and well-publicised process, reasonable fees and time-bound delivery of property documents (registered deed). Similarly, due credence must be given to issues of the Registration Office staff, for example, adequate counters must be set up to handle high workload during rush hours/'peak season' and smooth coordination between Dept. of Registration and banks' IT systems and work schedules must be ensured ('Scroll Number' should be included in the banks' online module). Finally, deed writers must be adequately compensated upfront by way of a fee, so that they do not collude with property buyers/owners or petty officials to earn money by engaging in corrupt practices.

Step 2: Create a Special Purpose Vehicle to Oversee and Manage Scheme Operations

An implementing Society for each district and one at State level (BISCORE) were created and registered under Societies Registration Act, 1860. Responsibility of running and maintaining the system of computerised registration was assigned to the district society of each district. The functions of the State Level Society (SLS) are custody and updating of software and to provide guidelines, technical and other support to the district level societies.

This model of state- and district-level societies has worked reasonably in Bihar. So, states looking to replicate their own property registration system would do well to borrow the same from Bihar.

Step 3: Ensure Legal Sanctity for Property e-Registration

A very important factor that contributed to the success of the SCORE e-Registration in Bihar project was that Patna High Court dismissed two writ petitions filed by vested interests (builders, 'land sharks' etc.). In the first order the Honourable High Court dismissed a PIL which had sought to stop the roll-out of SCORE e-Registration system. Thus, in the eyes of citizens, SCORE e-Registration was viewed as a genuine and legally sound system. Changes in Stamp Duty rules further validated the authenticity and validity of property deeds issued on plain paper.

Thus, states wishing to roll out a Property e-Registration Scheme must ensure they have amended their Stamp Duty, Property Ownership and Registration rules suitably to permit printing of deeds on plain paper, and that the entire process is 'good' in the eyes of law.

Demand for Remote-location Access of e-Registration Services: While this is a 'latent need' and a demand from citizens in today's world, inter-connected via broadband-enabled Internet access, it is a feature that is currently not permitted by law. In fact, it was abolished as a practice many years ago. While the technology to enable secure, authenticated remote access is available, it requires political will and appropriate changes in the relevant laws and rules need to be passed by the concerned legislative body(ies) to provide legal sanctity to 'remote e-registration'.

Step 4: Role of Key Individuals, Dedicated Cadre of Expert Officers

Shri Anil Kumar, IAS, Secretary, Dept. of Registration, GoB played a crucial role in success of the project. He had the challenge of not only standing up to the queries and demands of his senior officers, but also facing his peers who, to begin with, were up in arms against the idea of computerisation. He, along with his 2-3 trusted colleagues gradually motivated all registration officers to see virtue in the project.

Thus, any state that wishes to replicate the SCORE e-Registration in Bihar model should create a core team of honest, dedicated officers who would be willing to take ownership and drive the project with a long term vision.

Step 5: ICT Infrastructure and Connectivity for Increased Accessibility

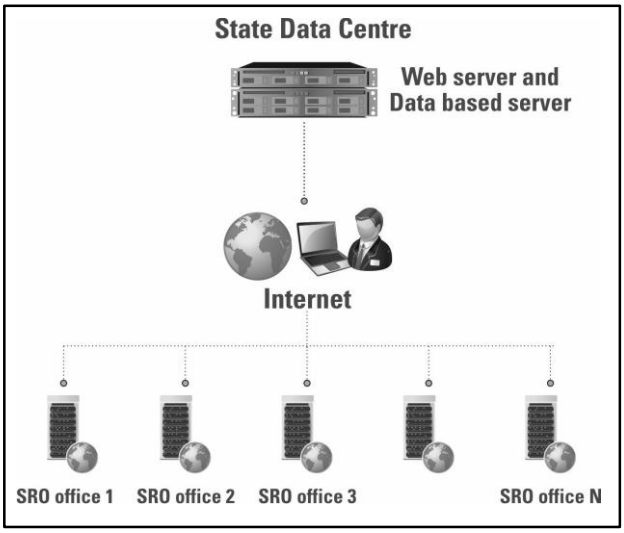


Figure – 2.5 – ICT Infrastructure
Source: NIC

Other states looking to replicate the Bihar model must ensure availability of IT infrastructure such as PCs, scanners, web cameras, printers etc. along with Internet connectivity and adequate power back-up in the SROs. This should be supported by adequate back-end computerisation of Record Rooms to ensure efficiency in electronic storage and retrieval of property registration records. Storage and archival can be efficiently managed at the state data centre (SDC) via secure, high-speed data links to SROs over the state wide area network (SWAN).

Step 6: Customer Service & Transparency Initiatives

In Bihar, public assistance systems like *"May I help you"* booths and Information Kiosks helped answer the queries of citizens who approached the registration office for obtaining/registering title deeds for their properties.

States who wish to replicate the SCORE e-Registration in Bihar model must provide adequate orientation training to front-line SRO staff, such that target beneficiaries (property owners/sellers/buyers) receive prompt service.

Adequate counters must be set up to handle high workload during 'rush hour'/'peak season' for this purpose. Deed Writers must be compensated adequately so they do not collude with petty officials & property owners/sellers/buyers to make money through corrupt and unfair practices.

Step 7: Implementation in Mission Mode - Linking Property Registration with Land Records under NLRMP

Success of the programme in Bihar can be directly attributed to its implementation in mission mode. Going forward, there is increasing realisation among administrations in Bihar and other states that the property e-registration and land records registration solutions must be integrated closely to provide a holistic, view to administrators, planners and policymakers.This involves two goals: 1) Computerisation of land records, 2) Inter-linking of two systems (e-Registration and NLRMP).

To achieve the first goal, aerial surveys are being used to generate accurate local-level maps of the state. The process started in 2013 and is expected to complete by 2015. This is necessary due to the small size of plots/land holdings in Bihar. Prior to aerial survey of an area, public announcements are made in villages to keep the fields clear of crops, smoke etc. The aerial survey is also being used to draw contour lines on local-level maps to

help the administration implement better flood control.

The **National Land Records Modernisation Programme (NLRMP)** has already been implemented in 17 states (as of August 2013) – Andhra Pradesh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Odisha, Punjab, Rajasthan, Uttar Pradesh, Uttarakhand and West Bengal. It is 'under implementation' in six states – Assam, Bihar, Chhattisgarh, Madhya Pradesh, Maharashtra and Manipur. Integration of the property registration scheme has been already done with NLRMP in six states so far. The prescribed guidelines for the **integration process** are listed out below:

- The Land Records database must be updated immediately after executing a Property Registration deed.
- Pre-requisites for carrying out the integration process:
  - Mapping of the codes used for location consisting of state code, district code, tehsil code, village code will result in same codification for location.
  - Identification of plots should be based on survey number/plot number/khasra number along with hissa number, with same format across the state
  - Same unit of area extents must be followed in both the property registration and land records processes
  - Nature of classification of transactions such as sale, gift, lease etc. should be the same in both the process of registration and mutation
  - Both the systems should use the same fonts and storage formats for data/electronic records of ownership (owner names, photos, property photos, signatures, thumb impressions etc.)
- Standardisation of valuation of land and other property

To implement the above integration process effectively, states should appoint a State Level Monitoring Committee (SLMC), headed jointly by the Secretary, Dept. of Registration and the Secretary, Finance, with the Collectors/District Magistrates as ex-officio members. The state IG of Registration and Registrars of each district must assist the SLMC in monitoring the performance of the scheme on a monthly basis and review of objectives vis-à-vis state revenue collection targets.

Step 8: Scheme Monitoring & Ownership by Top-level Officials

The Department of Registration, GoB had full time, senior IAS officers as Secretary and IG Registration who provided uninterrupted and dedicated leadership to make the project successful. The Head of Department and senior officials regularly monitored and gave their inputs and support to frontline staff to iron out any issues faced during the project roll-out.

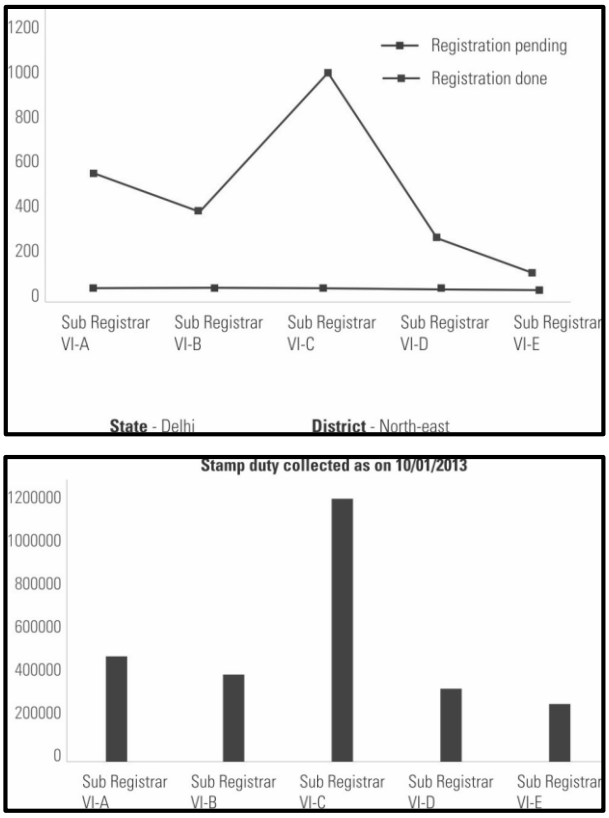


Figure 2.6 - Typical Property e-Registration Dashboard (Monitoring of Transactions)
Source: NIC

Everyone at the highest level right from the Chief Secretary, Development Commissioner to Finance Commissioner, senior officials of Bihar State NIC and managers of State Bank of India/other nationalised banks extended their full cooperation in implementation of the project, which contributed in great measure to its smooth roll-out across Bihar.

The team spirit and feeling of pride among the departmental officers inculcated by the departmental leadership went a long way in making the project successful.

This establishment of a shared goal and a strong culture of execution is one of the most critical success factors in implementation of a key revenue-generating scheme such as property registration and should be imbibed top-down in a state going in for replication of a similar programme.

Key Processes and Indicative Timelines

SCORE implementation was in Pilot Phase from September 2005 onwards (BOOT model, by ECIL) and December 2005 onwards (HOHB model, by Dept. of Registration, Bihar), up to February 2006 in Patna and Muzaffarpur districts, respectively (approx. 6 months/approx. 4 months). BOT implementations used the SCORE Ver 1.0 software developed by Bihar State NIC. Thereafter, the project was rolled out across full state by end of May 2006, a record time of 3 months, under the HOHB model (98% revenues, 2% expenditure; approved by GoB in February 2006).

At the time of implementation under HOHB model, 11 agencies were identified and their staff trained by NIC Patna for 3-4 days per batch. For the first 3-4 months of roll-out, a temporary call centre was set up at NIC Bihar HQ at Patna for solving the problems of operators.

NIC development time-frame for SCORE Ver 1.0 was 6 months. States of Uttar Pradesh, West Bengal and Jharkhand expressed interest in the SCORE software and Bihar State NIC was OK to share the software kernel/codes with these states for their customisation and own use.

These timelines are indicative timelines based on interactions with the stakeholders who were involved in the initiative and secondary research; the actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city. The indicative timeline may also vary depending on political and administrative will of policy makers and implementers.

Table 2.5 – Indicative Timelines

S. No.	Key Phase/Implementation Step	Indicative Timeline
1.	Pilot in 2-3 districts	4 to 5 months
2.	Recruitment of Computer Operators, Training of Dept. of Registration officers and staff on e-registration modules, Full roll-out across state	3 to 6 months

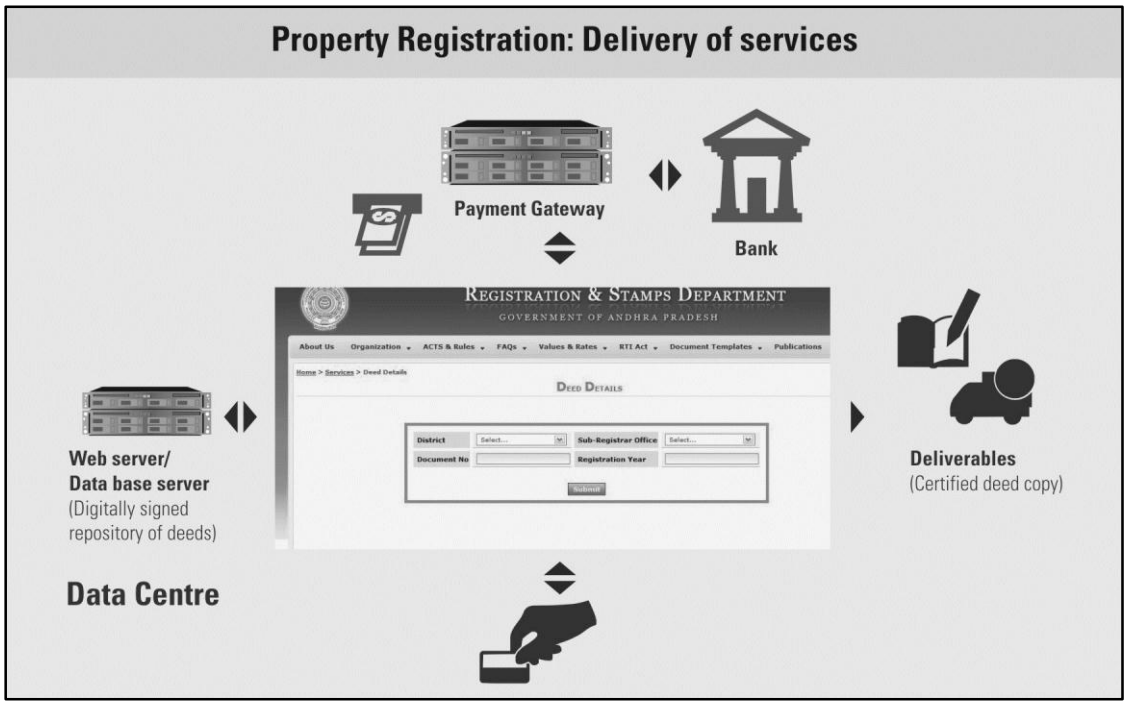


Figure 2.7 - IT Process: Property e-Registration in Bihar and Other States

Source: NIC

'As-is'/Model Roles & Process: Property e-Registration in Bihar and Other States

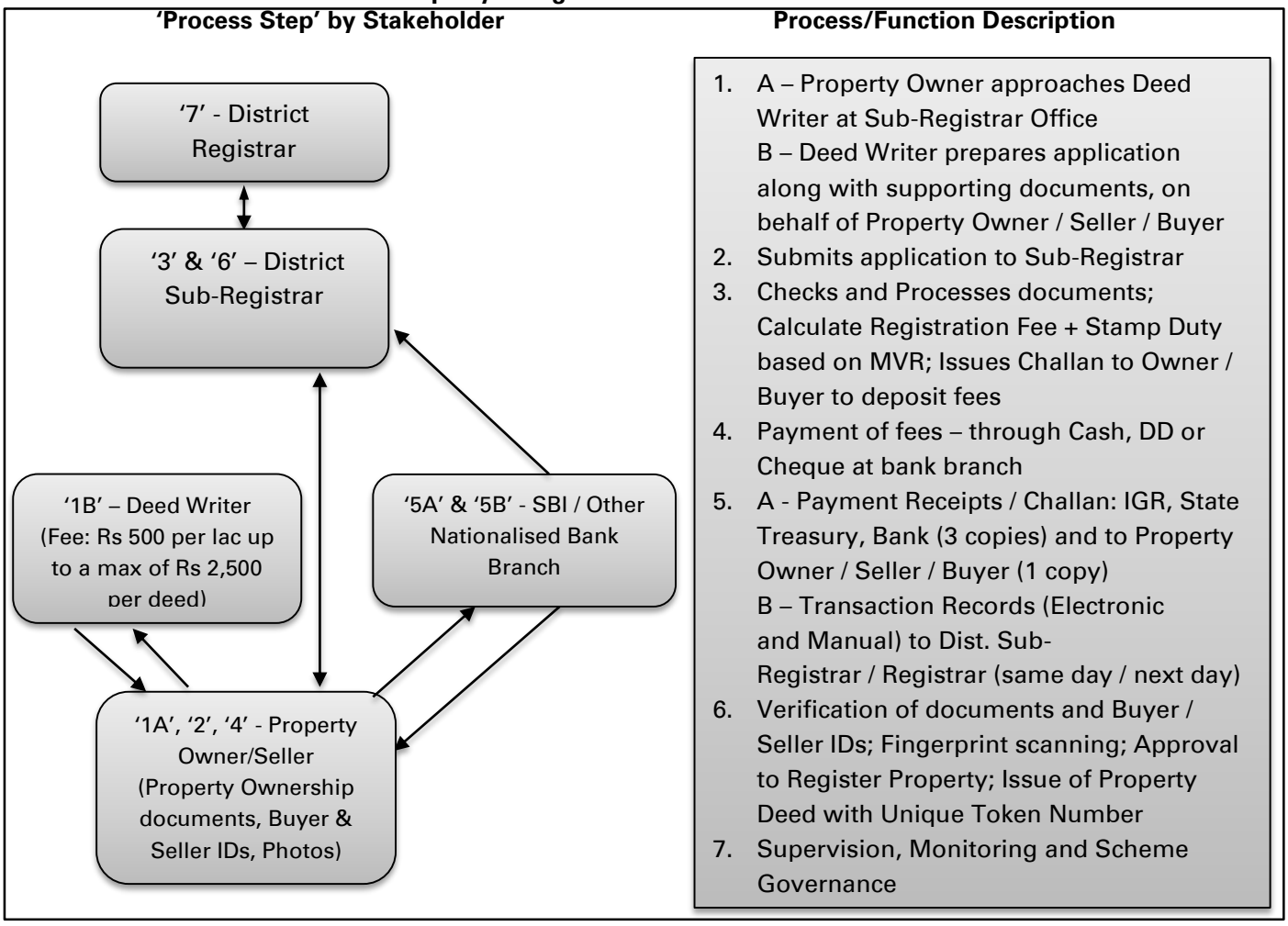


Figure 2.8 - 'As-is'/Model Roles & Process

Case Study: Best Practices in e-Registration from KAVERI Karnataka

- **Name of Project**: KAVERI (Karnataka Valuation and e-Registration)
- **Nodal Government Organisation**: Department of Stamps and Registration, Govt. of Karnataka
- **Solution Design & Implementation Agency**: C-DAC
- **Mode of Project Implementation Adopted**: BOT (Build-Operate-Transfer)

The Department of Stamps & Registration is the third highest revenue generating department for the Government of Karnataka with a revenue collection of Rs. 3,795.26 crore for 2010-2011 as against the revenue target of Rs.3,700 crore. Achievement = 102.56%. Documents Registered = 12.02 lac. Sanctioned staff strength of the department including officers and staff is 1,634.The department has regular, large number of interaction with citizens.

Computerisation of Department of Stamps & Registration, Govt. of Karnataka
All the 235 Sub-Registrar offices and 33 District Registrar offices in the state have been computerised since 2003-04.

KAVERI Software Existing Modules

- Registration Module
- Valuation Module
- Reports Module
- Vendor Management System (VMS)
- Utilities Module
- Data Transmission Module
- Scan-Archival Module
- Website
- Societies, Firms and Marriage Registration Module

KAVERI Business Model
The KAVERI software is developed and maintained by C-DAC Pune on PPP model and implemented on Build-Operate-Transfer (BOT) basis. The BOT contract was executed for a period of five years and M/s ECIL and CMS Computers Ltd. were appointed BOT partners. They are paid Rs. 16/- per page at Bangalore and Rs. 25/- per page in other places.

Thus, other states with large cities should also look to fix a differential pricing in metros/mini-metros versus smaller towns and rural areas for printing charges of title deeds.

Limitations in the old KAVERI Software

- Decentralised, standalone application
- Obsolete technology
- Lack of centralisation of data
- Lack of centralisation of MIS reports
- Lack of validation of records
- Lack of queuing mechanism
- Lack of transparency in presentation & scrutiny of ducts
- Lack of authorisation and check in the system
- Inadequate market value estimation module
- Tedious and erroneous data-entry process
- Cumbersome retrieval of records and reporting
- Lack of alternate channel for service delivery
- Lack of adequate mechanism for better citizen awareness
- Lack of accounting & grievance redressal module

Key Features of the new KAVERI Software

- To overcome the limitations of the old KAVERI Software
- To provide for new web based services
- To facilitate interoperability with other applications
- To augment new technology
- To provide services with B-1, K-1 and Nemmadi Kendras

Table 2.6 - Typical Timelines & Personnel Requirements: Implementing e-Registration Process in a Large State

S. No.	Activity	Personnel Required	Timeline in Months													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	System Requirements Specifications (SRS) preparation	3	■													
2	System Design Document (SDD) preparation	7		■												
3	Application Software development	11			■	■	■	■								
4	Software testing	7					■	■								
5	Deployment at Pilot Office (State HQ) and fine-tuning	7						■	■							
6	State-wide deployment of full system on BOT basis	14								■						
7	Software maintenance for six months	5									■	■	■	■	■	■

Source: Department of Stamps and Registrations, Govt. of Karnataka

Salient Features of the new KAVERI Application

- Issue of Caste Certificates (CCs), Encumbrance Certificates (ECs), Marriage Certificates (MCs) etc., through web portal, B-1, K-1, Nemmadi Kendras etc., to the general public. Reduce average document registration time from 30 to 10 minutes.
- General public can access information on registration of Properties, Marriages, e-stamps etc.
- Public grievance redressal through the web.
- Facilitates electronic exchange of information among related departments.
- Control misuse or leakage of government revenue.
- Clear role definition of duties for Sub Registrars (SRs) and officials in the registration process.
- Allotment of time slots on-line for registration.
- Capture and scrutiny of pre-registration information.
- System generated challan for remittance and reconciliation.
- Facilitate barrier-free registration of documents.
- Interoperability with other applications.
- **GIS Enablement**: GIS is useful in viewing the location of the property and assessment of the market value.

Other Initiatives under KAVERI

- Govt. of Karnataka approved a proposal to scan and microfilm legacy data prior to 2003-04.
- Govt. of Karnataka introduced e-stamping system vide G.O. dated 16-12-2009.
- Dept. of Stamps and Registrations signed an MoU with SHCIL on 25-01-2010 whereby SHCIL signed MoUs with Dept. of Posts, GoI; Syndicate Bank; Corporation Bank; Indian Bank; Souharda Co-operative Federation appointing them as ACC
- A proposal to establish a Project Management Unit (PMU) for better maintenance and supervision of the computerisation projects was submitted to Government of Karnataka
- Data from all SR offices up to March 2010 was collected in a USB/portable HDD and stored in the State Data Centre (SDC)
- KAVERI was integrated with Bhoomi for validation of records and fetching data to register agricultural lands.

Case Study: Best Practices in e-Registration from CORD West Bengal

- **Name of Project**: Computerisation of Registration of Documents (CORD)
- **Nodal Government Organisation**: West Bengal Directorate of Registration and Stamp Revenue, Directorate of Registration and Stamp Revenue, Govt. of West Bengal
- **Solution Design & Implementation Agency**: National Informatics Centre (NIC) developed the CORD software and is providing support
- **Mode of Project Implementation Adopted**: Under PPP 3 partners (WTL, CMC & CMS)

The Department of Stamps & Registration is the second highest revenue earning department of Government of West Bengal.

Computerisation of Directorate of Registration Stamp Revenue, Govt. of West Bengal
The Department of Stamps & Registration is Second highest revenue earning department of West Bengal. All the 240 Registration Offices in the state have been computerised.

CORD Business Model
The CORD software is developed and supported by NIC, and maintained by three partners (WTL, CMC & CMS) in PPP mode.

Salient Features of CORD Application

- The purpose of e-stamping is to provide a hassle free, prompt, secured way of paying stamp duty & fees to Government.
- The steps of online payment of Stamp Duty (e-Stamping) and Registration Fee, as envisaged, are the following:
  a) Registrant will fill an e-Requisition form containing the property to be transacted and Transferor and Transferee details of the proposed transaction using the web-site of the Directorate of Registration and Stamp Revenue, Government of West Bengal (https://www.wbregistration.gov.in) from anywhere, anytime
  b) System will automatically generate e-assessment slip informing required Stamp Duty and Registration Fee payable for Registration of deed. Registrant can also fill printed Requisition form and submit it at Registration office and get assessment slip
  c) Registrant will pay Stamp Duty and Registration Fee online using Net banking facility using Government Revenue Receipt Portal System (GRIPS) website https://wbfin.wb.nic.in/GRIPS/.
  d) After payment of Stamp Duty and Registration Fee, the registrant needs to present the deed for Registration.
  e) Registered Deed is delivered to the party.

Online Payment of Stamp Duty and Registration Fees

- At present online payment of Stamp Duty and Registration Fees can be made if Stamp Duty payable is more than Rs. 5,000 and it is compulsory if Stamp Duty payable is 5 lac or more.
- Online payment of Stamp duty can be made using the website https://wbfin.wb.nic.in/GRIPS/
- **GRIPS or Government Revenue Portal System**: This is the web-portal for online payment of all tax and non-tax revenues and the amount is instantaneously transferred to the govt. account with Reserve Bank of India, under relevant Head of Account.
- Parties can make payment through GRIPS in both online and offline modes.

Other Initiatives

BHUCHITRA (Land Records)

- Implemented at all Blocks (341 nos.) since 2000
- Digitised Record legalised in 2000, first state in the country to do so.

Services to Citizens (G2C)

- Certified Copy of ROR
- Plot Information
- 'Hal-Sabek' plot information copy
- Mutation & other record correction
- ROR with maps of owner's plot showing dimensions along with neighbouring plot

- Government has approved the proposal to scan and microfilm the legacy data prior to 2003-04.

Case Study: Best Practices in e-Registration (e-dhaRani) Odisha

The Department of Revenue and Disaster Management, Govt. of Odisha appreciated the importance of e-Governance and has undertaken e-dhaRani, a comprehensive project of computerisation of all 182 Registration offices across the state. A significant capacity in terms of physical and technology infrastructure has therefore been built to implement e-dhaRani in a competent manner, with a holistic perspective and with speed. e-dhaRani was launched on 4th January 2010.

Salient Features

- Benchmark Valuation configuration of more than 5 crore plots and automated property valuation.
- Capturing of Digital Photo and Biometric Fingerprints of parties (executants & claimants) and Identifier
- Maintenance of all records in integrated digital form in a central repository – First time in the Country
- SMS intimation
- Capacity Building of Govt. Employees (training on e-dhaRani solution)
- Digitisation of Legacy Records (Registered Deeds) of the previous 14 years.
- STQC Certification for Security.
- Issuance of online Certified Copy of registered documents & Encumbrance Certificates.
- Automated Transmission of Form No- 3 from DSR/SR to concerned Tehsil office for initiation of Mutation cases.

Important Features of e-dhaRani Application Software

- Centralised and Web-based application software encompassing all 64 kinds of deeds.
- All types of deed registration facility as per the Registration Act and Rules.
- Automatic Valuation through Benchmark Valuation Configuration.
- Integration with Land Records.
- Biometric-based authentication for login.
- Capturing Biometric/Capturing photograph & matching thereafter.
- Data Archival in compressed format.
- Integration of Deed with Agreement and Power of Attorney.
- Important Checks like SC/ST Land Sale, under valuation, workflow management etc.
- Generation of Various online queries and reports.
- Issue of Encumbrance Certificate (EC) and Clearance Certificate (CC).

Key Lessons Learnt from IT Implementation in States' Property e-Registration Projects

In a scheme such as SCORE e-Registration in Bihar, currently, evidences during presentation of parties and witness are captured electronically, e.g., digital photos using digital cameras, and fingerprints using thumb readers.

Introducing Video Conferencing, with remote capturing of evidences, i.e., iris, thumb impression will help NRIs and disabled persons to avail the services of Property Registration from the comfort of their homes, without the need to travel long distances.

Other ICT innovations can be used to improve service delivery to citizens. For example, a queue management system at the Registrar's Office, an SMS alert system to provide updates on progress of the property e-registration process, and provision to pay the Stamp Duty and Registration Fee via online payment gateway.

Policy level interventions such as compulsory linking of property registration deeds with land records (via the NLRMP), passage of the time-bound delivery of services act by states will also help to improve the quality of experience for the common citizen.

Proposed Replication Guidelines Overview for Development and Deployment of an e-Registration Solution

Figure 2.9 – Overview of proposed replication guidelines

3 – Improved Health and Sanitation Practices through Convergence of Administration, Community and Gram Panchayats in District Surguja, Chhattisgarh

3.1 Initiative Objectives

The objective of this initiative was to develop a model of convergence where more than one line department worked together with the Panchayat to improve conditions of health and wellbeing.

3.2 Background: Rationale behind the Initiative

Surguja district is dominated by tribal population and is covered under the fifth schedule of the constitution. The district has low literacy, and adverse health indicators. Low level of community knowledge, practice of open defecation and use of water from unsafe sources add to poor health of the people. The district faces extreme poverty, poor access and unavailability of health, sanitation and other welfare programmes.

Poor health condition has been a visible feature of the district. People suffer due to frequently occurring malaria and water borne diseases such as diarrhoea and typhoid. Frequently occurring diseases often force people to spend a lot on health care. Public health system and other agencies are most of the time over stretched to prevent the adverse health outcomes. The root causes of the poor health conditions are imbedded in improper management of water sources, practice of open defecation, and management of drinking water and personal hygiene.

In this backdrop the district administration analysed the situation and realised that there is a need to build synergetic working among community, civil society, PRIs and administration to collectively focus on common goals. It was realised that beginning can be made through selecting a programme which could be linked with other aspects of life. The issue of sanitation was one among them. Thus Total Sanitation Campaign (TSC) programme was selected to demonstrate a model of convergence to improve health and sanitation of the people of the district.

3.3 Key Factors leading to Initiative

Following factors led to the initiate to improve health and sanitation through convergence.

- Poor health conditions - frequently occurring vector borne and water borne diseases. Epidemic of diarrhoea and malaria during monsoon.
- Over-stretched health care services
- Low literacy and high poverty level and high out of pocket expenditure to get treatment of diseases.
- Many agencies work in fragmented approach to improve health, sanitation and education. No example of coordinated working to address the root cause of poor health.
- Various development schemes such at Total Sanitation Campaign, Sarva Shiksha Abhiyan, ICDS public distribution etc. were being implemented.
- The available resources with the implementing agencies were sufficient only to implement their own programmes. There was lack of adequate resources to plan an initiative which could improve health and well-being of the people on a massive, noticeable scale.

3.4 Project Initiation: When and Where?

The scheme of Improved Health and Sanitation Practices was initiated in May, 2007 by Dr. Rohit Yadav, District Magistrate, Surguja, and Chhattisgarh. Dr. Yadav was instrumental in realising the poor conditions of personal and public hygiene that prevailed in Surguja, pollution of water sources and the resulting high incidence of diarrhoea and other water-borne diseases. Dr. Yadav decided to focus on "improvement of health and sanitation conditions" on a massive scale to bring about a noticeable improvement in the state of public health in his district. He decided to do this through convergence of village Panchayats, NGOs and community members. Today, the scheme continues to aim at improving public health conditions by improving sanitation and generating community awareness on hygiene practices.

Profile of implementer:
District Administration of Surguja led the implementation of initiative in convergence with following agencies/ departments:

- Public Health Engineering Dept.
- Rural Development Dept.
- Public Distribution System
- Women and Child Development Dept.
- Tribal Welfare Dept.
- Forest Dept.
- Panchayat members, MLAs, MPs
- NGOs/CSOs

Year and period when this initiative was started:
The Total Sanitation Campaign was initiated in 2006 but after 2007 the district administration conceptualised and implemented the scheme with new strategy of involving all relevant government departments, civil society and panchayats to optimise the resources to improve health of the people.

This resulted in convergence of 'Health & Sanitation' Initiative around Public Health Engineering Department.

The scheme was initially implemented in 256 Panchayats with a rational representation of geographical terrain, and all blocks.

3.5 Implementation Strategy Adopted

The strategies that were adopted for effective implementation are as follows:

a) **Rationalised selection of intervention area (panchayats)**

Initially the scheme was implemented in all gram panchayats of three blocks and later in selected 83 panchayats of 16 blocks of the district. The selected panchayats have a rational representation of all blocks that can have a demonstration effect on rest of the panchayats of the district.

b) **Assessment and optimizing the resources**

The resources available for TSC and other associated programmes were assessed. District administration pooled in and optimised the resources (financial and human) from government departments, NGOs and Panchayats to ensure that the scheme do not suffer due to lack of resources.

c) **Selection of a key sector which can have a multiplier effect on other sectors and lead to improved health indicators**

Total Sanitation Campaign which was a flagship scheme of Government of India was selected as it had potential to prevent high burden of disease affecting large population.

d) **Ensuring close coordination and linkages among government departments, civil society, panchayats and community**

Coordination among all government departments' panchayats and community was ensured so that each department, especially community owns of the programme. The linkages with the department/ agency were worked out and each of the stakeholders involved in the programme was involved in a meaningful way.

e) **Initiating dialogues with private providers for bridging supply gaps**

Recognizing supply gaps, the district administration negotiated with private providers to get the supplies of required materials (cement, bricks etc.) at reasonable prices.

f) **Awareness Generation**

Using various medium of awareness generation community was made aware of the importance of sanitation and hygiene that helped changing people's attitudes for using the toilets. Major IEC activities used were – wall paintings, rallies, using school children and scouts and guides, household level one to one interaction and mass media.

g) **Community monitoring and peer pressure**

Formation of community based groups *(Toka-Taki Samitis)*, regular visits of district and block officials, intensive engagement of village level workers of different departments and employing both motivational and punitive actions encouraged adoption of hygienic practices by the people.

3.6 Challenges Faced

Following challenges were faced while implementing the scheme:

- Lack of availability of trained masons to complete toilet construction as per the parameters and set timelines: To overcome this challenge, training of masons was conducted with the help of expert resource persons.
- Lack of availability of construction material at reasonable prices. As demand grew for the toilet construction, the supply of required quantity of bricks and other construction material appeared to fall short. A dialogue with the market and negotiation with suppliers helped getting the material at reasonable prices.
- Need to bring about behavioural changes for use of toilet amongst members of indigenous peoples (tribal communities) who were previously unexposed to social development, required rigorous efforts. At many places, toilets were constructed but due to prevailing practices people were not ready to use the same. Using multipronged IEC strategies, the community was made aware of the harms of open defecation and benefits of using toilets.

3.7 Outcomes Achieved

The initiative of Improved Health and Sanitation through Convergence has not only helped in providing toilets to the people, schools and Anganwadi Centres but also has resulted in following several other benefits:

a) **Improved Sanitation:** Availability and use of toilets in the individual households, schools and Anganwadi Centres has increased.

b) **Improved awareness and hygiene practices:** An important achievement of the project has been in bringing about greater awareness and change in individual and community behaviour, and practices towards hand washing and maintaining personal hygiene. People now wash hands at critical times (before eating, after defecation, washing the child stools) with soap or ash. Habits of regular nail cutting, bathing and keeping children clean has been improved.

c) **Improvement in health:** There has been a reduction in incidence of water borne and communicable diseases like diarrhoea and malaria in Surguja district, as per feedback received from local officials and residents.

d) **Improved nutritional status and better functioning of Anganwadi centres:** There observed to be a reduction in malnutrition cases. Enrolment of pregnant women, eligible children and lactating mothers has increased. There has been improvement in regularity of mid-day meal scheme.

e) **Storage of safe drinking water:** Use and storage of safe drinking water has improved. People now use water from hand pump whereas before the initiative they used to get the water form open water sources like streams, ponds and wells. People store water in covered vessel and use a vessel with long handle to take out the water from the pot.

f) **Community Participation:** Community participation in gram sabha meetings has increased. Convergence with panchayats and rural development department led to increase the awareness among people about the welfare schemes and functioning of PRIs. Participation of people has increased in the meetings of gram sabha. They raise issues related to maintenance of hand pumps, toilets, employment and health.

3.8 Key Study Findings

3.8.1 Scheme Scope & Coverage, Enabling Policy Interventions (Impact, Desired Outcomes)

Coverage: In the beginning in the year 2008 a total of 256 Gram Panchayats were covered with 3 blocks being completely saturated and a few Gram Panchayats (2-9) were taken from the other 16 blocks in order to both introduce the concept as well as to prepare the concerned officials and functionaries for large work in the subsequent years. Now the scheme is being implemented in all 1090 Gram Panchayats of Surguja district.

Major focus of the programme has been to construct and promote use of toilets which is expected to reduce frequently occurring communicable diseases. Since the programme was implemented in convergence of various government departments, Civil Society organisations, panchayats and the community, the efforts resulted in improvement in other areas, such as health, nutrition, drinking water, education and improved functioning of panchayats and other government departments.

Programme Impact

Improvement in Health

Focus Group Discussions with the people reflect that prevalence of diseases such as diarrhoea and malaria has reduced. As per CMHO now there has been reduction in the occurrence of these diseases.

Improvement in nutrition

After implementation of the initiative there has been reduction in malnutrition cases. Grade 3 children in 2008 reduced from 552 to 404 and grade 4 cases reduced from 16 to 4 (A Study conducted by UNICEF, 2008). The functioning of Anganwadi centres and enrolment of pregnant lactating mothers and women and children has also increased.

Availability of Sanitation facilities

Availability of individual household toilets, school toilets and Anganwadi toilets has substantially increased. The survey conducted for UNICEF in 2008 reflect that in the programme area large percentage of (98%) households, 97% schools and 91% Anganwadi centres have toilets (as per a study conducted by UNICEF in 2008).

Figure 3.1 - Pucca Toilet with Overhead Water Tank

Figure 3.2 - Homestead Toilet in Village, Dist. Surguja

Availability and use of safe drinking water

The interview and focus group discussions with the community and other stakeholders reflect that as a result of the initiative awareness among the people has increased substantially. Before 2007 people used to drink water from wells and streams which used to be contaminated, whereas now hand pumps have been installed and people use water from these hand pumps.

Over 90% households store water in covered vessels.

Figure 3.3 - Improved Access to Clean Drinking Water in District Surguja provided by a local NGO

Improved practices of using toilets maintaining personal hygiene and sanitation

Awareness generation has resulted in improved practices of hand washing with soap at critical times such as after defecation, before eating and washing child's faeces. People are aware that hygiene practices prevent from diseases. More than 80% people cut their nails either weekly or fortnightly. Practice of regular bath and bearing clean clothes have also been improved in the tribal population of the district.

Increased Community participation in gram sabha meetings

The convergence with panchayats and rural development department has led to increase in awareness among people about the welfare schemes and functioning of PRIs. It is evident that participation of people has increased in the meetings of gram sabha.

Figure 3.4 - Clean Village Streets in Surguja

Figure 3.5 - Participation of Village Residents in Gram sabha Meetings

Figure 3.6 - Panchayat Bhawan Lundra, District Surguja

3.8.2 Scheme Strategies, Monitoring and Review Mechanisms, Innovations & Reward Structure

a) Selecting convergence as a model of programme implementation

Inspired by success of pulse polio programme which was implemented with close coordination of different departments, the district administration adopted a deliberate strategy of convergence to implement Total Sanitation Programme in the district. Convergence of different departments was made possible by convincing different line departments that working for TSC will also be useful in achieving their departmental objectives for which they are directly responsible. For example, in the case of Continuing Education Mission, the confidence level of concerned motivators went up and their interaction with parents improved, which resulted in increased school attendance. Adopting strategy of convergence helped in pooling in resources and creating a sense of ownership among different stakeholders about the programme activities.

b) Establishing linkages with market

It was realised that large scale construction may generate huge demand for construction material which may cause shortage of supply. To overcome this risk, negotiations were held with suppliers of material (cement, bricks etc.) and prices were fixed. Procurement guidelines were prepared and provided to panchayats. This resulted in preventing supply gaps.

c) Creating a sense of pride

Among line departments and panchayat officials a sense of pride was created towards their work. Chief Executive Officer of Zila Parishad mentioned that panchayats, schools and Anganwadi workers proudly tell visitors that toilets are available in the district and that children use them regularly. The Schools and panchayats thus show their work to the outsiders with pride.

d) Community participation

In order to create community ownership and to achieve long lasting impact, community was informed and actively involved in the implementation. People were informed about the linkages between open defecation and adverse health outcomes. Toilets were constructed under the programme by providing construction material free of charge, but individuals and families were asked to contribute manpower.

e) Effective monitoring of the progress

To track the performance monitoring was done at two levels. At first level District Collector along with other district level officials conducted weekly reviews of the progress. At the second level District Level Monitors and block level supervisors were deployed. They visited the villages and photographed the constructed toilets, using these to present their assessment of the situation on the ground during review meetings.

Toka-Taki Samitis were also formed in the villages. *Toka-Taki Samiti* is a committee that includes ward members, women and other members of the community and aims at stopping open defecation.

f) Innovative IEC campaign

A multipronged strategy was adopted for demand generation. A mix of mass media, mid media and interpersonal communication was used to generate awareness and to bring in desired behavioural changes among the people.

Some of the innovative methods used for IEC are as below:

- Use of All India Radio for projecting best performing stakeholders and creating role models.
- Permanent and pictorial messages were displayed at important places like along road side, schools and anganwadi centres.
- Chetna Rath and films displayed messages for a clean and healthy community.
- An interactive dialogue had been established with the community by demonstrating hygiene practices.
- Government officials, NGOs, panchayats, school children and scouts and guides created awareness about sanitation and hygiene and their health advantages.
- Women were particularly motivated to ask for toilets as they faced the highest inconvenience in going out for defecation.

g) Imparting quality training

Quality of training has been maintained. Trainings had been conducted by expert trainers in the presence of key decision makers. This was useful in sending a uniform message down the line, the process provide credibility to the decisions taken during training events. Continuing Education Programme motivators, community health workers, anganwadi workers, teachers, sarpanch, village panchayat secretaries and masons were trained. The training of masons was highly useful as a cadre was developed that could construct the toilets within the stipulated time.

h) Waste Management Techniques

People living in the villages in Surguja were taught how to deal with management of solid waste. Once the soak pit was full (usually in six months), families and workers were taught to convert the material into manure, before the toilet could be used again.

i) Prestige and Pride of winning Nirmal Gram Puraskar (NGP)

Nirmal Gram Puraskar Scheme of Government of India also played a key role in motivating panchayats for adopting sanitation activities. The

prestige and sense of pride associated with the NGP worked as a great motivation for the sarpanchs. Out of 256 gram panchayats that were proposed for the NGP 112 have won the award of Nirmal Gram.

3.8.3 Financial Viability (Sustainability)

Ownership of the community and panchayats has been a key component of the programme. People have provided financial and physical contribution for constructing the toilets and they are maintaining the individual toilets. Panchayats are taking care of community assets such as hand pumps, school and anganwadi toilets.

Dignity, convenience and privacy have been the main triggers for adoption of the toilets. In addition the community has also been properly informed about the benefits of adopting healthy habits of behaviour. These factors have resulted in sustaining the initiative.

3.8.4 Organisational Structure and Stakeholder Participation (Scalability and Sustainability)

The strategy of convergence has tremendous possibilities of replication. The major strengths that make the initiative suitable for replication include:

a) It has potential to pool in required resources (both financial as well as physical).
b) The coordinating departments are able to see link between sanitation, health, education, women and child development, panchayats and rural development.
c) The initiative offers not only direct benefits in terms of reduced disease burden but also associated benefits such as improved functioning of village level functionaries, enhanced community participation in panchayat and development works, increased retention of children in schools and anganwadi centres. These benefits with the potential of making the system accountable and responsive make the initiative replicable.
d) Lessons learned from this initiative and its success at one of tribal disadvantaged district make a case of its success in other areas as well.
e) Improved Health and Sanitation Practices through Convergence is a demand driven initiative and not solely dependent on programme funds. The implementing agency can help ensuring sufficient supply of material and human resource at reasonable cost as demonstrated in Surguja. The demand driven characteristic of the initiative makes it fit for replication.

Intra-State and Inter-State Replication

The national-level Total Sanitation Campaign (TSC) is running in India since October 2005. It was subsequently renamed as Nirmal Bharat Abhiyan (NBA) in 2011.

To complement NBA, the 'convergence' mode was adopted to run a scheme under MGNREGS across India since April 2012. This scheme lays stress on the construction of local assets in villages, including toilets, anganwadi centres, community halls etc.

3.9 Shortfalls and Suggested Corrective Actions

Table 3.1 – Initiative shortfalls and suggested corrective actions

Weakness/Shortfall	Suggested Corrective Action
1. **Programme sustainability suspect in absence of charismatic leadership:** Programme initiation and its momentum appeared to be led by charismatic leadership. This has a risk of deviating from the objectives in absence of charismatic leadership.	Well documented planning and implementation strategies with regular follow-up can help to achieve the programme objectives without extraordinary leadership as well.

Weakness/Shortfall	Suggested Corrective Action
2. **Change in govt. priorities may slow down scheme roll-out and impact**: There is a threat that with the change in priorities at district level, due to introduction of new schemes by the state and central governments, the stakeholder departments may lose the critical factor of coordination and convergence that worked so well for the Surguja health and sanitation improvement project.	Any new scheme planned/launched by the state govt. should take into consideration the existing/ongoing schemes and the synergies already achieved between different departments at the district level. Thus, new schemes should be designed to build synergies with existing/on-going successful schemes.
3. **Refresher Training:** After a certain period there will be need of refresher trainings for masons and front-line govt. staff working on health and sanitation programmes. While in the case of Surguja, resource persons were hired from UNICEF and other NGOs, in some of the districts expert trainers may not be available.	Refresher training sessions should be planned at regular intervals, say, once every year. Hiring of expert resource persons and refresher trainings need to be budgeted while conceptualising the programme.
4. **Fear of dilution of IEC campaign messaging:** IEC campaigns may lose impact in the long term, due to change in state/district administration priorities. Usually, in government set-ups, IEC activities get diluted, unless strictly focused on.	For long-term impact in changing personal hygiene habits and individual/community behaviour, IEC campaigns need to be sustained over 3-4 years, with provision for regular peer expert/reviews and audits to address different target groups and/or remote effectively. An annual audit of media & communication programme should be conducted to measure and maintain the desired reach and impact.
5. **Sustained Community Involvement and Ownership may go down unless monitored and sustained:** Community ownership depends on quality of work (construction of toilets) and awareness generation about initiative benefits.	As a key learning of the Surguja district programme, effective awareness generation and ensuring quality of work (good quality of toilet and soak-pit construction) are considered instrumental for sustainability. Again, an annual social audit should be conducted to gauge the usage and impact of construction of household and public toilets.
6. **Success of convergence requires concerted focus and efforts:** Though convergence has been proved very successful in pooling resources and achieving results with minimal cost, its execution required a rigorous focus and willingness from all stakeholders. It may be difficult to maintain this tempo and focus, in	A District Level Monitoring (DLM) committee or task force should be formed that regularly oversees the execution of the programme (construction & maintenance of toilets, IEC campaign and improvement in district-level health & education indicators) and to check if convergence between different departments is working as it was planned. For example, are

Weakness/Shortfall	Suggested Corrective Action
the absence of specific monitoring mechanisms.	panchayats maintaining public toilets effectively, are soak pits being cleaned and refurbished periodically, is there provision for adequate water to clean toilets, is vaccination of babies, young children and expectant mothers being done adequately, is there an improvement in school enrolments/reduction in school dropouts over the years and so on.

3.10 Indicative Factors for Identification of Target States

A large scale community health and sanitation scheme can be replicated in other areas (states as well as districts within Chhattisgarh), where the need to have functional toilets and sanitation is high and socio-economic conditions, including status of health, maternal and infant mortality levels, educational levels, school drop-out rates and condition of women and children similar to that in Surguja district.

The scheme can be easily scaled-up in other districts of Chhattisgarh as administrative setup, social, economic and health conditions are broadly similar to that of Surguja.

Table 3.2 - High prevalence of diarrhoea among the children and mortality rate among the children less than 5 years of age in districts of Chhattisgarh

District	Children with diarrhoea in last two weeks (%)	Under 5 Mortality Rate
Chhattisgarh	**11.3**	**70**
Surguja	**8.9**	**103**
Bastar	38.2	70
Bijapur	6.1	60
Bilaspur	11.5	72
Dantewada	11.5	72
Dhamtari	13.3	66
Durg	5.9	52
Janjgir - Champa	7.8	67
Jashpur	10.9	100
Kabeerdham	10.5	78
Kanker	19.2	67
Korba	10.5	63
Koriya	11.8	80
Mahasamund	13.8	77
Raigarh	9.7	80
Raipur	8.5	62
Rajnandgaon	14.2	65

Source: Annual Health Survey 2010-11; Census of India 2011

The table below depicts the list of states where need for toilets is high (above national average) and indicators of socio-economic wellbeing and health status are poor. In these states there is need of a programme that could bring convergence in different social development schemes and improve the conditions of sanitation, health and wellbeing of the population on a priority basis.

Table 3.3 - list of states where need for toilets is high (above national average)

Region/State	Households without latrine/use open defecation (%)	Population Below Poverty Line (%)	Population of Scheduled Tribes (%)	Children with diarrhoea in last two weeks (%)	Under 5 Mortality Rate
India	***49.8***	***27.5***	***8.6***	**NA**	**NA**
Chhattisgarh	**74**	**40.1**	**31**	**11.3**	**70**
Jharkhand	77	40.3	26	7.8	59
Orissa	76.6	46.4	23	12.4	82
Bihar	75.8	41.4	1.3	10.8	77
Madhya Pradesh	70	38.3	21	15.2	89
Rajasthan	64.3	22.1	13	13.5	79
Uttar Pradesh	63	32.8	0.6	13.1	94
Source	*Planning Commission of India (http://planningcommission.nic.in/data/datatable/1612/table_328.pdf*	*Planning Commission of India, 2004-05 (uniform response)*	*Census of India, 2011*	*Annual Health Survey, 2010-11, Census of India, 2011*	*Annual Health Survey, 2010-11, Census of India, 2011*

State-wise Distribution of Households by Type of Latrine (Toilet) Facility can alone be used as a good measure to identify states where an "Improved Health and Sanitation Practices" programme can be initiated, as shown in the table below:

Table 3.4 – Distribution of Households by type of latrine facility

S. No.	India/ State/ Union Territory	Total No. of Households (Excluding institutional households)	Latrine facility Avail-able within pre-mises	Flush/pour flush latrine connected to			Pit latrine		Other latrine			Latrine Not available within premises		
				Piped sewer system	Septic tank	Other system	With slab/ ventilated improved pit	Without slab/ open pit	Night soil disposed into open drain	Night soil removed by human	Night soil serviced by animal	Total	Public latrine	Open
1	A & N Islands	93,376	70.1	2.6	62.5	1.9	0.5	2.4	0.2	0	0.1	29.9	2.5	27.5
2	Andhra Pradesh	21,024,534	49.6	12.4	29.7	1	5	0.5	0.8	0.1	0.3	50.4	2.5	48
3	Arunachal Pradesh	261,614	62	6	22.4	10	4.4	14.4	0.7	0.4	3.7	38	3.2	34.8
4	Assam	6,367,295	64.9	5.2	14.9	8.4	10.5	24.2	0.9	0.4	0.6	35.1	1.9	33.2
5	Bihar	18,940,629	23.1	1.8	16	2.3	1.7	0.8	0.2	0.1	0.2	76.9	1.1	75.8
6	Chandigarh	235,061	87.6	85.9	1	0.2	0.4	0.1	0.1	0	0	12.4	9.1	3.2
7	Chhattisgarh	5,622,850	24.6	2.5	16.6	1.9	2.1	1.3	0.1	0	0.1	75.4	1.4	74
8	Dadra & Nagar Haveli	73,063	54.8	4.9	48.2	0.6	0.7	0.1	0.1	0.2	0	45.3	5.3	40
9	Daman & Diu	60,381	78.2	5.3	71.5	0.4	0.8	0.2	0.1	0	0	21.8	11.3	10.5
10	Goa	322,813	79.7	14.5	56.5	3.3	3.7	0.7	0.2	0	1	20.3	3.9	16.4
11	Gujarat	12,181,718	57.4	29	22.8	0.8	4.2	0.3	0.2	0	0	42.7	2.3	40.4
12	Haryana	4,717,954	68.6	21.9	25.4	3.1	14.5	2.9	0.7	0	0.1	31.4	1.5	29.8
13	Himachal Pradesh	1,476,581	69.1	7.4	51.6	1.7	7.1	1	0.2	0	0	30.9	1.2	29.7
14	Jammu & Kashmir	2,015,088	51.2	10	17.7	5.3	3.3	2.2	3.2	8.9	0.7	48.8	2.7	46.1
15	Jharkhand	6,181,607	22	3.7	15.7	1	1.1	0.3	0.2	0	0.1	78	1	77
16	Karnataka	13,179,911	51.2	22.7	13	1.2	13.2	0.3	0.5	0.1	0.2	48.8	3.8	45
17	Kerala	7,716,370	95.2	12	50.3	4.4	27.6	0.7	0.2	0	0	4.8	1.1	3.8
18	Lakshadweep	10,703	97.8	2.4	94.6	0.4	0.4	0	0	0	0	2.2	0.4	1.8
19	Madhya Pradesh	14,967,597	28.8	5.8	19.1	1.3	1.7	0.7	0.3	0	0.1	71.2	1.2	70
20	Maharashtra	23,830,580	53.1	18.4	23.5	1.6	8.3	0.5	0.7	0	0.2	46.9	12.9	34
21	Manipur	507,152	89.3	6.1	24.7	15.9	15.7	19	5.5	2	0.6	10.7	1.8	8.9

S. No.	India/ State/ Union Territory	Total No. of Households (Excluding institutional households)	Latrine facility Avail-able within pre-mises	Flush/pour flush latrine connected to			Pit latrine		Other latrine			Latrine Not available within premises		
				Piped sewer system	Septic tank	Other system	With slab/ ventilated improved pit	Without slab/ open pit	Night soil disposed into open drain	Night soil removed by human	Night soil serviced by animal	Total	Public latrine	Open
22	Meghalaya	538,299	62.9	5.8	23.7	8.6	6.9	16.4	0.3	0.4	0.8	37.1	2.8	34.3
23	Mizoram	221,077	91.9	5.7	48.4	6.7	15.1	15.5	0.3	0.1	0.3	8.1	1.5	6.6
24	Nagaland	399,965	76.5	3.3	34.4	10	11.2	16.4	0.3	0.2	0.6	23.5	7	16.5
25	NCT of Delhi	3,340,538	89.5	59.3	25.5	0.9	1.6	0.2	2.1	0	0	10.5	7.2	3.3
26	Odisha	9,661,085	22	2.5	13.6	1.6	2.1	1.4	0.3	0.3	0.3	78	1.4	76.6
27	Puducherry	301,276	68.5	14	53.1	0.3	0.7	0.1	0.2	0	0	31.6	4.4	27.1
28	Punjab	5,409,699	79.3	28.3	27.7	3.3	16	3.2	0.5	0.1	0.2	20.7	1.2	19.5
29	Rajasthan	12,581,303	35	7.2	18.6	1.9	4	2.5	0.8	0	0.1	65	0.7	64.3
30	Sikkim	128,131	87.2	11.8	59.8	3.4	6.6	5.5	0.1	0	0.1	12.8	1.5	11.3
31	Tamil Nadu	18,493,003	48.3	14.4	25.7	1.1	5.7	0.3	0.8	0.2	0.1	51.7	6	45.7
32	Tripura	842,781	86	3.5	14.2	7.2	44.8	15.4	0.5	0.1	0.4	14	2.5	11.5
33	Uttar Pradesh	32,924,266	35.7	8.1	19.9	1.8	3.4	0.7	0.5	1	0.2	64.4	1.3	63
34	Uttarakhand	1,997,068	65.8	11.8	40	1.4	11.3	0.6	0.3	0.2	0.1	34.2	1.1	33.1
35	West Bengal	20,067,299	58.9	5.6	20.7	5.6	22.3	3.2	0.4	0.7	0.4	41.2	2.5	38.6
	INDIA	**246,692,667**	**46.9**	**12**	**22.2**	**2.3**	**7.6**	**1.8**	**0.5**	**0.3**	**0.2**	**53.1**	**3.2**	**49.8**

Source: Planning Commission of India, 18th December 2013

Thus, states such as Jharkhand, Odisha, Bihar, West Bengal, Assam, Madhya Pradesh, Rajasthan and Uttar Pradesh, that have socio-economic and health indicators similar to that of Chhattisgarh, and reflect the need for a programme that could help improve sanitation, health and wellbeing of people.

Important Considerations

Thus, some of the key considerations for selecting a state/district to implement a converged health and sanitation improvement project may be summarised as below:

- Distribution of households by type of toilet facility
- Proportion of 'pucca' households in state/district, especially in rural areas and availability of wells, hand pumps and other fresh water sources in remote villages/rural blocks
- Availability of skilled labour/masons and construction material locally
- Incidence of cholera, malaria and other water-borne and vector borne diseases
- IMR and MMR, Educational Levels, GER and School Dropout Rates

3.11 Implementation Approach

Based on the current evaluation study, a set of guidelines to implement a 'model' for convergence to improve health and sanitation are presented below. These should necessarily be read along with the 'Implementation Strategy', 'Outcomes' and 'Study Findings' discussed in earlier sections. In this manner it is hoped that the reader would be able to gain a comprehensive understanding of the needs, challenges faced and best practices that can be employed for rolling out an effective, scalable and sustainable model to improve health and sanitation.

Table 3.5 - Critical Success Factors for Replication of the Initiative

Factor	Strength/Benefit
Scheme, Scope & Coverage, Enabling Policy Interventions	**1. Wide Scope and SMART Objectives** Scope of the scheme was wide, and SMART (Specific, Measurable, Authentic, Realistic and Time-bound) objectives were set, which helped brining in convergence of different departments. The objectives included - improved sanitation, better availability of drinking water, improved health (reduced vector- and water-borne diseases), improved education, effective management of solid and liquid waste, increased community awareness,

Factor	Strength/Benefit
	strengthening grassroots democracy and ensuring effective execution of PDS.
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	1. **Convergence of different department activities and resources**: • Convergence of resources and programme activities at village level was a major programme strategy that helped to pool in resources and coordinate the activities of different key departments. • Weekly review by the District Collector and senior district officials, diligent review by a DLM Committee and block-level supervisors helped to track the progress and identify bottlenecks. • Nirmal Gram Puraskar (NGP) of GoI was a motivating factor for the panchayats to take up sanitation activities. Of the 256 Panchayats which were proposed for Nirmal Gram Award, as many as 112 won the award.
Capacity Building and IEC Campaigns	1. **Training & Orientation**: Training sessions were conducted by expert trainers in the presence of district-level key decision makers. This was useful in sending a uniform message down the line and lent credibility to the decisions being taken during training events. Continuing Education Programme motivators, community health workers, anganwadi workers, teachers, sarpanch, village panchayat secretaries and masons were trained. The training of masons was highly useful, as a cadre was developed that helped in construction of toilets within the stipulated time. 2. **IEC Campaigns**: A multi-pronged IEC campaign strategy comprising Behaviour Change Communication (BCC) and Interpersonal Communication (IPC) were used for demand generation and to bring about short-term and long-term behavioural changes. Mass media activities such as announcements over All India Radio and loudspeaker were used to spread awareness, mid-media activities were used for different target groups and IPC and group discussions were used to encourage adoption of healthy behaviours and use of toilets.
Financial Viability	1. **Community Ownership** • Ownership of the community and panchayats helped to make the programme viable. People provided both financial and physical contribution for the construction of toilets and are maintaining the individual (household) toilets. Panchayats are taking care of community assets such as hand pumps, school toilets and anganwadi toilets. • The accruing health benefits encouraged people to contribute in the construction and maintenance of toilets. Community contribution helped to pay off a large part of the required funds, which made the programme financially sustainable.
Organisational Structure and Stakeholder Participation	1. **Convergence of resources and programme activities has adequate potential to replicate:** Convergence was a key factor that made the initiative suitable for replication. It was designed to maximise the impact by pooling in required resources from different departments. The initiative offered not only direct benefits in terms of reduced disease burden but also associated benefits such as improved functioning of village level functionaries, enhanced community participation in panchayat and development works, increased retention of children in schools and anganwadi centres. All these made the system accountable and responsive, which in turn make the initiative

Factor	Strength/Benefit
	replicable. The programme's success in a remote, tribal-dominated, disadvantaged district thus makes a case for its successful replication in other states and districts as well. The programme is demand driven, not solely dependent on subsidies, which makes the programme replicable.

Salient Features of a Robust Public Health & Sanitation Programme: Replication Guidelines

In addition to the pointers that have been provided in the earlier sections of this chapter, the following broad guidelines may be factored into a robust public health and engineering project:

The Surguja district initiative to improve health and sanitation has been successful in achieving the objectives of better sanitation and reducing the burden of communicable diseases such as malaria and diarrhoea on the local population, especially children and women. Major factors that resulted in the success of the programme include setting smart objectives, bringing in convergence of efforts to overcome shortage of resources, handing over ownership to community and panchayats, and review and monitoring of maintenance of toilets and their regular use by common people.

The success of the programme may also be attributed to its implementation in mission mode. For success at other places (states/districts) in a different context, an intensive focus and sustained efforts for implementation will be required.

As already detailed in this chapter (Sections 3.3, 3.5, 3.7 and 3.8), the key steps that should be taken up by any state/district administration to replicate a mass health and sanitation improvement programme, build awareness levels and change behaviour patterns of members of the local tribal communities are listed out below:

Step 1: Setting SMART (Specific, Measurable, Authentic, Realistic and Time-bound) Objectives

Setting personal and community hygiene goals for every stakeholder and community member. For example, making panchayat members responsible for maintenance and upkeep of toilets in their villages, through a process of regular (weekly/monthly/annual) monitoring, and reporting cases that need intervention.

The objectives may include – Improved Sanitation, Better availability of drinking water, improved health (reduced vector- and water-borne diseases), improved education, effective management of solid and liquid waste, increased community awareness, strengthening grassroots democracy, reduced school drop-out rates and ensuring effective reach and access of the PDS.

Step 2: Developing a Collaborative Plan of Implementation

Conduct consultations with all potential stakeholders to develop a plan of implementation. The plan should reflect priorities of targets/schemes run by all involved departments, implementing agencies and persons of influence, as listed out below:

- Public Health Engineering Dept.
- Rural Development Dept.
- Public Distribution System/Dept. of Food, Civil Supplies and Consumer Affairs
- Women and Child Development Dept.
- Tribal Welfare Dept.
- Forest Dept.
- Panchayat members, MLAs and MPs etc.
- NGOs/CSOs

Step 3: Prioritising Needy Areas to Initiate Implementation

Prioritise neediest areas of the state/district to initiate the implementation. Develop vulnerability assessment criteria and identify the needy areas.

The focus should be to develop a plan that is granular to the level of village panchayat and block, so that the evaluation of the programme maintains a focus on bringing about positive changes in the most poor and backward pockets of the state/district selected for project replication.

Step 4: Bringing about Convergence to develop a Multi-stakeholder Coordination Forum under the leadership of a competent authority

Coordinating the efforts of various departments PHED, Tribal Welfare, Health & Family Welfare, Primary Education etc. and stakeholders to overcome shortage of resources (as shown in the chart below). This can be achieved through a governance and execution structure that encourages shared responsibility and inter-departmental and individual accountability. For example, the village school teacher should also be the nodal person for ground-level IEC campaign to encourage vaccination and overall hygiene.

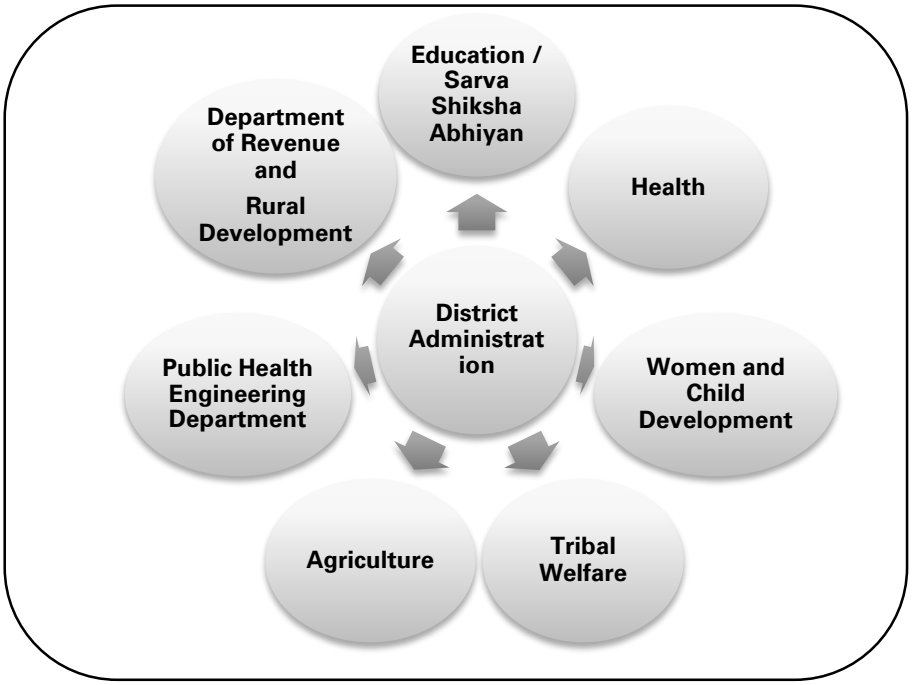


Figure 3.7 – Multi-stakeholder Coordination

Table 3.6 - The table below depicts the team structure at different levels that are required to conceptualise and implement the scheme:

Department	District	Block/Cluster	Village
Department of Revenue and Rural Development	District Collector and Deputy Development Commissioner	Block Development Officer	Patwari/ Village Panchayat Secretary
Education/Sarva Shiksha Abhiyan	District Programme Officer	BEO/ BRC/ Cluster Coordinator	Village Level Motivators/Preraks
Health	CMHO	BMO/ CHC/PHC staff	ANM and Mitanins
Women and Child Development	District Programme Officer	CDPO	Anganwadi worker and Helper
Tribal Welfare	Assistant Commissioner/ Project administrator	BEO/ Circle In-charge	Teachers
PHED	Executive Engineer	Sub Engineer	Village Mechanic and Masons
Agriculture	Senior Agriculture Development Officer		Agriculture Extension worker

Schemes that are already being run by the state/district administration and which focus on improving health indices or educational outcomes may also be exploited to bring about this convergence, to bring in more resources in terms of finance as well as manpower. For example, in Surguja district the health & sanitation programme was used as mainstream scheme and other departmental schemes with similar goals were converged.

The multi-stakeholder coordination forum of different implementing agencies helps in bringing the above mentioned convergence. Leadership of a competent authority helps everyone to be accountable and execute the programme as per the plan.

Step 5: IEC Campaign

Sustained and localised IEC campaign to change mindsets and behaviours of individuals and the community as a whole.

Some of the innovative methods which can be used for IEC are as below:

- Use of All India Radio for projecting best performing stakeholders - departments, villages and blocks to create role models.
- Permanent and pictorial messages can be displayed at important public places such as along roadsides, in schools, panchayat offices and anganwadi centres.
- Chetna Rath and films display to broadcast messages for a clean and healthy community.
- An interactive dialogue has to be established with the community by demonstrating good hygiene practices.
- Government officials, NGOs, panchayats, school children and scouts and guides can be used to create awareness about the need for sanitation and better hygiene, and their health advantages.
- Women should be particularly motivated to ask for toilets, as they face the highest inconvenience in going out for defecation.
- As explained in Section 3.9 at S. No. 4, the IEC activities need to be carried out over a sustained period of time (say, 3-4 years) as behavioural and cultural changes take time to show adoption by a 'critical mass' (sizable section) of the population. An annual audit of the media & communication programme should also be conducted to measure and maintain the desired reach and impact.

Step 6: Create Market Linkages for Use of Sustainable Construction Practices and Budget for Adequate Capacity Building through Training

In the Surguja model, the district administration worked with cement and other material suppliers to reduce the average price for bill of materials for construction of toilets. Similar material procurement guidelines should be documented and shared with other state/district administrations and block panchayat representatives. Further, adoption of modern civil and public health engineering techniques, and sustainable construction practices for toilets, using locally available, environment-friendly material and resources should be encouraged to minimise long-term negative environmental impacts of using cement and concrete. For example, rain water harvesting should be incorporated to maintain ground-water levels within acceptable limits. For this it is important to adequately budget for training/retraining of masons, local PHED staff, ANMs, teachers and other stakeholders during the planning phase of the initiative.

Another innovation and budgetary support that has been introduced in Surguja and which can be adopted by other districts and states is that under the 'principle of convergence', an additional sum of Rs. 10,000 per family is sanctioned to construct toilets with two soak pits (Rs. 5,400 under MGNREGA and Rs. 4,600 under Nirmal Bharat Abhiyan/Total Sanitation Campaign). This allows for continued use of toilets by individuals and families round the year, six months using the first soak pit and the subsequent six months using the second soak pit. Additionally, families that contribute to the digging and construction work are provided a further incentive of Rs. 900, for their time and effort.

Step 7: Encourage Community Ownership

As explained earlier, the local village residents should be involved through voluntary activities by way of financial contribution or manpower. Further, ownership of scheme assets (toilets in public places, toilets in panchayat bhawans, toilets in schools etc.) must be handed over to local community members and panchayats for regular upkeep and maintenance.

Step 8: Review and Monitoring

Regular review and monitoring of project performance and outcomes versus plan premises/assumptions and current/emergent needs of the target population (beneficiaries from local rural/tribal communities). For example, sanctioning material/resources for helping in the construction of two soak-pits per toilet/toilet complex, as against only one envisaged earlier. This will encourage regular and continued use of toilets.

As stated in Section 3.9 at S. No. 6, district level and block level monitoring committees/task forces could be formed, headed by District Collector and block development officers, respectively, to regularly review the scheme achievements versus goals and suggest corrective action, as required.

Front-line PHED staff should be asked to visit villages, take photographs of the constructed toilets on a monthly basis and upload to a central server, to present their assessment of the situation during reviews. One unique practice in Surguja district was that Toka-Taki Samitis were formed in the villages. Toka-Taki Samiti is an informal committee that includes ward members, women and other members of the community and aims at stopping open defecation. Such informal groups and committees can be constituted by including members of the local population for effective monitoring and control of people's defecation and personal hygiene habits.

Key Processes and Indicative Timelines

In Surguja district it took from July 2007 to June 2008 to cover 256 GPs through the convergence mechanism, to train masons, provide material for construction at cheaper rates, construct toilets and most importantly, educate and inform people about the need to change their defecation habits. However, it was realised by the administration that they needed to run a sustained campaign for long-term impact in changing habits permanently and improving MMR and IMR rates. In effect, the programme is perennial in nature and needs to be sustained through budgetary support, political direction and administrative will.

These timelines are indicative timelines based on the interactions with the stakeholders involved in the initiative and secondary researches; the actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city. The indicative timeline may also vary depending on political and administrative will of policy makers and implementers.

Table 3.7 – Indicative Timelines

S. No.	Key Phase/Implementation Step	Indicative Timeline
1.	**Implementing Health & Sanitation Programme through 'convergence model':** Training of masons; Arrangements with suppliers to provide construction material at low cost; Construction of Private Toilets and Public Toilet Blocks in schools, anganwadi centres, panchayat bhawans etc. across all blocks of the target district	11 to 12 months
2.	**IEC campaigns**: Education of local people to stop open defecation and use toilets instead through visuals & hoardings, community ownership and local residents' monitoring committees (Toka-Taki samitis etc.)	Ongoing, perennial activity to help raise awareness and change individual and community behaviour patterns

Overview of Proposed Robust Public Health & Sanitation Programme

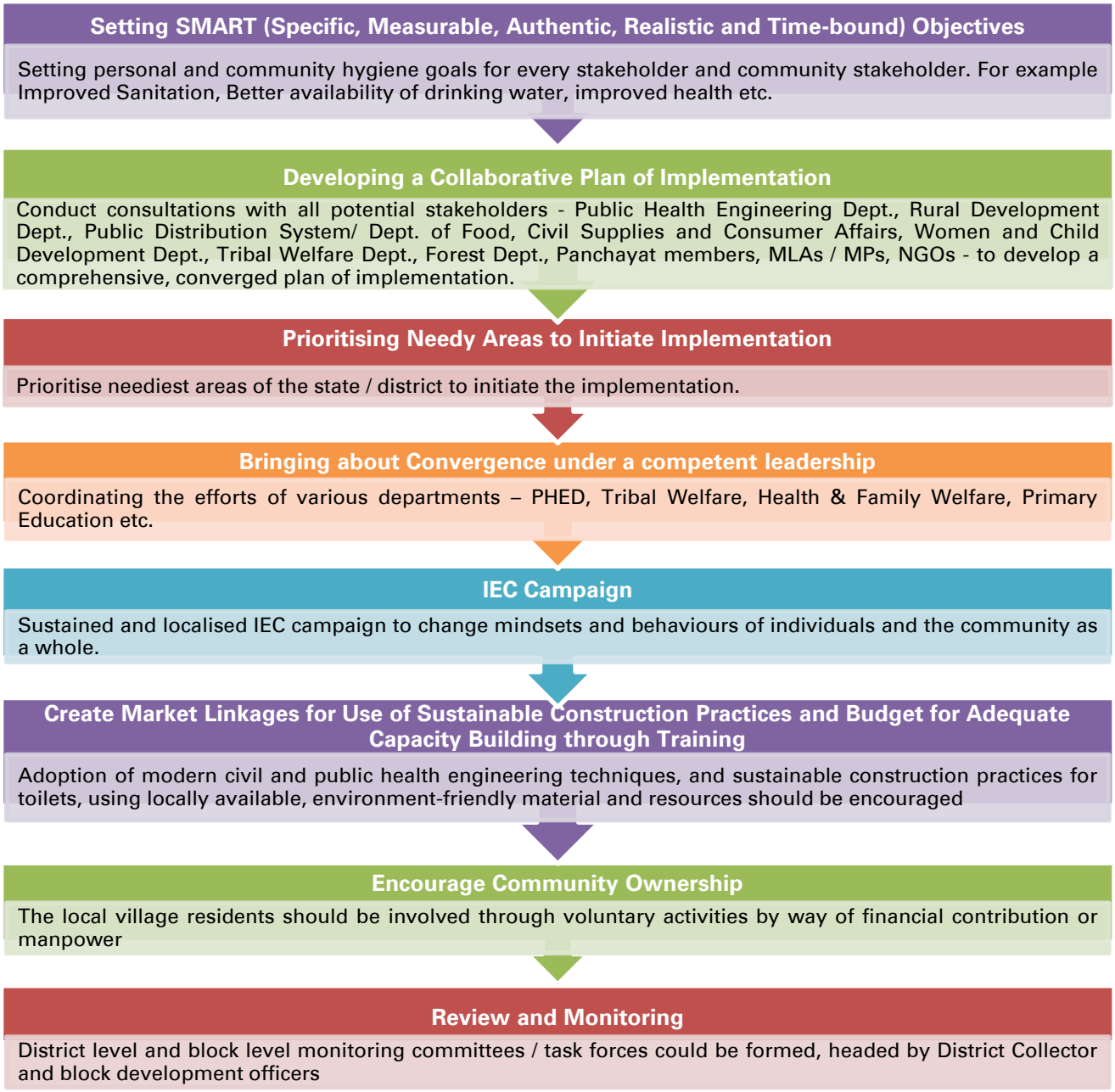


Figure 3.8 – Overview of proposed replication guidelines

Experiences from Other 'Convergence' Projects

Case Study: Odisha State Mass Convergent Sanitation Mission "SNJOG"

The Odisha State Water & Sanitation Mission of Rural Development has launched an intensive Mass Convergent Campaign for successful implementation of Total Sanitation in the State from 18th-30th June 2007 in convergence with Women & Child Development, Health & Family Welfare, School & Mass Education, Panchayati Raj departments. All these departments have joined together in the intensive campaign which has named "SANJOG". The campaign aims to mobilise the front line grass root level and 1st level of mobilises/motivators of the respective departments to first construct toilets in their households under the TSC programme so that they can ideally motivate others in the village to have toilets in their households. The focused target group of stakeholders consists of:

- Ward members – 87,000 (P. R. Dept.)
- Self Employed Mechanics – 9,000 (P. R. Dept.)
- Shiksha Sahayaks – 45,000 (S & ME Dept.)

- Anganwadi workers – 36000(W & CD Dept.)
- ASHA workers – 35000 (H & FW Dept.)

All NGOs, SHG leaders, AW helpers, Primary School teachers and civil society organisation have also requested to join the campaign and have own toilets, if not the financial disciplinary action should be taken against them, as they were the key personnel to propagate the basis need cum ideas of this TSC.

(Source: Evaluation Study on Total Sanitation Campaign, Planning Commission, GoI, 2012)

Case Study: Total Sanitation Campaign in Tripura

TSC was launched in Tripura in 2001-2002 to ensure reduction in mortality and other disease. TSC in Tripura started functioning with a goal of achieving 100 percent sanitation coverage of habitations, Schools, Anganwadi centre all over the state for improving the quality of life for rural people. The concept of sanitation in Tripura includes not only disposal of human excreta by construction of latrines but also liquid and solid waste disposal, personal hygiene, domestic as well as environmental hygiene. A base line survey was conducted in the year 2003 to identify the BPL & APL families having no scientific toilets and to verify the health & hygiene condition of the people of the state. Other institutions like Anganwadi centres, Balwadi centres, Primary Health Centres, Schools having no toilets were also identified though the base line survey. The survey also revealed that awareness regarding health and hygiene in the Districts was also very meagre.

Special attempts have been made to aware masses though IEC activities at schools, community places, ICDS centres. IEC activities like distribution of booklets, leaflets, calendars, posters, banners, signboards in the prominent places, street play, drama, cleanliness and use of pucca toilets and the HRD activities, like training of masons in the design of squatting plates etc. were taken up. Audio cassettes and video CDs on TSC in Bengali and Kakborak were distributed in the Panchayats. Competitions on various aspects like song, debate, sit and draw, drama etc. on TSC among the school students were also organised. Door to door publicity by the block level workers, SHG motivators, members of NGOs, social workers and others were given special emphasis.

The uniqueness about the strategy adopted under this programme was to make the programme community led and People centred along with involvement of PRIS. Government officials, Grass root Level workers and educational institutions etc. During the campaign on sanitation, other related issues like health, hygiene, woman empowerment etc. were also carried out.

Figure 3.9 - Sanitation Awareness Campaign, Tripura

Figure 3.10 - School Play on Sanitation Education, Tripura

Source: Total Sanitation Campaign, Min. of Rural Development, GOI, 2012 http://www.indiasanitationportal.org/sites/default/files/TSC.pdf

Case Study: Total Sanitation Campaign, Gujarat

The State Government started implementing the TSC project with due emphasis on IEC from the year 2004-05 by developing systematic project proposals for each of 25 districts with approved budget support from the Govt. of India and the State Government. As a result, project funds were released to the districts by the end of financial year 2005-06. Meanwhile, the State

Government prepared its own implementation manual and communication strategy for implementation of the project. Critical task of conducting district-wise Knowledge Attitude Practices (KAP) studies was done and District Communication Plans were prepared. This was made possible by the crucial step of establishing a State level Communication and capacity Development Unit (CCDU) under Department of rural Development of State Government.

Figure 3.11 - Encouraging Hand Washing Amongst School Children as part of Nirmal Gujarat Project

Source: Total Sanitation Campaign, Min. of Rural Development, GoI, 2012

The State CCDU continues to get technical support and facilitation from the Gujarat State Office of UNICEF under the ongoing Child Environment Programme (CEP) in the state.

- As part of CCDU activities workshops of State and District level implementing agencies and stakeholders were organised. Representatives from all stakeholders Government Departments like health, Panchayat, rural development, water supply, education, NDDB. NGOs, information and broadcasting, participated in the workshop.
- A three-tiered event including inter-state learning conference, district Stakeholders workshop and an exhibition on sanitation were organised. The PRI functionaries from Gujarat were specially brought in groups from various districts to the exhibition for advocacy and their capacity building.
- The workshops and trainings on IEC and the process of implementation were organised for State and District level implementers and facilitating NGO representatives at MS University and Vivekananda training institute, Vadodara. More than 400 trainers were trained as Trainer for district and sub-district trainings. About 3-4 representatives from each village were trained. More than 60,000 trainees participated in the above trainings.
- UNICEF supported trainings of Training of Trainer (ToT) on hygiene education in schools and Anganwadis. Representatives from DRDAs, BRC and CRC were trained as trainers, who trained Anganwadis and mid-day meal workers. UNICEF provided Kits for training school sanitation & Hygiene education. The hygienic education at school level is introduced through regular curriculum from 4th to 7th standard in primary schools.
- The physical implementation of TSC was formally launched on 2nd October, 2005 (Mahatma Gandhi Jayanti) in the State. As the project was scaled up for implementation in all districts, it was obvious that there would be need of large quantity of sanitary pans and accessories for toilet construction. Therefore, a workshop of the manufacturers and implementers was held in October 2005 wherein more than 100 representatives of manufacturers participated.

All 16,800 primary schools without sanitation facilities at the time of project formation have been covered. Simultaneously, 15,412 Anganwadis operating in Government premises have also been covered under the project. More than 1,100 community sanitation blocks at public places such as pilgrimage centres, weekly markets and in the Gram Panchayats are constructed by involving Civil Societies, Charitable trusts and Govt. organisations to ensure sustainable

Operation and Management

There was only one National Nirmal Gram Puraskar winner Gram Panchayat in the year 2004-05 and four in 2005-06. 1640 Gram

Panchayats applied for award during 2006-07. This shows the scale of awareness generated in community for need of sanitation by the collective efforts of all.

The TSC implementation and results of total cleanliness in the rural areas encouraged State Government to declare the year 2007 as Nirmal Gujarat. The State Government has also provided additional budgetary support for rural sanitation and cleanliness programme during Nirmal Gujarat year. The Nirmal Gujarat programme of State Government has provided boost to the TSC by exercising it for one-year earlier completion of the TSC project in the State.

Estimated coverage of rural sanitation in Gujarat has improved from 22 % (census 2001) to 56% indicating annual logarithmic increase from 1% to 15%.

Case Study: Total Sanitation Campaign on Mission Mode in Shimoga District, Karnataka

Shimoga, a Karnataka district, has achieved total sanitation within a short span of time with a mission mode through excellent interdepartmental coordination. Though the Total Sanitation Campaign (TSC) was sanctioned earlier, the programme was formally launched on October 2, 2005, in the district as part of the state-wide launch. By 2009 end, 230 gram panchayats (GP) out of 260 had achieved total sanitation and received the Nirmal Gram Puraskar (NGP) from the Government of India. The remaining 30 GPs have applied for NGP in 2010. This is a good practice in rural sanitation in the state as well as in the country.

The strategy adopted by the district was totally demand-driven, community-led and people-centred. A major factor in the success was the active participation of, and a big push from, the officials and elected representatives at all levels under the leadership of the Chief Executive Officer, Zila panchayat (ZP). In addition to human excreta disposal, management of liquid and solid waste, as well as personal and community hygiene were also addressed under the programme.

Approach and Strategy: The strategy was built on the principles of the TSC guidelines, with a focus on involving Panchayati Raj Institutions and the community at all stages.

Key Elements of the Strategy

Phasing: Initially the district worked with selected 25 GPs where GP leadership was very strong and focused on achieving ODF status. Twenty-three out of these achieved total sanitation and received NGP in the first year (2006–07). With this, the district administration and field-level staff also gained confidence.

Demonstration effect: All the 23 GPs that received NGP in the first year were showcased in the district to motivate other GPs. The GP secretaries and the president of the NGP GPs were enlisted as resource persons to work in the neighbouring GPs for motivation and guidance.

Involvement of more stakeholders: One of the most important steps taken by the district administration was to involve other line departments such as Health, Education, Child and Mother Welfare and Social Welfare in addition to non-governmental organisations (NGOs), self-help groups, anganwadi workers, children, parents, teachers and headmasters of the local schools, with the support of the School Development Management Committees.

Role of the media: The press and media played an important role in affecting a psychological change in the mind-set of the rural people with regard to the implementation of the TSC. Many media exposure visits were organised to the successful villages and GPs to disseminate success stories in the electronic and print media.

Involvement of religious and informal leaders: Religious and informal leaders played an important role in spreading the message of the importance of sanitation through visits to villages and 'Meet the Media' programmes.

Supply chain management: Sanitary materials' productions and sanitary marts were established locally based on requirement. Financial institutions, such as lead banks, were roped into the programme to extend financial assistance or

loans through self-help groups. The Rotary Organisation also joined hands in the implementation of the TSC in the district. They provided 'Baby Pans' to all anganwadi centres in the district. Many leaders contributed in kind, for instance, providing tractors or labour to procure local materials for the construction of toilets. The GPs were authorised to purchase the bricks, pans and other materials at competitive rates fixed by the district-level committee.

Recognition

Recognition and felicitation of support: The GP's secretaries, presidents or any other individual who made a substantial contribution for sanitation promotion were felicitated in public functions, which triggered government officials at the field level to play a proactive role in the TSC.

Monitoring: Various approaches were adopted to monitor the success of the programme, for example, organising media visits to villages, creating monitoring committees at the village level, involving school children in tacking open defecation in the villages, etc.

When there were no funds available under the TSC, the GPs diverted local funds allocated for other works, to ensure the easy flow of money for the programme. This was reimbursed subsequently when the funds were released. Some of the GP presidents contributed their honorarium/sitting fee to the TSC till the village become ODF, while some others undertook dharnas in front of the households reluctant to build a toilet.

Health Impact

The successful implementation of the TSC in the district seems to have made a remarkable positive impact on the general health condition of the rural people. The incidence of many water-borne diseases has come down drastically. While as many as 4,643 cases of water-borne diseases (such as cholera, gastroenteritis, jaundice, typhoid, amoebic dysentery) were reported in 2005–06, this number gradually came down to 2,427 in 2007–08, 1,215 in 2008–09 and 595 in 2009–10 – according to the Health Report of the Primary Health Centres of all the 230 GPs. This reduction is attributed to the positive impact of the TSC.

(Source: From Dreams to Reality - Compendium of Best Practices in Rural Sanitation in India, World Bank)

Summary of Key Learnings from Other Community Health & Sanitation Projects

Following are the key learning of the above mentioned successful programmes:

1. Collaboratively developed plan of implementation /strategies helps in successful execution of the programme.
2. Demand-driven, community-led and people-centred approaches make the programme sustainable.
3. Implementing the programme in mission mode helps time bound execution of programme
4. Prioritising the neediest area and demonstrating the programme therein helps scaling up in other areas with tested strategies.
5. Involving all relevant stakeholders and bringing convergence helps pooling in resources to mitigate funding constraints.
6. Community involvement brings in ownership and greater sustainability.
7. Using innovative methods to build the capacities of programme functionaries helps overcome shortfall of the trained manpower.
8. Partnering with non-government and private providers ensures regular supplies of materials.
9. Recognition and felicitating partners and workers keep the stakeholders motivating.
10. Robust monitoring through Toka-Taki Samitis helps in understanding the programme gaps and planning corrective actions.
11. Adopting effective communication methods helps bring about behavioural change of all concerned stakeholders.

4 – Computerisation of Decentralised Paddy Procurement and Public Distribution System (PDS) in Chhattisgarh

4.1 Initiative Objectives

The objective of this initiative was to leverage information and Communications Technology (ICT) to control diversion and leakage of resources (food grains and other essential commodities) in the delivery mechanism (procurement, milling, storage and re-distribution of paddy and rice via the public distribution system) in the state of Chhattisgarh.

4.2 Background: Rationale behind the Initiative

The Government of Chhattisgarh initiated a set of reforms to improve its Public Distribution System (PDS) by adopting a unique ICT based module to create a transparent and accountable delivery mechanism.

To address the leakages in PDS, the state of Chhattisgarh implemented an end-to-end information technology solution in 2007. Operations at every level of the scheme – from procurement of produce, to storage and transportation to state warehouses as well as Fair Priced Shops (FPSes) – were computerised. Continuous monitoring of operations at all levels was undertaken via reports uploaded onto the scheme portal in real time. This web-enabled dashboard view led to better management and enhanced transparency in operations. The online platform provided an account of commodity stocks, which helped decision makers in utilising the inventory of commodities with greater efficiency. A unique feature of PDS in Chhattisgarh was the innovative citizen interface portal through which citizens could track the movement of PDS commodities and also register their grievances.

4.3 Key Factors leading to Initiative

Presence of middlemen at all stages of storage, transportation, milling and so on, who are in nexus with politicians and petty bureaucrats resulted in the leakage of food grains meant for PDS into the open market, even before it reached the village FPS.

4.4 Project Initiation: When and Where?

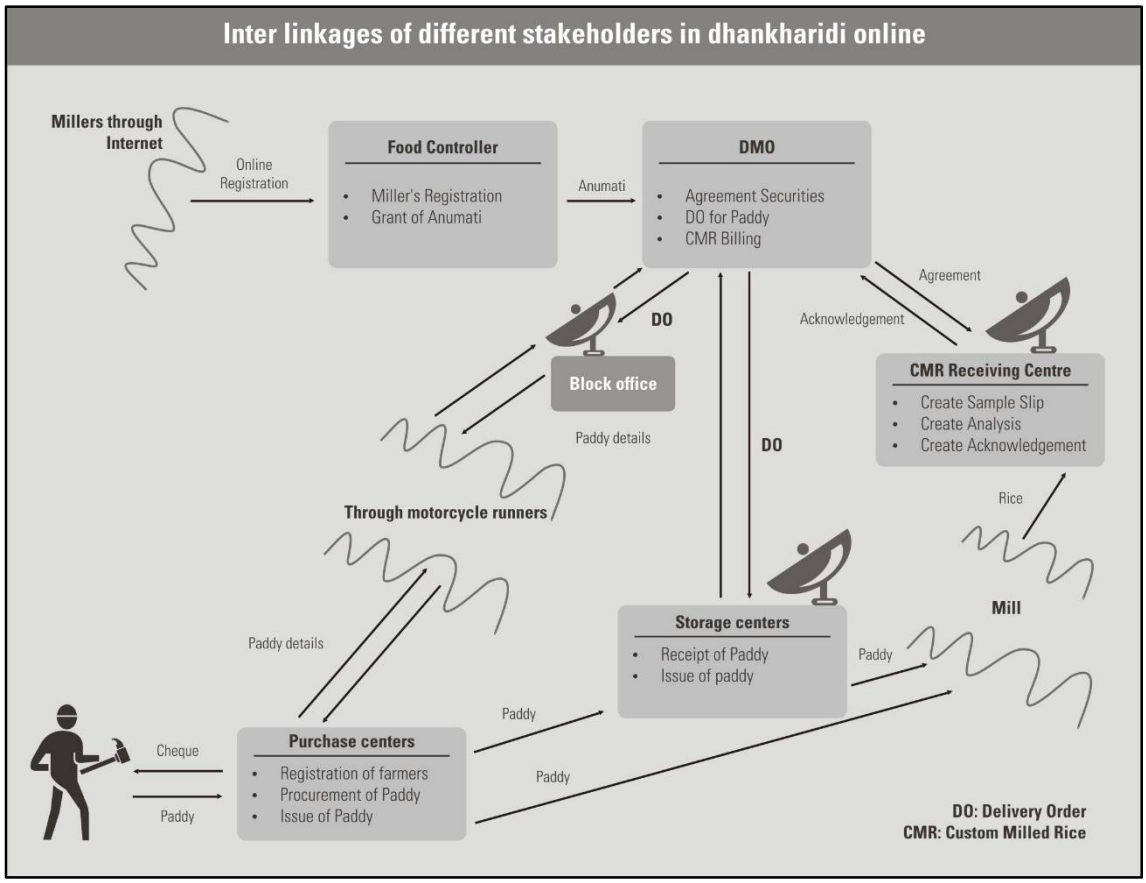
In order to tackle the problem Govt. of Chhattisgarh provided doorstep procurement and delivery of paddy, from farmer to mill. Effectively, through a series of administrative reforms initiated in the year 2007, Govt. of Chhattisgarh computerised the whole PDS chain from Procurement to Distribution level and ensured food grains reached the target beneficiaries without leakages. Paddy procurement had been computerised starting with registration of farmers, procurement centres and on-line registration of rice mills; the entire supply chain was tracked online and in the public domain, till the point rice reached the CGSCSC godown. LAMPs and PACs were designated as procurement centres, thus resolving the problem of farmers having to travel long distances to sell their produce. Purchases were made at the doorstep of farmers and cheques were delivered on the spot. Involvement of elected representatives brought in transparency and accountability.

No middlemen were allowed. Time and money investments were reduced through on-line registration of dedicated millers to respective purchase centres. For the Distribution aspect a series of process reforms were initiated in the year 2007. These included a unified ration card database, automated allotment, submission of FPS sale through declaration, web based application to track movement of food grains through the state distribution centres.

4.5 Implementation Strategy Adopted

To address the leakages in PDS, the Govt. of Chhattisgarh implemented an end-to-end information technology (IT) solution in 2007. Operations at every level of the scheme – from procurement of farm produce (mainly paddy), to storage and transportation to state warehouses (MARKFED, Chhattisgarh State Civil Supplies Corporation and Food Corporation of India) and Rice Mills – were computerised.

'Dhankharidi' – Paddy Procurement in Chhattisgarh: Process Flow



Source: Dept. of Food, Civil Supplies and Consumer Affairs, CG

Figure 4.1 - Flow chart of the Paddy Procurement implementation process

Under the newly computerised version of the Chhattisgarh PDS, paddy procurement is tracked by electronic means. Farmers are registered online and once paddy is procured from them, they are given computer generated receipts. Payment cheques to farmers and delivery orders for movement of paddy from the procurement centres to rice mills and storage centres of MARKFED and FCI are printed in real time.

Workshops were held every 15 days during the initial stages of the project to train over 1,500 data entry operators in basic computer operation. BPL (white/yellow) ration cards were issued to poor families in the state by the Department of Food, Civil Supplies and Consumer Affairs, Govt. of Chhattisgarh which enabled them to purchase subsidised rice, wheat and sugar from the designated Fair Price Shop (FPS) in their village/neighbourhood.

Figure 4.2 - BPL (White) Ration Card Sample

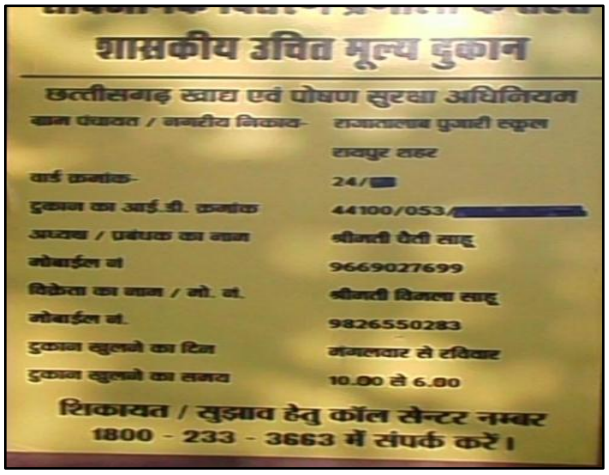


Figure 4.3 - Display Board outside FPS

4.6 Challenges Faced

Presence of middlemen at all stages – storage, transporters, millers and so on – who were in nexus with petty politicians and officials resulted in leakage of food grains meant for PDS into open markets even before the grains could reach the village/neighbourhood FPS.

While the Paddy Procurement/PDS computerisation scheme was launched across Chhattisgarh, lack of connectivity (internet access) to remote village procurement centres, for conveying purchase guidelines, software updates or other instructions and receives information on quantity and quality of paddy purchased emerged as a stumbling block. To overcome little or no connectivity at the village panchayat level, a unique innovation was developed for data transmission at procurement centres – 250 motorcyclists were hired to carry data every day from the procurement centre computers to block headquarters, where they are uploaded to the central server. Any new software or additional information was similarly downloaded at the block HQ level and carried back to the procurement centre.

4.7 Outcomes Achieved

The Project has led to the development of efficient processes for the procurement of paddy, storage, milling and re-distribution through Fair Price Shops (FPSes). With efficient processes and computerisation in place, the initiative has led to effective monitoring of leakages. The visibility of the supply chain has been strengthened also creating greater "Social Equity".

The objectives of Scheme have been publicised widely through IEC campaigns in local media.

There has been capacity building at the State, District and Block/Ward/Panchayat levels – at the CGSCSC, MARKFED, FCI, rice mills, and FPS.

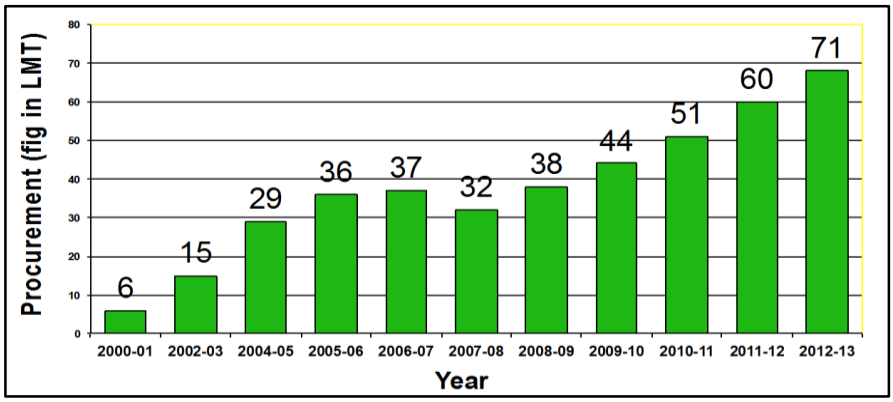


Figure 4.4 - Paddy Procurement Trends: Chhattisgarh 2000-01 to 2012-13

Source: Dept. of Food, Civil Supplies and Consumer Affairs, Govt. of CG

Outcomes in Pictures: Paddy Procurement in Chhattisgarh

Figure 4.5 - Paddy Procurement Centre (not more than 10 km from farmers' place of residence, no middlemen)

Figure 4.6 -Timely Payments to Farmers (same-day issue of cheques)

Figure 4.7 - Computerised Records of Paddy Procurement

Source: Dept. of Food, Civil Supplies and Consumer Affairs, Govt. of CG

The Project also has seen innovative use of Information and Communication Technologies (ICTs) that are implemented by NIC.

Figure 4.8 - COREPDS Hand Held Terminal with Chip-enabled Ration Card

Figure 4.9 - Fair Price Shop in Raipur

4.8 Key Study Findings

The study has found the following:

4.8.1 Scheme Scope & Coverage, Enabling Policy Interventions (Impact, Utility)

The coverage of the PDS scheme is still inconsistent, especially in remote rural/tribal areas of the state, e.g., in parts of Bijapur, Narainpur and Dantewada. This is as per anecdotal evidence gathered from respondents (beneficiaries) and news reports in local/vernacular media.

4.8.2 Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure (User Satisfaction)

The problem of 'ghost' ration cards issued to non-deserving individuals/families needs to be addressed on a priority basis. The system must have guaranteed insulation from political interference.

Outcomes in Numbers: Paddy Procurement in Chhattisgarh

Revival of Cooperatives through strengthened Financial Viability

- All operations of procurement through PACS/LAMPS/DCCBs and MARKFED, which are co-operative bodies.
- Paddy procurement facilitates recovery of loan for the DCCBs. Around 1,000 crore of credit recovered by way of linking paddy purchase.
- Around Rs. 212.50 crore paid as commission to PACS in lieu of paddy procurement during FY 2012-13.

- DCCBs get Rs 34 crore for administrative expense.

4.8.3 Capacity Building and IEC Campaigns (Utility and Sustainability)

- Organisational Structure and Stakeholder Participation are still at a basic level. There is a need to strengthen business processes, build organisational skills and develop customer orientation.
- Market failures – such as poor quality paddy supplies or diversion of food grains need to be strictly prosecuted and penalised.
- IEC campaigns are still not influencing mindsets. The objective of such campaigns should be to bring about more long term results such as helping move the system from "subsidy and entitlements" orientation to a self-sustaining, consumer centric ecosystem.

4.8.4 Financial Viability (Sustainability)

- Many FPSes are not viable under the current business model and have shut down operations, e.g., in Raipur town. FPS salesmen met by our team felt that the Rs. 45 per quintal commission currently paid to them was not enough to run their stores even at break-even levels; the general sentiment was that FPS salesmen should be reimbursed Rs. 100 per quintal as commission.

  This sentiment points to a larger issue - policy guidelines need to be reviewed more frequently. Possibly, Fair Price Shops should be encouraged to become self-sustaining 'mini superstores' by stocking FMCG/consumer goods and other in-demand SKUs like mobile phone service pre-paid re-charge cards, plus information and services about government schemes and programmes.

4.8.5 Organisational Structure and Stakeholder Participation (Scalability and Sustainability)

There is a need to have Integrated Operations across the Supply Chain – Rice Mills, Transport Companies and FPSes need to be integrated with the Paddy Procurement/PDS IT planning and monitoring system.

4.8.6 Technology Interventions (Scalability and Replicability)

- FPS operations are not highly visible. Hence there is a need to move the scheme benefits to the 'next level' through the extension of IT/computerisation to the 'last mile', that is, Fair Price Shops, e.g. through COREPDS or "meri marzi" scheme.
- There is also a need for "future proofing" of ICT systems and architecture, in line with projected evolution and maturation of consumer demand for higher value-added, packaged goods and information services. The system should be able to seamlessly interface not only up-and-down the paddy procurement/PDS supply chain, but other government departments/agencies and most importantly, private supply chains, such as those operated by HUL, Godrej, Nirma, P&G and other food and clothing retailers.
- Online Portal (www.cg.nic.in/khadya & www.cg.nic.in/citizen) helps in monitoring and reporting of purchases by COREPDS beneficiaries, in real-time.

Software Development and Replication

Computerisation of Paddy Procurement and PDS (supply chain level) was launched in the state after the New Control Order was passed on 23rd December 2004 (de-privatisation of FPSes).

NIC's computerisation solution (supply chain) was implemented across Chhattisgarh state starting December 2007 and completed in FY 2010-11. Existing 450 CGSCSC staff were trained and additional 400 staff were hired as turnover of CGSCSC also increased from approx. Rs. 2,000 crore (2002-03) to an estimated Rs. 8,000 crore (2013-14).

All old ration cards cancelled and new computerised ration cards (unified ration card database) issued starting April 2007. CGSCSC web site inaugurated in January 2008.

Under the Chhattisgarh PDS computerisation, nearly 11,000 FPSes, supplied by approx. 120 distribution centres, span the state.

MP and Odisha state NIC offices corresponded directly with CG state NIC office to implement the PDS software. Delhi, Chandigarh, Karnataka, Andhra Pradesh and Gujarat implemented their own systems.

A good model to promote sharing of key learnings in software development and system integration could be via the NISG (National Institute for Smart Government) route or the NIC directly. A central repository of all such software solutions with implementation guidelines, indicative budgets, team structure/manpower requirements and timelines can be made available via a 'public goods & services applications platform' (intranet), similar to data.gov.in.

4.9 Shortfalls and Suggested Corrective Actions

Table 4.1 – Initiative shortfalls and suggested corrective actions

Weakness/Shortfall	Suggested Corrective Action
1. **Lack of Transparency of FPS Operations:** Computerisation/Integration of IT-enabled Paddy Procurement/PDS at the Fair Price Shop (FPS) level has not been implemented.	While the FPS operations have shown visible improvements on the ground and have been largely appreciated by the poor residents of the state, there is a need to further strengthen supply chain and extend its reach to the 'last mile'. IT/computerisation of FPS operations can play a significant role in this process by improving the transparency of operations, i.e., information about availability of commodities and increased convenience through issue of rations in smaller lots as implemented in the "meri marzi" pilot. This measure alone can positively impact perception/satisfaction levels of beneficiaries to a great extent. In a possible future scenario, the capabilities of the COREPDS ICT architecture can be extended to work as a two-way channel of communication between state agencies, farmers and consumers, thereby helping planners in better capacity planning of storage and distribution capacities.
2. **Coverage still Patchy:** Difficult to say to what extent the Chhattisgarh Paddy Procurement/PDS is working in the remote rural/tribal areas like Dantewada and parts of Bijapur and Narainpur (on the basis of conversations and news reports).	Expand reach, create mass awareness about scheme benefits, continue to increase participation of women Self Help Groups (SHGs), rural and tribal communities, improve grain storage infrastructure and capacity. Build and strengthen the PDS network so that benefits of modern procurement and distribution supply chains are able to enrich the lives of common people living in far-flung communities. Add new categories of goods and services desired by a consumer such as spices, snacks, cosmetics, toiletries, OTC drugs, mobile SIM cards etc.
3. **Scheme Governance, Review Mechanisms, Innovations and Reward Structure need to be spread wider:**	While the state's Paddy Procurement Policy with its Minimum Support Price (MSP) incentive to farmers is an effective market

Weakness/Shortfall	Suggested Corrective Action
The Scheme's Equity-Value objectives attempt to right many wrongs – poverty, malnutrition, disease and exploitation. The impact of the Scheme on reducing malnutrition, improving healthcare outcomes and increasing enrolment in schools are not being measured in direct correlation to the reach of the FPS network and off-take of food grains by BPL families.	intervention to improve production of food grains, on the consumer end the COREPDS or "meri marzi" scheme (currently being piloted in Raipur and a few other blocks) needs to be firmed up and rolled out to cover the state. Such 'flexible service level' innovations can have a direct connect to common people's needs and buying capacity on a day-to-day basis and further strengthen the government's good intentions. Further strengthening of the tracking and monitoring mechanisms through increased IT spending, can help the state/local administrations gauge people's perceptions through 'dip stick' satisfaction surveys and access to other government schemes/services in the areas of jobs & livelihoods, healthcare and education. For this, the proposed all-India governance-cum-IT framework - **Public Distribution System Network (PDSN) architecture** needs to be adequately scoped out in terms of capacity and future requirements.
4. Integrated Operations across the Supply Chain still missing: Rice Mills, Transport Companies and Fair Price Shops (as mentioned above) do not have any significant IT deployment.	An important need for the further growth and effectiveness of the Paddy Procurement/PDS is that stakeholders/vendors such as Rice Mills, Transport Companies and FPSes are integrated with the Paddy Procurement/PDS IT planning and monitoring system. Since Paddy Procurement/PDS is a pivotal scheme, it should be made a requirement through regulation, legislation or influence, that other stakeholders adopt standard hardware/software/applications/devices that can improve the end-to-end visibility of the procurement, storage, movement and re-distribution of paddy/rice and other food grains by providing a 'dashboard view' of operations. These new/standard devices and systems/applications can help improve supply chain efficiency and build greater 'public equity' (by means of greater transparency).
5. "Storage + Paddy Procurement/PDS + FPS" Leverage Missing: Upward/Downward Integration of IT systems does not exist currently between the CGSCSC, MARKFED and FCI godowns, rice mills and FPSes. This seems to be a case of a 'missed opportunity', as it would be difficult to get a 'single view' of the supply chain or evaluate its efficiency end-to-end in 'real time'.	The extended Paddy Procurement/PDS + FPS IT system can serve as a "dual purpose" platform. For example, computerisation at FPS level can provide "Information as a service" on Health & Hygiene, Education, Employment and other citizen-centric government schemes and programmes. In this manner the FPS network can complement the services provided by Citizen Service Centres (CSCs).

Weakness/Shortfall	Suggested Corrective Action
6. IEC campaigns still not impacting mindsets: The predominant message going out is that government has set up the Paddy Procurement/PDS to provide an MSP to farmers and subsidised food grains to consumers.	IEC campaigns must aim to bring about more long term impacts such as changing mindsets and helping move the system from 'subsidy and entitlements' to a 'self-sustaining, consumer centric' market-linked ecosystem.
7. Problem of 'ghost' ration cards issued to non-deserving individuals/families	Details of BPL ration card holders must be cross-checked and verified against reliable databases such as UID/Aadhaar, Income Tax PAN etc. to weed out non-deserving cases.
8. Many FPSes not viable under current business model: Many FPSes in Chhattisgarh have not been able to sustain their operations and have shut down.	The Paddy Procurement/FPS policy and related rules need to allow for greater business viability. For example, FPS operators need to be encouraged to expand their product/services portfolio in order to be viable and sustainable; market linkages need to be expanded. Subsidies for setting up of FPSes, especially by women SHGs could be a means to plug gaps in reach of the PDS network to the poorest sections of society/remote villages. This could address asymmetry in supply chains and provide a more accurate pattern of demand. Further, market failures – such as poor quality paddy supplies or diversion of food grains meant for FPSes need to be strictly monitored and prosecuted/penalised. Greater study and analysis would be needed to arrive at the right business model and mix of goods and services to make FPSes viable and sustainable in the long run.
9. Organisational Structure still not completely transparent, Stakeholder Participation at a basic level: Long term feasibility of the Paddy Procurement/PDS supply chain may be suspect, due to the high subsidy component required to sustain operations of the CGSCSC. Since the CGSCSC operates as an internal business unit under the Min. of Food, Civil Supplies and Consumer Affairs, Govt. of CG, there is lack of transparency in operations. Further, since the 'last mile' stakeholder, that is, the	Organisational Structure and Stakeholder Participation requires inculcation of strong business processes, good organisational skills and customer orientation. From a Business Process perspective, "operational excellence can be achieved by end-to-end supply chain optimisation" and emphasis on efficiency and reliability. For example, the mandate of CGSCSC can be extended to include multiple FMCG products obtained via a transparent e-procurement portal. CGSCSC operations should be open to greater scrutiny and public participation. For example, women SHGs who are currently empowered to check the quality of the rice supplied to FPSes, should also have a say in the types of FMCG products procured and made available through the PDS-FPS network.

Weakness/Shortfall	Suggested Corrective Action
Fair Price Shops function as 'branches' of the CGSCSC, they are restricted from diversifying/changing their product range to meet emerging consumer needs.	Also, for "greater stakeholder participation", Fair Price Shop operators should be provided with better training in customer service skill-sets and marketplace management. The emphasis should be on quality, flexibility and responsiveness.
10. 'Future Proofing' of IT system for emerging needs is missing	As the Paddy Procurement/PDS network introduces synergies focused on shared and standardised technology, the administration must govern IT architecture and infrastructure at the enterprise level. Thus, some governance mechanisms will need to be introduced for a future scenario where the FPSes are also automated and have added new SKUs to their standard inventory of subsidised food grains. Data and process synergies will add more governance mechanisms to ensure integrity of information collected and to design and implement global processes. Also standardisation of the data formats and processes would be important. This has to be driven by the active leadership of various agencies/people that are working at the grassroots – CGSCSC, MARKFED, FCI, FPS salesmen and supported by NIC.

4.10 Indicative Factors for Identification of Target States

As detailed in the 'Outcomes Achieved' and 'Key Study Findings' sections, it is clear that the Chhattisgarh model of Paddy Procurement/Public Distribution System, if adapted suitably to local conditions, can benefit a number of states in their aim to improve farm productivity, reduce malnutrition and all the ills associated with it such as undernourishment, high IMR and MMR, high school dropout rates of children 6-14 years and distress migration to cities/towns in search of livelihood.

With suitable adjustments for local conditions, the Chhattisgarh model of Paddy Procurement/PDS can not only be adapted by other states, but further strengthened by procuring a range of remunerative crops from farmers for storage, processing and redistribution via the FPS network. For example, fruits and horticultural produce, milk and dairy products, FMCG goods, toiletries and personal hygiene products, mobile phone service pre-paid SIM cards and top-up recharges, as well as information, services and online application filing for important government schemes and programmes can be made available to people living in small towns and remote villages. Certainly, this will require capacity building by means of strengthening of physical infrastructure (dry and wet storage capacity, cold storage units powered by solar power etc.); business process improvement training to CGSCSC, MARKFED and FCI officers; computerisation of the 'last mile', that is, Fair Price Shops, including broadband connectivity, and customer orientation training to FPS salesmen. It may also call for a review of relevant policy guidelines to grant Fair Price Shops a 'general trade licence', a 'pharmaceuticals trade licence' etc.

States that wish to replicate the Chhattisgarh model or improve their existing 'food grain & processed food procurement-storage-redistribution' model will need to consider factors such as:

- **Proportion of population living in rural areas, small towns**: A higher proportion implies greater importance of PDS/FPS network to

reach the unserved 'bottom of the pyramid' population

- **Percentage of population below the poverty line**: district wise, block wise dispersal, livelihood patterns, per capita consumption of food grains (actual versus WHO prescribed) – A higher percentage of BPL population implies greater need to strengthen the PDS/FPS network
- **Percentage of GSDP from 'agriculture and allied activities'**: A higher percentage means a greater opportunity to expand the scope of PDS/FPS network and build an indigenous food processing industry in the state
- **Incidence/trend of distress migration due to lack of livelihood opportunities and inability to purchase staple food grains, vegetables etc.**: High distress migration rates point to the need for increasing local livelihood opportunities, strengthening food supply chain
- **Proportion of state's villages connected by 'all weather' roads, electricity and broadband**: A better connected state will allow for efficient round-the-year functioning of the farmer-procurement-FPS chain, future growth and evolution by adding new goods and information services to the overall PDS value proposition

A word of caution here – poor states may not have the required financial resources to sustain the subsidy required to run a large scale public distribution scheme, as implemented by Chhattisgarh. Therefore, states would be advised to restrict the scope of their schemes to meet the nutritional requirements of the most needy segments of their population.

Based on the criteria of Growth Rate of Gross State Domestic Product in Agriculture and Allied Sectors and Proportion of Population Below Poverty Line (BPL) by State, as presented in tables below, the states which could implement an efficient PDS or attempt to revamp and tone-up their existing PDS on priority, are Arunachal Pradesh, Assam, Bihar, Dadra & Nagar Haveli (UT), Jharkhand, Manipur, Madhya Pradesh, Odisha and Uttar Pradesh, besides Chhattisgarh itself. These criteria will help to reach not just food grains, but other nutritional supplements and useful commodities and packaged products to the most needy sections of the population in remote villages and tribal areas.

Table 4.2 - Growth Rate of Gross State Domestic Product in Agriculture and Allied Sectors at Constant 2004-05 Prices, 2005-06 to 2012-13

Sr. No.	States/UTs	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Average 2005-06 to 2012-13
1	A & Nicobar Islands	-23.35	32.53	0.65	7.65	1.05	5.79	2.07	5.41	3.98
2	Andhra Pradesh	6.12	1.97	17.38	0.76	0.21	7.29	0.78	7.13	5.21
3	Arunachal Pradesh	-2.5	9.83	12.2	-6.93	-1.34	14.18	4.21	4.08	4.22
4	Assam	23.45	2.2	7.5	11.65	19.87	19.51	5.01	9.63	12.35
5	Bihar	1.04	27.37	0.11	33.62	-2.54	31.26	20.52	17.34	16.09
6	Chandigarh	9.13	11.48	3.95	7.06	5.79	-1.84	-0.67	-	4.99
7	Chhattisgarh	19.41	9.71	26.39	2.7	15.66	26.48	14.06	10.89	15.66
8	Delhi	-3.43	1.15	-2.81	-0.65	26.76	7.07	2.47	-0.38	3.77
9	Goa	23.56	-15.99	1.53	-7.28	0.8	3.53	19.03	-	3.6
10	Gujarat	23.1	-0.73	8.73	-7.17	-0.74	21.03	6.32	-	7.22
11	Haryana	-1.81	14.15	-0.06	7.21	-1.45	5.22	8.46	2.11	4.23
12	Himachal Pradesh	6.18	-0.69	8.98	-0.93	-11.19	19.75	-5.1	8.96	3.25
13	Jammu & Kashmir	0.24	1.06	0.65	3.83	-0.47	8.36	5.94	3.05	2.83
14	Jharkhand	3.65	12.58	5.61	16.57	-6.21	4.46	3.84	5.36	5.73
15	Karnataka	9.92	-2.84	12.37	2.27	4.07	16.17	-1.95	2.3	5.29

Sr. No.	States/UTs	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Average 2005-06 to 2012-13
16	Kerala	4.98	-6.28	-1.23	1.98	-1.57	-4.57	-1.03	-	-1.1
17	Madhya Pradesh	7.04	2.35	-1.49	8.85	9.78	-0.14	17.31	13.36	7.13
18	Maharashtra	9.2	14.03	13.76	-15.45	1.02	17.75	4.58	-2.14	5.34
19	Manipur	8.86	7.59	8.35	13.9	20.33	3.76	12.61	13.68	11.13
20	Meghalaya	4.9	1.33	-0.92	4.15	2.26	1.54	1.47	2.26	2.12
21	Mizoram	1.63	0.27	14.06	12.2	9.17	2.37	6	-	6.53
22	Nagaland	2.55	0.97	0.61	7.53	2.89	5.64	4.69	4.83	3.71
23	Odisha	3.34	1.94	4.66	1.87	7.74	1.91	-4.57	16.11	4.12
24	Puducherry	-3.4	10.05	-1.34	47.82	-16.89	25.61	-8.83	63.19	14.53
25	Punjab	0.95	2.85	3.82	2.03	-0.3	1.64	2.14	-0.35	1.6
26	Rajasthan	0.31	7.51	1.62	4.19	-2.69	33.41	0.54	-	6.41
27	Sikkim	4.13	0.09	3.91	4.29	4.23	4.86	4.13	6.65	4.04
28	Tamil Nadu	13.26	13.24	-4.41	-2.29	6.35	7.47	9.51	-10.22	4.11
29	Tripura	3.21	8.1	17.18	5.66	5.2	6.74	7.41	6.02	7.44
30	Uttar Pradesh	2.34	2.42	3.51	3.8	-0.4	4.71	4.57	3.47	3.05
31	Uttarakhand	-3.22	4.66	2.09	-3.66	9.63	4.38	3.36	3.43	2.58
32	West Bengal	2.22	2.12	6.21	-2.35	6.94	-0.7	1.98	2.63	2.38
	India (National)	**5.14**	**4.16**	**5.8**	**0.09**	**0.81**	**7.94**	**3.65**	**1.91**	**3.69**

Source: Central Statistical Organisation (CSO) and Min. of Agriculture, GoI (as on 30th September 2013)

Table 4.3 - Number and Percentage of Population below poverty line by states - 2011-12 (Tendulkar Methodology)

S. No.	States	Rural		Urban		Total	
		%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)
1	Andhra Pradesh	10.96	61.80	5.81	16.98	9.20	78.78
2	Arunachal Pradesh	38.93	4.25	20.33	0.66	34.67	4.91
3	Assam	33.89	92.06	20.49	9.21	31.98	101.27
4	Bihar	34.06	320.40	31.23	37.75	33.74	358.15
5	Chhattisgarh	44.61	88.90	24.75	15.22	39.93	104.11
6	Delhi	12.92	0.50	9.84	16.46	9.91	16.96
7	Goa	6.81	0.37	4.09	0.38	5.09	0.75
8	Gujarat	21.54	75.35	10.14	26.88	16.63	102.23
9	Haryana	11.64	19.42	10.28	9.41	11.16	28.83
10	Himachal Pradesh	8.48	5.29	4.33	0.30	8.06	5.59
11	Jammu & Kashmir	11.54	10.73	7.20	2.53	10.35	13.27
12	Jharkhand	40.84	104.09	24.83	20.24	36.96	124.33
13	Karnataka	24.53	92.80	15.25	36.96	20.91	129.76
14	Kerala	9.14	15.48	4.97	8.46	7.05	23.95
15	Madhya Pradesh	35.74	190.95	21.00	43.10	31.65	234.06
16	Maharashtra	24.22	150.56	9.12	47.36	17.35	197.92
17	Manipur	38.80	7.45	32.59	2.78	36.89	10.22
18	Meghalaya	12.53	3.04	9.26	0.57	11.87	3.61
19	Mizoram	35.43	1.91	6.36	0.37	20.40	2.27
20	Nagaland	19.93	2.76	16.48	1.00	18.88	3.76
21	Odisha	35.69	126.14	17.29	12.39	32.59	138.53
22	Punjab	7.66	13.35	9.24	9.82	8.26	23.18
23	Rajasthan	16.05	84.19	10.69	18.73	14.71	102.92
24	Sikkim	9.85	0.45	3.66	0.06	8.19	0.51

S. No.	States	Rural		Urban		Total	
		%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)
25	Tamil Nadu	15.83	59.23	6.54	23.40	11.28	82.63
26	Tripura	16.53	4.49	7.42	0.75	14.05	5.24
27	Uttarakhand	11.62	8.25	10.48	3.35	11.26	11.60
28	Uttar Pradesh	30.40	479.35	26.06	118.84	29.43	598.19
29	West Bengal	22.52	141.14	14.66	43.83	19.98	184.98
30	Puducherry	17.06	0.69	6.30	0.55	9.69	1.24
31	Andaman & Nicobar Islands	1.57	0.04	0.00	0.00	1.00	0.04
32	Chandigarh	1.64	0.00	22.31	2.34	21.81	2.35
33	Dadra & Nagar Haveli	62.59	1.15	15.38	0.28	39.31	1.43
34	Daman & Diu	0.00	0.00	12.62	0.26	9.86	0.26
35	Lakshadweep	0.00	0.00	3.44	0.02	2.77	0.02
	All India	**25.70**	**2166.58**	**13.70**	**531.25**	**21.92**	**2697.83**

Source: Planning Commission of India

Notes:

1 *Population as on 1st March 2012 has been used for estimating number of persons below poverty line. (2011 Census population extrapolated)*
2 *Poverty line of Tamil Nadu has been used for Andaman and Nicobar Island.*
3 *Urban Poverty Line of Punjab has been used for both rural and urban areas of Chandigarh.*
4 *Poverty Line of Maharashtra has been used for Dadra & Nagar Haveli.*
5 *Poverty line of Goa has been used for Daman & Diu.*
6 *Poverty Line of Kerala has been used for Lakshadweep.*

4.11 Implementation Approach

Based on the current evaluation study, a set of guidelines to implement a 'model' PDS are presented below. These should necessarily be read along with the 'Implementation Strategy', 'Outcomes' and 'Study Findings' discussed in the preceding sections. In this manner it is hoped that the reader would be able to gain a comprehensive understanding of the needs, challenges faced and best practices that can be employed for rolling out an efficient, scalable and sustainable Public Distribution System/Fair Price Shop network.

Critical Success Factors for Scheme Replication: Lessons from Chhattisgarh

Based on the research and analysis conducted, some key positives emerged for the Chhattisgarh Paddy Procurement/PDS scheme. These can be borrowed by any state looking to build a PDS model from the ground up, or to improve its existing PDS network.

Table 4.4 - Major strengths of the Chhattisgarh PDS scheme

Factor	Strength/Benefit
Scheme Scope & Coverage, Enabling Policy Interventions	1. **Strengthening Visibility of the Supply Chain** The 'Dhankharidi' paddy procurement system and RFID-GPS enabled tracking has increased the confidence of stakeholders and consumers in the 'ration shops' over the last few years vis-à-vis the older, legacy system. 2. **Building greater "Social Equity"** Common people of Chhattisgarh are quite aware of their monthly entitlement to affordable food grains via the PDS/Fair Price Shop system.

Factor	Strength/Benefit
	Implementation of the Scheme has created "public value". Goods and Services are being provided. And this fact by itself is of immeasurable value. The Paddy Procurement/Public Distribution System has impacted people's lives – especially those of women, children and the youth. They are not only better nourished, but can also focus on planning for the long term, as a result of (food) security. They can seek gainful employment and can aim to get themselves and their children skilled/educated for emerging jobs and careers in the modern economy. It is estimated that the Chhattisgarh PDS makes available low priced food grains to nearly 90% of the state's population. The Govt. of Chhattisgarh had plans to increase coverage from 3.5 million households to 4.2 million households at a financial cost of Rupees 2100 crore during FY 2013-14.
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	**1. 'What gets measured, gets done'** There is a need to accurately track the storage and re-distribution of subsidised food grains via FPSes on a daily basis, to plug loopholes and reduce scope for corruption by way of diversion. COREPDS is a move in this direction and it needs to be extended to cover all areas in the state and strengthened with appropriate ICT systems for tracking and monitoring of food grain inventories with Fair Price Shops. **2. Objectives of Scheme publicised widely**: 'Public good'/'Equity' reduces malnutrition, illnesses, ignorance (by way of education), suffering and despair. As this increasingly becomes successful, not only will the people benefit, but also the state's economy. So, it is imperative to periodically measure improvement in nutritional levels, school enrolments, reduced dropout rates, distress migration etc. A more aware and informed public will adopt and take ownership of scheme enthusiastically, making it self-sustaining.
Capacity Building and IEC Campaigns	**1. Capacity Building at State and District Levels**: Back-end tracking of paddy procurement operations and food grain supply chain at a macro level has resulted in visibility to state and district level planners and administrators. This can help in better planning of storage, transportation facilities and reduce wastage/spoilage during transit. **2. IEC Campaigns**: Extensive use of hoardings, billboards, ads in local newspapers and briefings to women SHGs have been able to bring about a good level of visibility and awareness about the Paddy Procurement/PDS amongst farmers, rice millers, FPS salesmen, BPL/APL card holders as well as members of women SHGs.
Financial Viability	**1. Efficient process execution & monitoring of leakages**: The Paddy Procurement/PDS system has allowed the state and district administrations to improve efficiency in procurement, transportation and distribution of commodities. It has helped to considerably reduce the leakages which were earlier rampant and the bane of the PDS-FPS network.
Organisational Structure and	1. **Food, Civil Supplies and Consumer Affairs organisation structure in place**: The Paddy Procurement/PDS has allowed Chhattisgarh to put in place a system of automating the procurement and distribution of food

Factor	Strength/Benefit
Stakeholder Participation	grains/essential commodities, using the CGSCSC, MARKFED and FCI as supply chain agencies across the state and in rural blocks/wards of each district.
Technology Interventions	1. **Innovative use of Information and Communication Technologies (ICTs)**: The Paddy Procurement/PDS network has enabled computerisation of the basic procurement, transportation and re-distribution system. To effectively utilise the Paddy Procurement/PDS network, adequate processing and storage capacities need to be provisioned in the back-end. This would mean making adequate provisions in the State Data Centre (SDC) and robust connectivity through the State Wide Area Network (SWAN), to support nodes installed at procurement centres, rice mills and Fair Price Shops (with increasing roll-out of COREPDS). Capabilities for System Integration, already created successfully by NIC, should also be enhanced to meet emerging requirements and to support increasing deployment of handheld PoS devices and Tablets, in future.

Salient Features of a Robust Public Distribution Programme: Replication Guidelines

With the insights gained from the research and analysis of the Chhattisgarh Paddy Procurement and PDS Scheme, and analysis of similar schemes run in other leading states such as Tamil Nadu and Gujarat, a 'model practice' can be proposed for replication by any other state of India. The model practice suggested here is an attempt to amalgamate the best practices encountered in the Karimnagar Paddy Procurement Scheme in Andhra Pradesh, Sugarcane Information System of Uttar Pradesh, and the COREPDS Pilot Scheme in Chhattisgarh. Besides this a review of PDS schemes run by other states such as Himachal Pradesh, Karnataka, Maharashtra and Meghalaya has also been attempted.

The proposed replication guidelines, thus arrived at, are listed out below for the benefit of the reader:

Step 1: Scoping and Planning for Adequate Reach and Coverage of Public Distribution System, Customer-Friendly Service and Portability of Benefits

As stated in Section 4.9 at S. No. 2, the coverage and reach of a 'model' PDS/FPS network will need to be planned to ensure that the gaps in supply chain experienced by poor residents living in remote villages are adequately addressed, round the year in order to provide effective food-grain security to citizens across the state, especially those residing in remote areas. Thus, robust 'last mile' service delivery systems, with strong customer orientation are essential. For example, planning for adequate storage capacities, GPS tracking of supply trucks, and regular training and monitoring of FPS operators need to be integrated into the system from 'day one'. These issues are examined in more detail in the following sections.

Key Features to Improve the Functioning of PDS/FPS Network in States across India

Along with the positive features of the Chhattisgarh Paddy Procurement/PDS scheme and the corrective actions suggested above, the following key features should form part of a modern supply chain for food grains and essential commodities for purchase and consumption by members of the public:

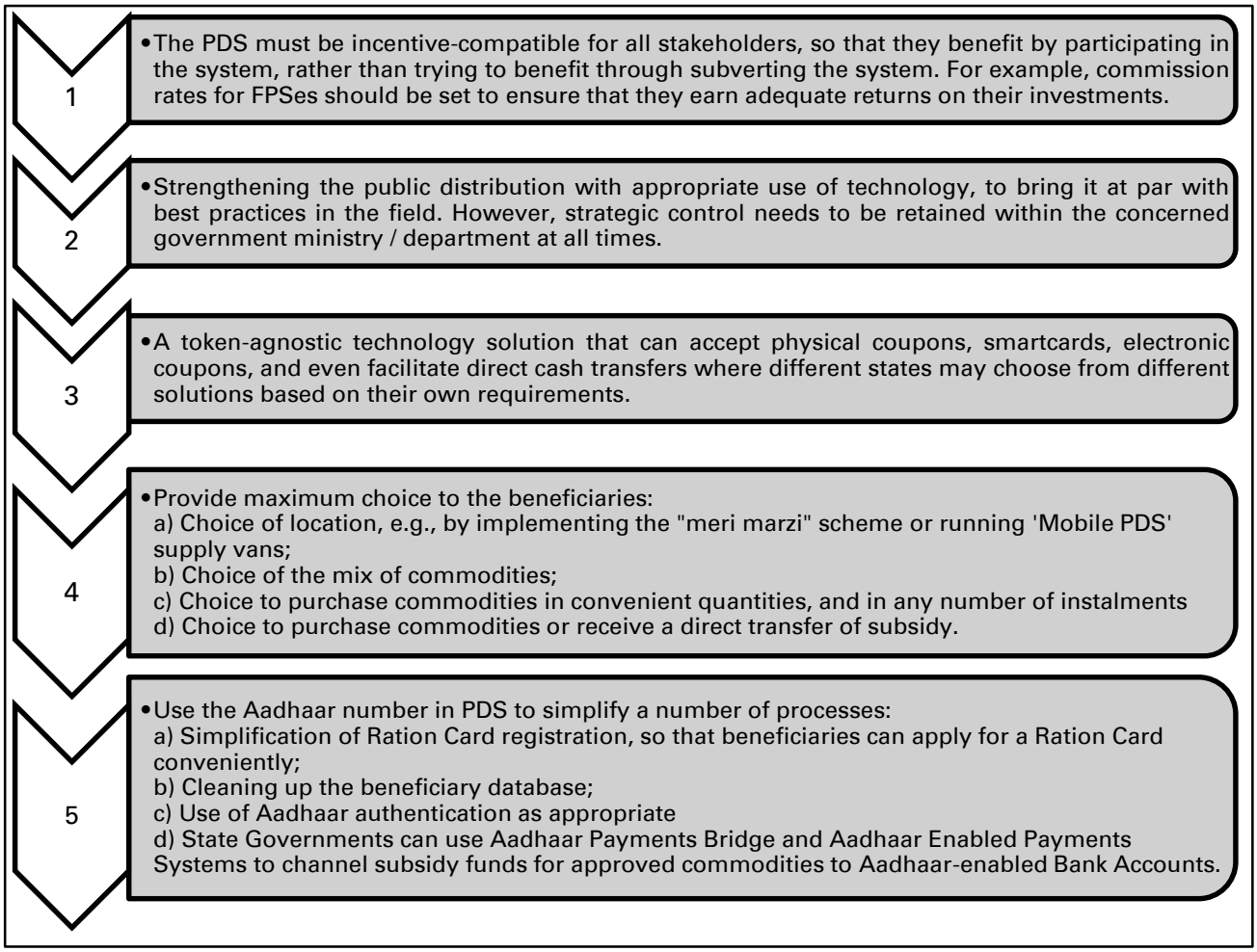


Figure 4.10 – Key proposed features for PDS scheme

Keeping in view the recently implemented National Food Security Act it is imperative to undertake these reforms at the earliest in states across India.

Step 2: Integrated Operations across the Supply Chain; Robust Governance and Quality Assurance System enabled by Technology

An important need for the further growth and effectiveness of the Paddy Procurement/PDS is that stakeholders/vendors such as Rice Mills, Transport Companies and FPSes are integrated with the Paddy Procurement/PDS IT planning and monitoring system as also stated in Section 4.9, S. Nos. 4, 5 and 9. Since Paddy Procurement/PDS is a pivotal scheme, it should be made a requirement through regulation, legislation or influence, that other stakeholders adopt standard hardware/software/applications/devices that can improve the end-to-end visibility of the procurement, storage, movement and re-distribution of paddy/rice and other food grains by providing a 'dashboard view' of operations. These new/standard devices and systems/applications can help improve supply chain efficiency and build greater 'public equity' (by means of greater transparency).

FPS operations are not highly visible. Hence there is a need to move the scheme benefits to the 'next level' through the extension of IT/computerisation to the 'last mile', that is, Fair Price Shops, e.g. through the COREPDS or "meri marzi" scheme.

Standardised protocols and inter-linked ICT systems can help to monitor malpractices such as poor quality paddy supplies or diversion of food grains meant for FPSes and aid in quick prosecution of the erring party/ies.

Step 3: Adequate Automation/ICT Spending to Weed Out Undeserving Consumers, Achieve Accurate Targeting of Benefits

As recommended by the Govt. of India 'Task Force on IT Strategy for PDS and an Implementable Solution for the Direct Transfer of Subsidy for PDS Food and Kerosene', the spend on information technology as a percentage of total PDS budget must be increased to improve tracking, monitoring, reporting and feedback. This is also in line with various pronouncements made by the Hon'ble Supreme Court, in order to prevent diversion of PDS food grains for black-marketing etc.

To effectively manage the complex, large-scale, and mission-critical nature of PDS operations, it has been proposed that a dedicated professional institution is necessary to design and operate the solution centrally. Thus, the GoI Task Force has recommended the setting up of a National Information Utility called the Public Distribution System Network (PDSN), which operates as a technology back-office and central system for MoCAFPD, MoPNG, and state governments. It aims to provide support in IT-intensive areas such as development, operations and maintenance of technology, supply chain management, transparency portal, and electronic payments. It will also provide integration with the IT systems of other key stakeholders (vendors/suppliers/partners) and other e-governance systems as they are designed over time.

Technology/public domain databases such as Aadhaar/UIDAI can be used to prevent misuse of white (BPL) ration cards, check and weed out 'ghost' ration cards. This would also make it easy to apply for/transfer a Ration Card in case of transfer/change of residence. This will not only ensure that PDS benefits are restricted to deserving individuals and families, but also that genuine beneficiaries are not excluded.

Best Practices from States using IT in Procurement and PDS

A number of initiatives for computerising PDS operations, ranging from use of smart cards for beneficiaries in an experimental way in Haryana and Chandigarh; use of Global Positioning System (GPS) in Tamil Nadu, Chhattisgarh and Delhi; bar coded bags in Gujarat and SMS alerts on grain availability in UP and MP have been piloted in the past 2 years. However, each of these initiatives targets a part of the system and are not comprehensive and replicable at the all India level. The Central Government initiated a computerisation project, which envisages tracking of food grain bags using barcodes from FCI godown up to the Fair Price Shop in Stage 1 and beneficiary-related transactions in Stage 2. It is important to fast track the implementation of this project and involves state governments in executing the same expeditiously. A comprehensive computerisation of the PDS network, starting from the allocation of grain to the final delivery to the targeted beneficiary will go a long way in plugging diversion of grain, bogus ration cards and delivery of poor quality food grains to beneficiaries.

As an alternative to the existing PDS the country may switch over to the use of smart cards, which simply means that the food subsidy may be directly transferred to the beneficiaries instead of to the owners of PDS stores. This in turn gives people an opportunity to go to any store of their choice and use their smart cards or food coupons to buy food. In fact with the biometric identification system, people will have the freedom to migrate to any part of the country without the fear of losing their food rations. Since under this system the poor will be paying the stores the same price for food grains as other customers the shopkeeper, including PDS stores, will have no incentive in selling adulterated grain to the poor. This will finally lead to a system where there are no leakages and distortions of food grains and will create incentives for PDS stores to be more efficient.

A summary of the best practices in PDS automation/computerisation as reported by some leading states is provided below:

Andhra Pradesh

- Digitisation of ration card database of all the beneficiaries has been completed.

- Aadhaar enrolment and verification has been on.
- State Civil Supplies Department decided to implement a Smart Card based solution in all Fair Price Shops (FPSes) covering entire Andhra Pradesh state in a phased manner.
- As a pilot, Smart Cards were issued to the beneficiaries covering all the 36 Fair Price Shops in Maheswaram Mandal in Rangareddy District. Theses 36 FPSes were also equipped with PoS terminals for the purpose of commodity distribution.
- A grievance redressal module was developed and put in place to log calls from citizens.
- A pilot was been undertaken in Krishna and Nellore districts for monitoring of transportation of essential commodities by using GPS from MLS point to FPS. This is for Stage II transportation. After the pilot, the scheme was scheduled to be extended to other districts.

Case Study: Karimnagar Paddy Procurement Scheme, Andhra Pradesh

In November 2012, the Govt. of Andhra Pradesh launched a decentralised paddy procurement market intervention based on the success of procurement through women SHGs by the Civil Supplies Department.

Table 4.5 - Karimnagar Paddy Procurement: Kharif 2013-14 by 308 rice mills = 4,08,626 metric tonnes

Boiled Rice Mills:	257
Raw Rice Mills:	51
Total	**308**
PPCs	
IKP	301
PACS	288
GCC	3
Total	**592**

Source: Karimnagar Official Website, 28th February 2014

Earlier, the paddy procured by the State government was sent to the rice mills and the rice stored in the Food Corporation of India (FCI) godowns and later supplied to the public distribution system (PDS) shops. Now, the Andhra Pradesh Civil Supplies Corporation will procure paddy directly from farmers, to meet the needs of the Public Distribution System (PDS) to white/yellow (BPL) ration card-holders and social welfare hostels.

The programme was formally launched by Andhra Pradesh Minister for Civil Supplies D. Sridhar Babu. Mr. Babu said that the state requires about 40 lac metric tonnes (MT) of rice per annum for the PDS scheme. In order to achieve self-reliance and economise on transport and godown space, the govt. has decided to procure the required quantity of 40 lac MT of rice from the farmers directly and distribute to PDS consumers in the state.

Chhattisgarh

- **Unified Ration Card database**: New bar-coded Ration Cards have been issued. The maintenance of the ration cards database is done through a web based module.
- **Automated Allotment**: Chhattisgarh has an FPS database with attached ration card information. This has enabled automated shop-wise allotment by entering per card parameters every month on a web-based application.
- **De-privatisation of Fair Price Shops**: All FPSes in Chhattisgarh were de-privatised through the New Control Order on 23rd December 2004. Further, the state government advanced a soft loan of Rs. 75,000/- to each FPS, repayable in EMIs over 20 years, and one month's stock on credit basis. This strategy is especially useful in expanding reach of the PDS to remote villages and tribal areas.
- **Chhattisgarh State Civil Supplies Corporation (CGSCSC) Modernisation and Implementation of Distribution Centre Module**: The state government provided a credit of Rs. 500 crore to CGSCSC for modernisation of infrastructure (storage facilities). Further, a Distribution Centre Module was implemented at 120 warehouses of 108 distribution centres. The stocks and sales figures of previous month of all the FPSes are entered into this module and the

actual amount of PDS commodities to be issued to FPS is calculated by this web based software and delivery order and truck challans are issued thereafter. Receipts and movement of commodities between distribution centres is also done through this application. Thus stock position at any point is available on web.

- **Jan Bhagidari**: This web site has all information relating to PDS including lists of all Ration Card holders, list of FPS, details of lifting and sales of PDS commodities by FPS etc.
  Whenever PDS commodities are dispatched to FPS from the warehouse, an e-mail message and an SMS is sent to all the e-mail IDs and mobile numbers registered for that FPS.
- **Call-Centre with a Toll Free number** is in place to get necessary information about food department and lodging of complaints. Complaints are monitored at all levels though the system.
- **Dashboard Reports** like ration card holder details, FPS details, FPS-wise allotment and lifting details, rice procurement details and complaints lodged and their status are generated by system on web, which are accessible to the public.

Case Study: COREPDS or "Meri Marzi" Scheme

The Centralised Online Real-time Electronic PDS or COREPDS is functional in 300 FPSes in Raipur, Durg and Rajnandgaon cities and Mahasamund block. COREPDS presently benefits 3 lac families. On an average 20 transactions are conducted per minute and an aggregate of 4 lac transactions per month are conducted. Live status updates are posted to http://cg.nic.in/pdsonline/corepds.

The COREPDS-enabled "meri marzi" scheme (computerisation of FPSes through PoS terminals) has helped beneficiaries by allowing them portability of choice (option to buy their quota of food commodities from any FPS), reduce multiple trips (due to non-availability of commodities at one FPS) and transparency in obtaining service (mechanical verification via Smart Card/biometrics and printed receipts for BPL beneficiaries).

APL beneficiaries are also enabled through SMS-based alert system. These measures have helped to substantially reduce the pilferage/diversion of FPS commodities into the open market and also forced FPS operators to improve customer service levels.

As of early 2014 COREPDS has been extended to cover nine districts (including Bhilai, Bilaspur, Dhamtari, Bastar, Korya and Korba in the urban areas. Rural areas will be covered post 2014 general elections and the full state is to be covered by FY 2015-16.

COREPDS Objectives

1) To reduce diversion of food grains by mechanical authentication at the time of service delivery and capture of every transaction data at FPS.
2) To make the FPS accountable to ration card holders, by providing choice to the beneficiaries.
3) To improve service delivery by incentivising better performance and weeding out non-performing FPSes.

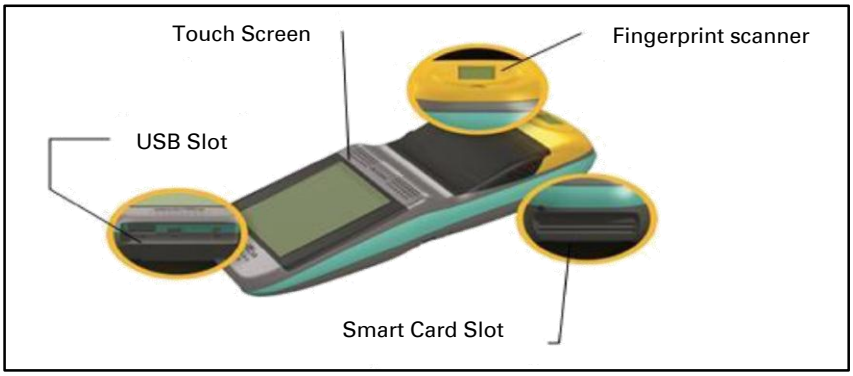


Figure 4.11 - PoS Handheld Device Used by Chhattisgarh COREPDS Pilot

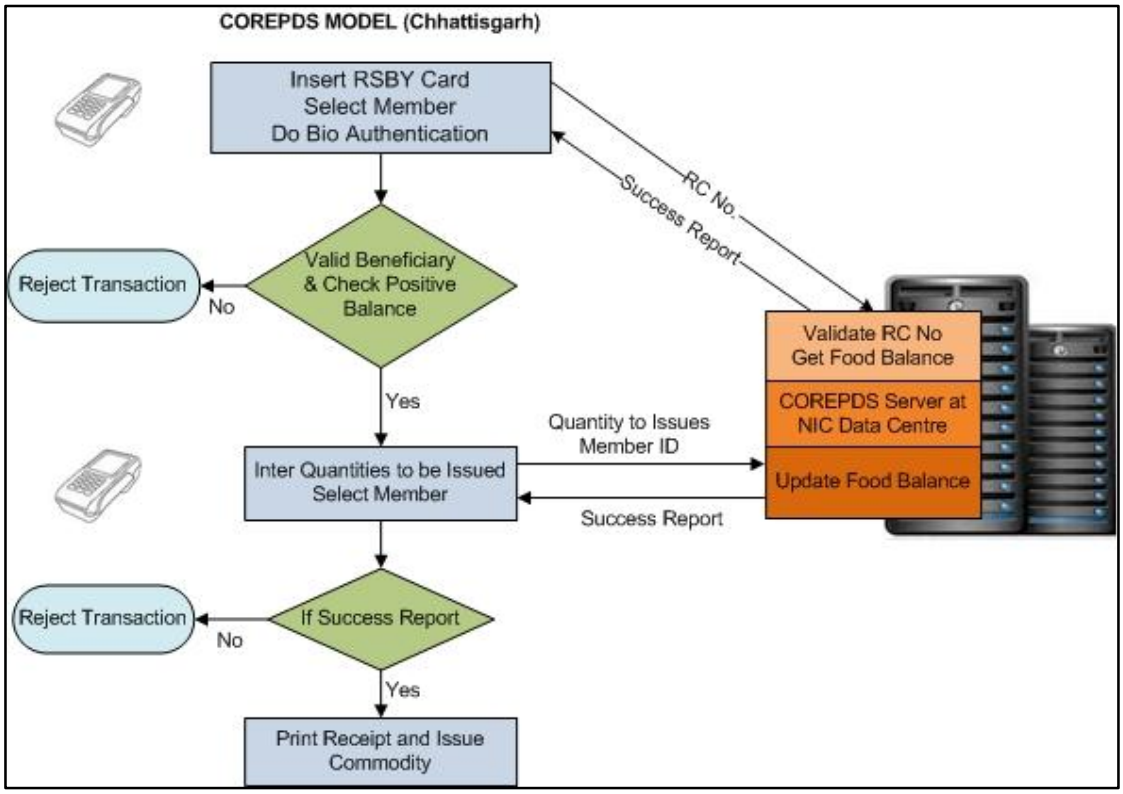


Figure 4.12 - COREPDS Workflow

COREPDS Conventions & Rules, Unique Features and Benefits

Conventions:

- All sales transactions at the FPS to be recorded through PoS device only, to ensure physical verification of distribution.
- Monthly sales statement of any FPS to be generated only from the server, for the purpose of calculating entitlements for next month.
- All stock receipts to be acknowledged by FPS through PoS device only, along with physical verification of receipts.

Unique Features and Benefits:

- PoS device works on mobile GPRS connectivity, in both online as well as offline mode.
- The PoS device employs a step-by-step, menu driven user friendly interface for ease of operation.
- Portability or "Meri Marzi" - Beneficiary has the right to pick up her rations from the shop of her choice, thus introducing competition among FPSes for market share of RC holders (customers).
- Negotiating position of the beneficiary vis-à-vis FPS is reversed with beneficiary getting a printed receipt for cash paid for purchases.

- **Convergence with RSBY**: The Universal Health Insurance scheme of Govt. of Chhattisgarh proposes to cover every family in the state by issuing a biometric verification-enabled RSBY smart card. COREPDS allows the RSBY Smart Card to double up as a Smart Ration Card, by including a PDS partition through suitable modification of the KMS. The PDS application is also loaded on the RSBY Smart Card at the time of enrolment of a family. Thus, it is for the first time that a successful experiment has been conducted in the country that provides for synthesis between the efforts of two departments of the government, to provide services to common beneficiaries through the same instrument.

Gujarat

- A comprehensive application form was prescribed for issuance of bar coded Ration Card in lieu of old/legacy Rations Cards.
- Photograph and Biometric details of at least one family member of the card holder at the time of issuance of Bar Coded Ration Cards were carried out initially.
- Delivery of food grains through bio-metric based bar coded coupon system was started on a pilot basis in village Moriya (Banaskantha) in April 2011.
- Complete computerisation process for allocation and distribution of essential commodities to FPS in place by second half of 2011.

Karnataka

- The data of all families falling within the PDS has been computerised. In addition to the particulars like name, gender, income and photographs of the beneficiaries, the fingerprint bio-metrics of all the beneficiary families have been captured.
- An exercise to identify ineligible ration cards and improve the database was conducted.
- Computerisation of the Taluka offices and godowns and connecting the systems to the Civil Supplies department database was to be undertaken.
- Action was initiated to set-up electronic weighbridges in all godowns and link them to the state and FCI networks.
- UID project was taken up on pilot basis in two districts of the state. On completion of the UID project in all districts of the State, UID numbers of the beneficiaries were to be incorporated into the beneficiary database.
- Panchayats process the beneficiary data and manage the distribution system using the broadband connections provided to them. In this manner Village Panchayats in the state were used to fix problems with the beneficiary database.
- The ration card beneficiary data was transferred to the Rural Development and Panchayat Raj departments for access by the panchayats.

Maharashtra

- The state undertook a pilot project of ePDS in Satara district, which involved linkages with UIDAI and an end-to-end solution of PDS from allocation to distribution of food grains to beneficiaries.
- The proposed application software has five modules, viz., Smart Card Management, FPS Management, Supply Chain Management, Back Office Application and Control & Monitoring.
- Composite form for 'Know Your Resident' (KYR) data and KYR+ were finalised.
- Integration software for KYR and KYR+ was also finalised in consultation with representatives of UIDAI at the state level.
- For the state PDS application software, a Gap Analysis was conducted in consultation with STPI and NIC, so as to customise the software application already developed by the NIC team for the state.

Meghalaya

- The Department of Food and Consumer Affairs launched a website, namely, http://megfcsca.gov.in and activated the online submission of price reports with effect from April 2010. Data is available at http://www.fcainfoweb.nic.in/pms.
- A software application to automate the workflow related to the process of issue of a Ration Card was developed by NIC.
- Deputy Commissioner, East Khasi Hills

successfully initiated the implementation of a computerised APL Family Identity (FI) Card for the consumers of entire Greater Shillong. Database entry and distribution of computerised FI Cards in Greater Shillong area was completed.

- Other Districts and Sub-Divisions were also being covered so that project work throughout the state could be completed.
- Bar-coded coupon system software application was developed by NIC Meghalaya to ensure delivery of food grains to all AAY beneficiaries completed and printed coupons dispatched to the districts and sub-divisions.
- DARPG, Govt. of India sanctioned the cost of the PDS Management System project, which was Rs. 43 lac. The project was entrusted to NIC and the Supply Office of East Khasi Hills District Shillong was selected as the pilot site for implementation of this project.

Tamil Nadu

- Allotment of Essential Commodities to FPS is being made through Online System since December 2008. Allotment details are put up on website for public scrutiny at www.consumer.tn.gov.in. Online allotment system is being used by all Taluka Supply Officers. Data from this portal is made available to public through SMS.
- It was decided by TN Government to utilise the biometric database of citizens of Tamil Nadu, which is available with Unique Identification Authority of India/Registrar of India (Census) for issue/verification of Ration Cards.
- Currently, ration cards are being issued through online application software at District level.
- Online billing machines have been installed in about 1,597 shops/kerosene bunks in the state. All fair price shops have been equipped with Electronic Billing Machines.
- Vehicles carrying TPDS food grains were fitted with 'Global Positioning System (GPS)' for monitoring movement of food grains from FCI to Tamil Nadu Civil Supplies Corporation (TNCSC) godowns, to ensure the food grains reach the TNCSC godown without diversion or pilferage enroute.
- Movement of commodities from TNCSC godowns to FPS is tracked through a GSM based SIM card in mobile phones carried by a movement assistant.
- A few FPSes in Chennai city were also enabled with closed circuit TV (CCTV) monitoring on a trial basis.

Uttar Pradesh

Case Study: Sugarcane Information System

India is one of the leading sugarcane producers of the world and Uttar Pradesh is at the forefront of sugar production in the country. The Sugarcane Information System (SIS) is an e-governance project serving nearly 30 lac sugarcane growers (farmers) selling produce worth Rs. 21,000 crore to 125 sugar mills in Uttar Pradesh, managed by the Sugarcane Department of the state.

Objectives of the SIS: Marketing of the sugarcane crop by harnessing information technology to eliminate middlemen; Provide timely and appropriate information to 30 lac sugarcane growers to get rid of middlemen; Put in place a reliable, robust, quick and cost-effective communication system between all stakeholders – farmers/sugarcane cooperatives, sugar mills and Sugarcane Dept.; Provide complete transparency on all transactions/interactions between sugarcane farmers and sugar mills.

The SIS acts as a link between sugar mills and farmers by facilitating interactions through three tools:

a. **Website – one for each of the 125 sugar mills**
   To provide cane development & marketing related information to cane growers of the state websites with full accuracy & transparency, 116 sugar mills of the state have developed their websites. These enable all the cane growers, to have full access of all the information regarding cane survey, supply ticket issuance, weighment, payment and cane development, and thereby saving time and expenditure. The factory wise details of the website are also there.

Figure 4.13 - Uttar Pradesh Sugarcane Development Department Website

b. Short Messaging Service (SMS) and Query (SMS)

This is the biggest rural messaging system of the rural India. Under this system, the farmers having mobile numbers registered with their sugar mills, regularly get information regarding survey, issue of supply tickets, weighment, payment and other developmental activities. Farmers not having registration of their mobile numbers with sugar mills or having changed their previous mobile numbers, can register their new mobile numbers by contacting respective sugar mill or cane development society.

Figure 4.14 - SMS Query System for Sugarcane Growers (Farmers)

c. Interactive Voice Response System (IVRS)

By dialling the IVRS number given by sugar mills under this system, a farmer can get the information regarding cane survey, issuance of supply tickets, calendar, weighment and cane price payment etc. In U.P. 116 sugar mills are running this system successfully.

Figure 4.15 - Interactive Voice Response System (IVRS) for the sugarcane Growers (Farmers)

In addition, handheld computers are provided at each of the 7,000 purchase centres. The three kinds of services are provided free of cost to all farmers.

It is estimated that during 2009-10 and 2010-11, SIS resulted in an annual profit of Rs. 850 crore to farmers and Rs. 700 crore to sugar mills. SIS won the Gold Award at the 15th National Conference on e-Governance in 2012.

The case studies of Karimnagar (Andhra Pradesh), COREPDS (Chhattisgarh) and Sugarcane Information System (Uttar Pradesh) specifically provide instances of IT tools that can serve to strengthen a state's food grain procurement-public distribution system. For example, Karimnagar represents a model where the state does not have to be dependent on a large, federal organisation for the procurement and timely supply of food grains to Fair Price Shops (thereby saving time and money to the exchequer); Chhattisgarh ensures remunerative prices and timely payments to farmers, minimisation of pilferage and consumer-friendly shopping; similarly, the SIS in Uttar Pradesh effectively employs the web, IVRS and SMS technologies as tools to ensure increased transparency and convenience to the large community of cane growers (resulting in an efficient, viable and stakeholder-friendly agri-marketing ecosystem).

Step 4: Sustained, focused IEC campaign to strengthen awareness, change mindsets

As mentioned in Section 4.9 at S. No. 6 a focused and sustained IEC effort should be run to complement the launch of PDS operations, in order to build awareness levels amongst consumers, improve customer orientation amongst officials and staff of the concerned government departments/agencies. Another key objective of the IEC campaign should be to ensure adequate coverage the target BPL population through creation of awareness about scheme benefits and their rights as consumers; to increase participation of women Self Help Groups (SHGs), rural and tribal communities. Eventually, the state must aspire to improve the long-term viability of the PDS by evolving from a 'subsidy and entitlements' mindset into a 'sustainable, consumer-centric' market-linked ecosystem.

Further, the visibility and market promotion drive should aim to promote linkages and tie-ups between FPS operators, village cooperative societies and women SHGs on the one hand, with handloom and handicraft agencies, FMCG and consumer durables firms, cosmetics and OTC drug firms, telecom service providers and other supplier organisations on the other.

FPS operations are not highly visible. Hence, there is a need to use IEC campaigns to create a positive momentum amongst stakeholders and beneficiaries, especially by highlighting the use of IT/computerisation at Fair Price Shop level to provide enhanced benefits and flexibility to consumers, e.g. through the COREPDS or "meri marzi" scheme.

Step 5: Customer-centric, market-linked business model to make the FPS network viable and self-sustaining

By increasing the variety of goods/products sold through FPSes, e.g., through stocking and sale of 'high demand' FMCG goods, mobile recharge cards and as a resource centre to provide information about govt. services/schemes etc., the FPS can not only meet the demands of local consumers for food grains and essential commodities, but also double up as a resource centre. This would help to supplement the reach of CSCs.

The commission payable per quintal of food grain sold should be reviewed at regular intervals, say, once every year, to maintain it at sustainable levels for the Scheme, yet provide a fair Return on Investment to the FPS operator, village cooperative society or women's SHG.

The mandate of CGSCSC can be extended to include multiple FMCG products obtained via a transparent e-procurement portal.

Also, for "greater stakeholder participation", Fair Price Shop operators should be provided with better training in customer service skill-sets and marketplace management. The emphasis should be on quality, flexibility and responsiveness.

'As-is' Product/SKU Range in PDS Chhattisgarh and other States of India

Food grains/Edible Items
1) Wheat and/or Rice
2) Coarse grains
3) Sugar
4) Iodised salt
5) Pulses

+ Fuel for Cooking
Kerosene

'As-is' PDS Structure in Chhattisgarh and other States of India

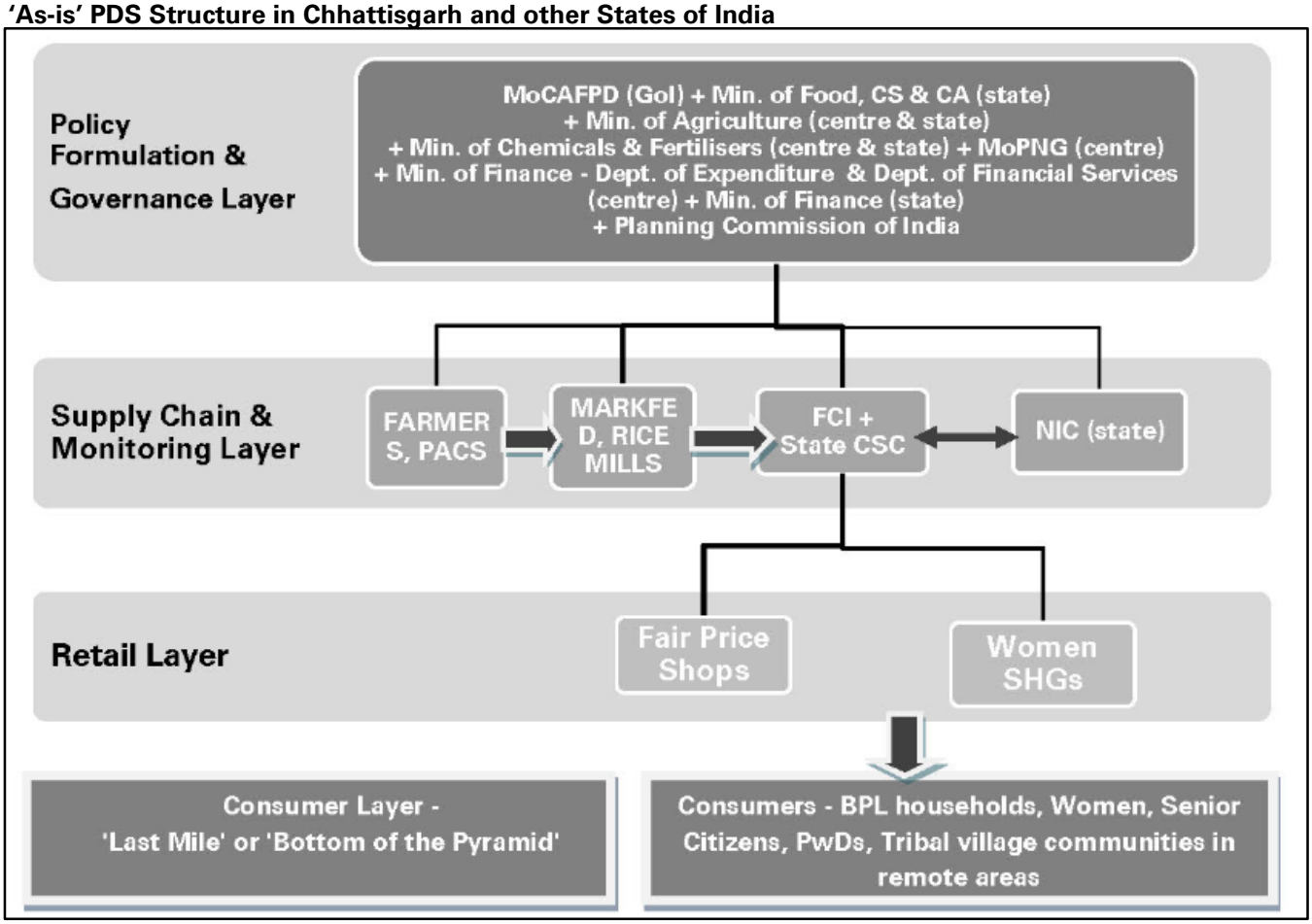


Figure 4.16 - 'As-is' PDS Structure

'Proposed' Product/SKU Range in PDS Chhattisgarh and other States of India

Agricultural Inputs (farmers only)
Seeds, fertilisers and pesticides subsidised rates

+ Food grains/Edible Items
1) Wheat and/or Rice
2) Coarse grains
3) Sugar
4) Iodised salt
5) Pulses and/or Vegetables and/or Eggs and/or Dried fish and/or Fruits & Horticultural products
6) Chlorine tablets (for drinking water purification, esp. during monsoon months)
7) Essential toiletries and personal hygiene products
8) Select FMCG products and Consumer Durables (water filters etc.)

+ Fuel & Stoves for Cooking
Kerosene, Solar Lamps, Solar Cookers etc.

+ Information/Online Application Filing for Govt. Schemes & Services (to supplement reach of CSCs)

+ Pre-paid Mobile Telephony Service SIM cards and re-charge coupons

'Proposed' Model PDS Structure in Chhattisgarh and other States of India

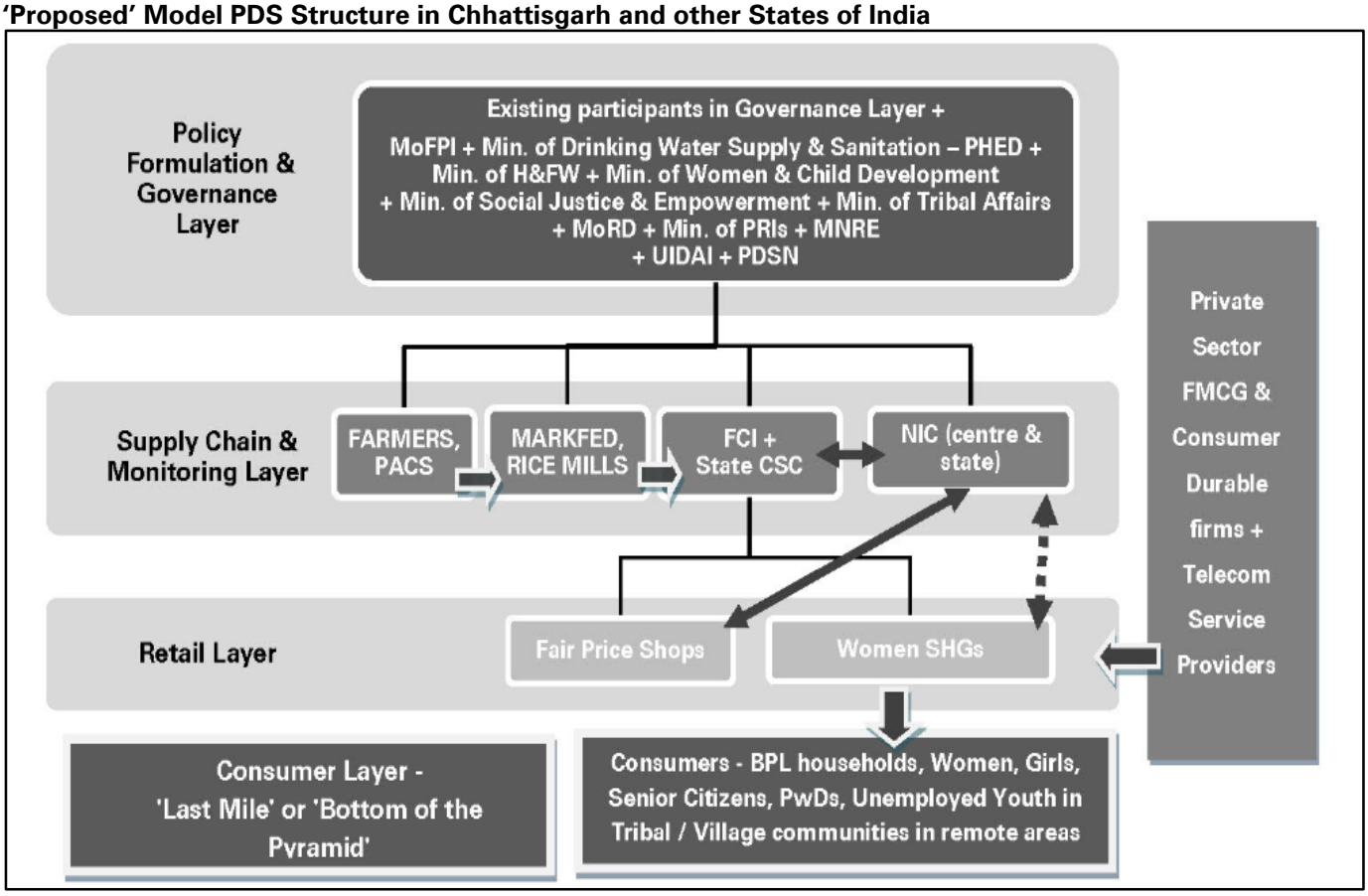


Figure 4.17 - 'Proposed' Model PDS Structure

Step 6: Periodic Review and Monitoring of Scheme Goals, Objectives & Scope to address Emerging/ Latent Beneficiary Needs

A comprehensive periodic review of the PDS scheme scope and objectives should be undertaken by the state. The objective should be to understand and address emerging needs of the target population, changing demand patterns, funding & innovation needs, policy interventions, legal framework, ICT framework etc. For example, Govt. of Chhattisgarh provides soft loans of Rs. 75,000 to set up an FPS, repayable in EMIs over 20 years to women SHGs. To strengthen this further, some business skills training should be provided to village cooperative society members/women SHG members.

However, while the Public Distribution Scheme should aim to provide adequate quantities of subsidised food grains to the state's BPL population, yet not become a 'vote catching' entity for the executive, subsidised through increased sale of liquor and tobacco products. In case of the latter scenario, the gains made in terms of improved nutrition, better healthcare and educational outcomes can get substantially impacted in the long term. This may lead to set-backs such as increased lifestyle diseases and higher spending on healthcare, medicines and rehabilitation. In fact, new and emerging needs of the target population, develop appropriate business models, integrate into PDS-FPS network operations. Thus, states that wish to replicate/upgrade their own PDS can borrow from the experiences of Chhattisgarh, Tamil Nadu, Uttar Pradesh and other states to develop their own 'model' practice by incorporating the most suitable features to cater to local needs. An outline of such a **Proposed 'Model' PDS Implementation Approach** is given below. However, it must be cautioned that these steps are to be considered in the context of the specific socio-economic conditions prevailing in the target state.

Overview of Proposed 'Model' PDS Implementation Approach

Figure 4.18 – Overview of proposed replication guidelines

Key Processes and Indicative Timelines

The Govt. of India/Planning Commission of India Task Force guidelines for COREPDS implementation were issued in October 2011. These guidelines have been already mentioned Section 4.11, Replication Guideline Step No.1 above ('Scoping and Planning for Adequate Reach and Coverage of Public Distribution System, Customer-Friendly Service and Portability of Benefits').

Chhattisgarh is the first state in India to implement COREPDS. As explained earlier, the scheme will be fully rolled out across the state in approximately three years - 2012-13 to 2015-16.

This time-frame (36 months, including software development & testing, pilot phase and full roll-out) can be used as an indicator for planning and implementation of COREPDS in any other state, selected as per the criteria specified earlier.

These timelines are indicative timelines based on the interactions with the stakeholders involved in the initiative and secondary researches; the actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city. The indicative timeline may also vary depending on political and administrative will of policy makers and implementers.

Table 4.6 – Indicative Timelines

S. No.	Key Phase/Implementation Step	Indicative Timeline
1.	**Software Development & Testing, Pilot in 2-3 Districts** (select urban areas and rural blocks)	12 to 18 months
2.	**Implementation across state**: Implement and consolidate in urban areas, follow up with extension to rural blocks	18 to 24 months
3.	**IEC campaigns**: To inform beneficiaries about their eligibility under the scheme and other long term benefits; enrol women SHGs to run FPSes	Ongoing, perennial activity to increase awareness, help improve consumer satisfaction levels, improve FPS viability and participation in PDS by common people and business partners

5 – Removal of Encroachments of Structures of Different Religions while Maintaining Communal Harmony in Jabalpur, Madhya Pradesh

The problems created by religious encroachments on public places especially on roads are irritants for government as well as local citizens. Yet the sensitivity of the issue has let it escape for past many years. In 2005 after the order given by Madhya Pradesh High Court, the Jabalpur district administration was given the responsibility of removing all religious encroachment in the Jabalpur City. Laden with this activity the Jabalpur administration under the leadership of Mr. Sanjay Dubey, IAS, collector of Jabalpur in 2005, formalised a strategy for this initiative execution.

5.1 Initiative Objectives

The Jabalpur administration has laid down certain objectives on the initiative as per following details: [2]

a) Removal of encroachments to free up the valuable public land
b) To control the tendency of mischievous section of society from encroaching government land through religious activities and people sentiments.
c) To carry out the development work that has been adversely impacted due to such encroachments and illegal constructions activities.

The objectives were formed with view of obliging the High Court Order, the development and beautification of city.

5.2 Background: Rationale behind the Initiative

The problem of religious encroachment is persistent in every part of India, especially road encroachments that create huge traffic problems for commuters, leading to traffic snarls and increase in number of accidents. In the PIL filed in the year 2005, grievance has been made that unauthorised religious structures have been illegally constructed on public lands including public roads within the municipal limits of Jabalpur. Madhya Pradesh High Court in 2005 gave order to remove all such religious encroachments in the city of Jabalpur with due respect and maintaining communal harmony.

5.3 Key Factors leading to Initiative

The major factors that led to the initiative has been related to the concerns been created w.r.t. traffic congestion at these sites and also the ruling from the MP High Court that ordered to remove all such religions encroachments in the city. During our survey findings, it was corroborated with the view points of the general public that there was a high possibility of creating communal disharmony on account of such encroachments at the public sites which were linked to one community or the other. Therefore, the ruling that came into effect in response to the PIL filed by Mr Satish Kumar Verma was a major landmark to push for such reforms. Also, such initiatives aimed at an overall development and beautification of the city especially on such landmarks.

5.4 Project Initiation: When and Where?

Under the leadership of Shri Sanjay Dubey, IAS, Collector of Jabalpur in 2005, Superintendent of Police Shri Makrand Deoskar & Shri Srinivas Rao, Additional Superintendent of Police Shri Manohar Verma, Municipal Commissioner Shri O.P. Shrivastav and Additional District Magistrate Shri Mahesh Chaudhary, Shri Deepak Singh, Revenue officer Mr Rajesh Srivastav with Municipal Corporation officials Shri Rakesh Ayachi and Shri Usman Khan, officers played key role in this drive of removal of religious encroachment in Jabalpur. In addition to it, a group of 10 more officials played an important role in the drive. A team of all these officials actually planned and implemented the initiative to the satisfaction of citizens, local elected representatives and the state government.[1]

Stakeholders involved were Government officials, local elected representatives, religious leaders, citizens etc.

अन्याक्रांति विभाग

माननीय न्यायालय के आदेशानुसार
हटाये गये सड़क पर निर्मित धार्मिक स्थलों की सूची

क्र.	मंदिर/मस्जिद	सडकों का निर्माण / सडकों का चौडीकरण	स्थान	हटाने की दिनांक
1	छोटी मजार	सड़क चौडीकरण	भानतलैया से मदार टेकरी	29.01.2006
2	शंकर मंदिर	सड़क चौडीकरण	देवराज ब्रश कंपनी के पास, भानतलैया	29.01.2006
3	शंकर मंदिर	सड़क चौडीकरण	देवराज ब्रश कंपनी के पास, भानतलैया	29.01.2006
4	हनुमान मंदिर अतिक्रमित	सड़क चौडीकरण	देवराज ब्रश कंपनी के पास, भानतलैया	29.01.2006
5	मूर्ति पीपल पेड के नीचे	सड़क चौडीकरण	घमापुर से भानतलैया रोड	29.01.2006
6	शंकर मंदिर	सड़क चौडीकरण	घमापुर से भानतलैया रोड	29.01.2006

Figure 5.1 - As shown below the demolition under this process was stated in year 2006 in Jabalpur. [2]

5.5 Implementation Strategy Adopted

In the Public Interest Litigation filed in the year 2005, grievance had been made that unauthorised religious structures were illegally constructed on public lands including public roads within the municipal limits of Jabalpur. When directives were issued by Madhya Pradesh High Court to remove religious structure on such large scale, it seemed very difficult to implement at first. Mr. Sanjay Dubey, IAS, Collector of Jabalpur in 2005, along with some key officials prepared the strategy for execution of this initiative. First high level situation was analysed to get perspective on size and complication in the issue, for this a detailed survey of these encroachments was planned and conducted by a team of officials comprising of representatives from Revenue, Police & Municipal Corporation. This was done to identify the year of construction, number of followers, and assessment of land under encroachment and also to analyse the kind of reaction that might have come once the demolition drive was initiated. [1]

An impartial approach for identification of religious structure on government land was taken. The people who were involved as stakeholder with the structure were identified and convinced by carrot and stick method. They were the one who could have possibly created problem during the removal of structure.

Step by step approach for removal of encroachment by administration can be explained as below

1. **Creating awareness and sensitisation among citizens**
   Traffic safety week was organised and used as platform to highlight the traffic problems due to encroachments on road. This was done without any explicit mention of religious encroachments or any specific structure. This activity was widely publicised via audio-visual campaigns. This activity created a sensitisation in community towards problems created by encroachments and gave voice to silent majority who were aware of issues but were not raising their concerns.

2. **Identification of religious structure**
   A survey was carried out by team consisting of revenue authorities, Municipal Corporation and police officials to identify the religious encroachments. The team visited all religious locations with land records, to determine if the structure was illegally constructed on government land. All historical records were verified and this activity was carried out in presence of local community and caretakers of religious place. The information collected was detailed enough and also included year of construction and type of religious activities carried out. The list was shared with local officials at all levels so that any inadvertent mistake could be pointed out and corrected.

3. **Local level preparations**
   Jabalpur has a fairly established practice of organizing peace committee meetings prior to any major festival. It is an informal organisation of political executives, spiritual leaders, local leaders and respectable citizen practicing different religions and representing all walks of life. It is presumed that committee members exercise control over their communities, groups, associations and 'constituencies' [(1)]. These meetings were used to discuss the issue of encroachment, and make local level preparations for removal of encroachments. All stakeholder concerns were resolved at this level through persuasion. They were convinced about the need for action and development activities that will be followed.

4. **Localised ground level preparation**
   When all the work at high level was done, the time came for day of action, for removal of structure. For this localised ground level preparations were done, additional police force was called to curb local resistance, all the officials were told to show restraint in all the circumstances. Extra police force deployment was done in sensitive areas. The day was chosen in such a way to avoid any large scale gathering or crowd due to political rally or festivals.

5. **Respect & sanctity was maintained during demolition**
   Priests and Maulvis were also part of the team who went for demolition drive. Regular priests and Maulvis were persuaded to conduct 'puja' and recite 'fatiha' before demolitions. The idols or majars were then removed in respectful manner. Once the deity is shifted, the structures were pulled down [(1)].

6. **Immediate development work was carried out**
   After any structure was removed, the debris was cleared out side by side. The development work was also started within 2-3 days.

This way people realised need and benefits of this initiative and demolition became a gradual process.

5.6 Challenges Faced

Some of the challenges to the initiatives

a) No earlier initiative on similar lines to anticipate the kind of problems that could be faced and the approach to be followed to tackle such problems
b) Non-cooperation from internal staff due to religious sentiments and fear of public resentment on such activities
c) Opposition from the people of Jabalpur city, who had sentimental attachment with the religious structures

d) New encroachment at places where the drive had already been executed
e) Old structures being constructed back at places where the drive had already been executed
f) Encroachment by daily hawkers and transporters on free up and developed land

5.7 Outcomes Achieved

Outcome of the initiative were

a) Empowered citizens, who proactively inform about encroachment on government land
b) A model proactive with implementation plan that can be implemented in other states
c) Moral responsibility of authorities to keep check on such encroachments as ongoing activity
d) Freed up valuable government land
e) Development activities as road widening, square construction etc.

5.8 Key study findings

Till November 2013, out of 1239, 890 encroachments were removed. Some of which are still not removed, due to stay order etc. Out of 349 pending encroachment 178 are pending in urban areas and rest 171 in rural areas.

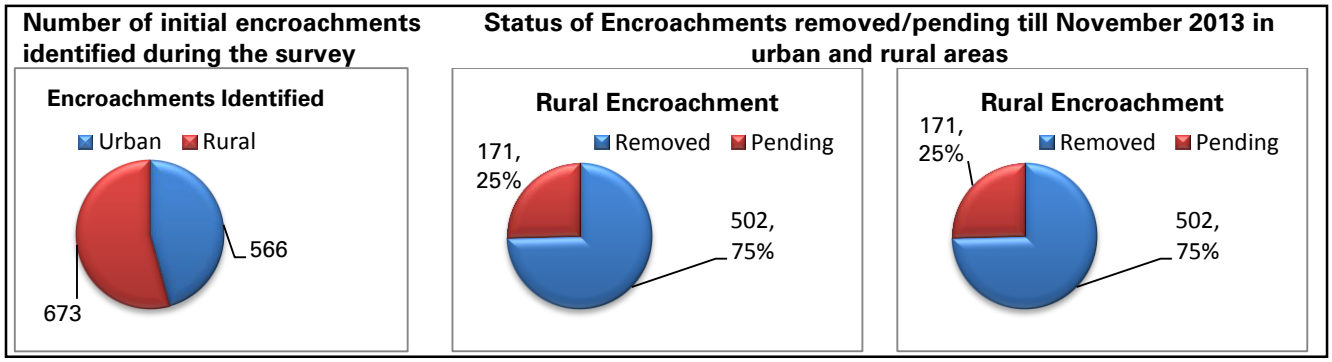


Figure 5.2 – Encroachment data, Jabalpur

5.8.1 Impact Assessment

- The process carried out in a fair and transparent way. No particular area and community was targeted on pretext of this initiative while removal of encroachments.
- No impact on religious activity of the citizens was observed, the religious structures were shifted to nearby places, and sometimes local people themselves shifted the idols before structure was demolished.
- The traffic situation in city improved, yet the effect was not same across the city. At present approximately 48-50 new complaints of new encroachments are being registered every month.

5.8.2 Utility Assessment

- Immediate benefits were received in terms of reduced traffic jams, wide roads and water logging problems at such places was reduced.
- The space created and developed by removal of encroachment was being used by 'Thelawalas' and temporary shops, also the freed up land was treated like a taxi/auto stand (as shown in the picture). This development had not had the intended benefit to the citizens. So even if the administration said that development was done in terms of roads widened and squares constructed the actual benefits of the activity had not transcended to the local citizens to full extent.

Figure 5.3 - 'Thelawalas' and autos encroach upon the land freed up by government from religious encroachments

5.8.3 User Satisfaction

- The process adopted by Jabalpur administration was supported and appreciated by the people of Jabalpur. The process adopted was very effective and involved all stakeholders.

  Process adopted by Jabalpur administration has been given below
  - Notices were given to people, committees managing religious structure identified to be constructed on government land.
  - Notice given contained the time and date of removal of encroachment identified, giving people, committees enough time to provide any documentation if the structure is legally constructed.
  - People were asked to remove the encroached structure on their own and shift the idols to alternate places. Administration offered to provide any help relocation of idols and construction at alternative place wherever required
  - If some more time was sought by citizen for a particular structure that was also given. For some structure it took 1-2 years to remove.
  - On the day of execution proper Puja path was performed before removing the idol, they were respectfully shifted to some other place.
  - All the debris was immediately removed, and development work was started in next few days.
- It was also found that few people were aware of the complaint registration process
- In some cases development work was not carried out up to the satisfaction level of people
- One of the main aspects of user satisfaction was way in which whole process was executed. Proper barricading and traffic diversion was done at time of execution. It was ensured that day to day life of citizens is not disturbed by this activity. In spite of precautions taken by administration, at some places police had to use force and harsh measures as people were creating law and order problem (this was done in Gwarighat, Ranital, Garha area) and people as well as execution team suffered minor injuries. But no major loss of any type was recorded.

5.8.4 Sustainability Assessment

- No specific training for the process was required, as removal of encroachment is routine activity for Municipal Corporation. Team briefing was done prior to execution explaining about the sensitivity of the issue and area specific instructions if any.
- Meetings were conducted in collector's office on monthly basis to track progress; monthly progress reports were sent to the Court.
- Random surveys were conducted (and are conducted at present) for checking new encroachments as well as reconstruction of the encroachments demolished earlier.
  Temporary religious encroachment created at place where encroachment was removed by government officials

Figure 5.4 – Temporary religious encroachment

- Religious encroachment removed were not cropping back, as the idols were shifted to nearby religious places, however temporary structures, shops and transporters encroached the areas cleared of religious encroachment.
- Near Madan Mahal area, a Durga Temple on government land was removed by administration, now at the same place a temporary temple has been constructed by the local people (Shown in picture below).

5.8.5 Scalability Assessment

- The activity of removal of religious encroachment is being/was carried out by

local Municipal Corporation, which is part of their routine activity. So there were no major issues for infrastructure and resources.

- Coordination between various government departments is one of the key requirements for scalability. In case of Jabalpur there was very good coordination between District Collector office, Municipal Corporation and police department. Active support by top level officials, Mr. Sanjay Dubey, IAS, Collector of Jabalpur in 2005, facilitated coordination among departments and scaling up this initiative to Jabalpur district.
- The activity of removal of religious encroachment is carried out on continuous basis and all around the Jabalpur city.
- People of Jabalpur provided complete support for the initiative, once they were aware of the requirement of removal of religious encroachment and benefits of development work carried out at places where encroachment was removed.

5.8.6 Replicability Assessment

- One of the critical success factors for the Jabalpur Initiative of removal of religious encroachment was "Coordination between the government departments, support from the senior officials, political leaders, spiritual leaders, and influential people and most importantly the support from the citizens".
- Development and alternative arrangement for people affected by this activity are other important areas government should consider while replicating this initiative at other places.

Intrastate Replication

One of the positive outcomes of the Jabalpur initiative was this process was initiated in several districts of Madhya Pradesh. Districts such as Katni have replicated the Jabalpur approach and removed some religious encroachments. Yet many challenges limit the effective implementation of the Jabalpur model in other districts. Sharing of information and coordination between the municipal corporation's revenue, urban & town planning departments, and agencies such as the police within a district are the major challenges. These can be overcome by:

- State level meetings for e.g. conclave of Mayors of Cities/Towns in M.P. can be used as a platform to share and discuss these issues and arrive at a common understanding and policy guidelines to effectively check encroachments
- Documentation of experiences and sharing of best practices though the nodal agencies/appropriate authorities
- Ownership/shared responsibility for co-ordination and effective monitoring of encroachments should be established with appropriate authority at district level. In Jabalpur this leadership was provided by the district collector, who led the initiative and was responsible for co-ordination and monitoring

Development Screenshot

The Pictures below shows some of the development activities as road widening, square construction etc., which is done on the land freed up of religious encroachments

Figure 5.5 - Aga Chowk

Figure 5.6 - Gate No. 2 Square- Ranital Road

Figure 5.7 - Madan Mahal Area

Figure 5.8 - Ranital Road

5.9 Shortfalls and Suggested Corrective Actions

Table 5.1 – Initiative shortfalls and suggested corrective actions

Weaknesses/Shortfalls	Suggested Action
1) **Need for push factor (High Court order in case of Jabalpur):** There is lack of self-driven mechanism for administration to act on religious encroachment. The administration or monitoring by judiciary is not a good practice from replication and sustainability perspective.	Government need to create some reward and recognition model/approach as enabler for such activities, e.g., rehabilitation policy of displaced residents.
2) **Old structure have legal immunity:** Structures constructed prior to 1947 were not considered as encroachment and hence not removed, even if they are obstacle to traffic or development.	A study of all such structures which are legally immune and causing obstruction in development should be taken. They should be shifted to alternative places with community involvement. For dispute regarding the identification of year of construction, the method of carbon dating can be used to determine exact year of construction of structure.
3) **Issues of temporary encroachment in areas developed after removing religious encroachments** Temporary encroachments in form of auto stands, daily hawkers etc. still blocks the road and intended benefit is not reaching the citizens	Monitoring by CCTV and other technological media to counter temporary encroachments. The accountability for controlling the temporary encroachments should be shifted to local levels administration. For this clear role and penalty for non-compliance should be defined. Another solution could be to have dedicated hawker zones and effective communication campaign to make citizens aware about it.
4) **Lack of adequate resources**[16] Not specific to Jabalpur, departments sometimes face lack of adequate resources which results in slow action on encroachment and further mushrooming of such structures. For ex Nagpur municipal corporation has just 32 employees in its enforcement department.	For solving issue of encroachment, continued action is required. For this enough staff strength should be maintained by department. Job rotation and common buffer human resource pool (municipal corporation staff, PWD staff, police personnel) could be a possible solution for this problem.

Weaknesses/Shortfalls	Suggested Action
5) **Lack of employment opportunity for the people affected by removal of encroachments:** One of the main reasons for this rapid increase in number of religious encroachments is the deeper issue of 'concealed unemployment', to handle this issue from sustainability aspect this needs to be taken care.	Alternate employment and livelihood opportunities for people affected by removal of encroachments, in accordance with their interests/skill sets should be developed, for example, training as guides, development of culture walks, local handicrafts etc. to encourage tourism. This would help prevent new encroachments and old ones from cropping back.

5.10 Indicative Factors for Identification of Target States

Supreme Court of India has already banned construction of shrines, statues on public roads. The order can empower municipal and government bodies to prevent unauthorised constructions being carried out under the garb of religious structures as often local political interests and religious sentiments render authorities helpless. The problem of religious encroachment is prominent in every state, city and district of India. So a well-defined procedural approach is needed to tackle this issue at national scale. [4]

- In 2009, the Supreme Court had directed all state governments in the country to formulate policy to check unauthorised construction of temples, churches, mosques and gurudwaras on government lands, including roadsides and parks.
- Below mentioned are some states with high number of religious encroachments as per the information submitted by states in Supreme Court in past 3-4 years.[5][6]

Table 5.2 – states with high number of religious encroachments

State	No. of Illegal Religious Structure
Tamil Nadu	77,453
Rajasthan	58,253
Madhya Pradesh	52, 313
Uttar Pradesh	45,152
Chhattisgarh	34,864
Maharashtra	17,385
Bihar	16,834
Gujarat	15,000

- Rajasthan High Court directed state government to come up with a plan to remove around 58,000 religious encroachments in the city in November 2010.[8]
- In Nagpur, social organisations and residents are pressing for a wider anti-encroachment drive.[9]
- In September 2011 Honourable Supreme Court has asked all states and union territories as a reminder to formulate a comprehensive policy on the removal, relocation and regularisation of unauthorised religious construction, if they haven't already done so. [10]
- In July 2013 Honourable Supreme Court asked all states and union territories to give details about the number of religious structures on encroached government land that have been razed or relocated by them and those that are still standing. [11]
- Bhubaneswar Development Authority has carried out an extensive survey of unauthorised religious structure sprouting unchecked on government land in august 2013. The report will be submitted to revenue

and disaster management for exploring further action.[12]

- In October 2013 Tripura government has framed rules to check unlawful construction of religious structure by encroaching roads and government lands.[13]
- In Goa the administration has identified illegal structures on government and community land. The action has yet to be taken on those.[14]
- Bihar government already has rules in place for handling religious encroachment in form of 'The Bihar unauthorised religious structures construction survey and its regularisation, relocation and removal Rules, 2013'.[15]

The above news and events clearly shows the evidence that issue of religious encroachment is very prominent all across the India and needs to be taken care of immediately. The Honourable Supreme court of India has already directed all states/UTs to act against religious encroachments. The way this issue was handled and solved by Jabalpur administration can act as a model practice for states all across India.

The states with high number of religious encroachments such as Tamil Nadu, Rajasthan, Madhya Pradesh, Uttar Pradesh, Chhattisgarh, Maharashtra, Bihar, Gujarat should be targeted first and within states with high number of religious encroachments the prioritisation should be done for cities based on number of traffic accidents caused by such structures, obstruction in development work and major concerns expressed by local population.

5.11 Implementation Approach

Table 5.3 - Critical Success Factors for Scheme Replication: Lessons from Jabalpur

Factors	Strength/Benefit
Scheme Scope & Coverage, Enabling Policy Interventions	**1) Mandate to State and Administration** Madhya Pradesh High Court order dated 09/12/2005 directed the district authorities to remove religious structures which have been illegally constructed on public land and public roads and keep reporting compliance from time to time once in every month by an affidavit of the collector. **2) Simple criteria for identifying religious encroachments** Factors were defined for identifying encroachment a. Structure on main road with problem in traffic movement b. Structure on government land c. Encroachment done after 1947 d. Structure on land which was allotted to some organisation and misused **3) Following law and policy during execution process[2]** a. Municipal corporation act of MP, 1956 b. MP revenue code, 1959 c. MP public places act 2001 d. Decision of MP High Court on writ petition 2214/2005
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	**1) Monthly Progress report submitted to MP High Court:** Every month a progress report was sent to Madhya Pradesh High Court on Affidavit of the collector. This ensured tracking of status and continued progress. For this a monthly meeting of all departments is conducted in collector office, in this meeting progress on removal of encroachment is tracked and data on removal is consolidated. **2) Random survey of places where drive has been already been executed:** Random surveys by Jabalpur Municipal Corporation to check for new encroachments and re-cropping of encroachment. If any encroachment is found during this it is removed immediately.

Factors	Strength/Benefit
Capacity Building and IEC Campaigns	1) **Effective use of communication media:** Jabalpur administration used road safety week to highlight traffic accidents and other issues linked to encroachments on road. This was publicised through print and visual media. People were made aware of inconvenience caused by these religious encroachments 2) **Slow and steady approach for consensus building:** Getting support of people on such sentimental issue takes time. Jabalpur administration gave prior notice and sufficient time was also given to shift the structure. Any support required in the process was also provided by administration and other departments.
Organisational Structure and Stakeholder Participation	1) **Involvement of citizens as stakeholders:** Peace committee meetings involving administration, local representatives and influential people were organised prior to removal of encroachment to address the concerns of the people if any. 2) **Strong leadership for coordinating and carrying out the initiative:** Mr. Sanjay Dubey, IAS, Collector of Jabalpur in 2005, provided strong leadership which was instrumental in coordination among government departments and success of the initiative.
Technology Interventions	1) **Use of online media for complaint registration:** Citizens can register complaints online through complaint portal.

Salient Features of a Religious Encroachments removal process: Replication Guidelines

The Honourable Supreme Court of India has directed all states/UTs to act against religious encroachments. The suggested steps below, along with findings and recommendations highlighted in the earlier sections, can act as a 'model' practice to be followed for a similar 'inner city development' activity by any other metro/state capital. As stated in Section 5.9 at S. No. 1, for long term impact government (state/district administration) may create some reward and recognition model/approach as enabler for such activities, e.g., rehabilitation policy of displaced residents.

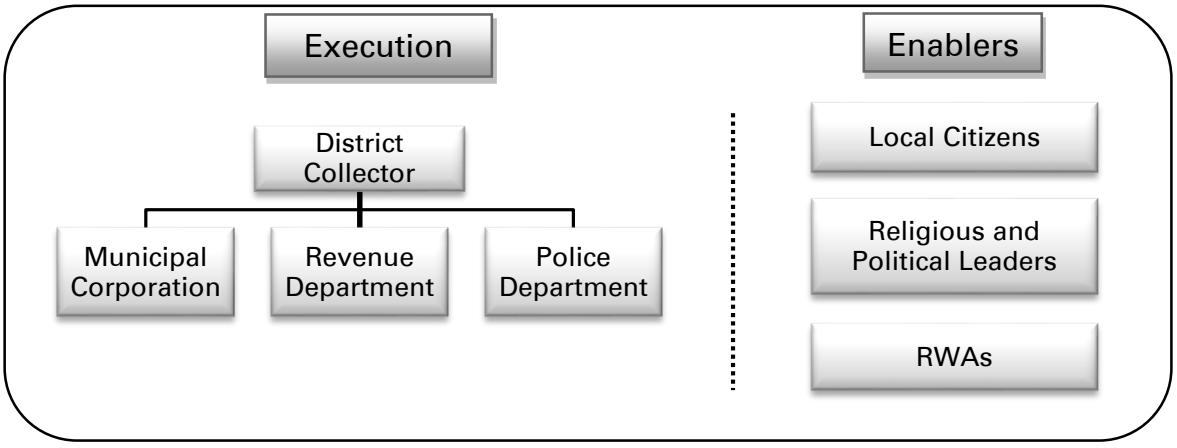


Figure 5.9 - Existing Organisational Framework at Jabalpur

Step 1: Assessment of Problem

Various illegal religious structures are constructed in India. Many of these are constructed or extended to the roads and cause obstacle to the traffic. Many people gather at these places for daily religious activities and during festivals. These gatherings many times become reason for disputes and traffic accidents causing problem to general public, commuters and law and order issues. But as the matter is related to the sentiments of the people this should be handled with extreme care.

Assessment of problem/issue created by these encroachments especially the one falling on roads. These problems can be used to sensitise people on need for removal of encroachments.

The indicators which needs to be identified and can be used to make people aware of issues/problems caused are

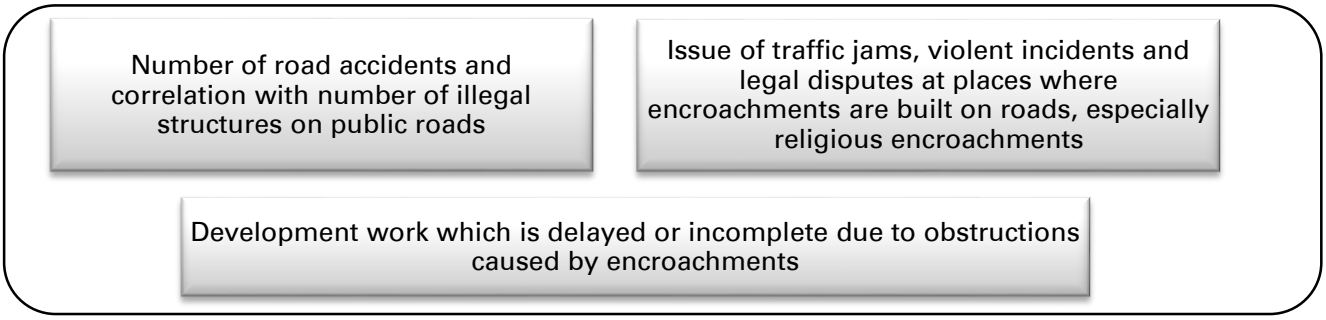


Figure 5.10 – Indicators for people awareness campaign

Step 2: On-boarding of all internal stakeholders/departments

Identify the stakeholders involved. At this stage all stakeholders/government departments should be made aware of the situation and their roles and responsibilities should be defined. The government department involved are Collector office, Municipal Corporation, Revenue department and Police department. The roles and responsibilities chart for the stakeholders is provided below.

Table 5.4 – List of stakeholders and their roles

Stakeholder	Task/Assigned Activity/Role

Collector's Office	• Coordination of end-to-end process of removal of encroachments:
	  • Facilitating coordination among various departments involved
	  • Facilitating local level meetings with citizens and influential people to sensitise them about the problems caused by religious encroachments and other unplanned structures
	  • Handle the media and communication aspect of the whole activity
	• Plan and coordinate for immediate re-development work at place after the removal of religious encroachment

Revenue Department	• Identification of encroachments/illegal structures as per land records and historical maps (Nazuls) available
Municipal Corporation	• Identification of illegal structures based on recommendations of legal cell, with concurrence of land revenue department and PWD • Removal of encroachments, providing required infrastructure in terms of machinery (bulldozer, grader etc.) and manpower
Police Department	• Assist the revenue and other allied department officials to conduct survey for identification of religious/other encroachments • Assess ground-level situation and provide required manpower, as requested, to maintain law and order on the day of demolition of encroachments

Stakeholder	Task/Assigned Activity/Role
Religious and political leaders	• Spreading awareness and sensitizing people about the issue and problems caused by religious encroachments, and also help administration understand the local citizens' sentiments on the issue
RWAs and Local Citizen Groups	• Help administration with planning of development work in the city, in accordance with socio-economic needs of the area • Proactive involvement in reporting and prevention of new and existing encroachments

A Joint team of District Administration, Municipal Corporation, Revenue Department and Police Official should be formed, the joint team formed should meet at regular intervals through nodal officers from the involved departments to plan the process and track the progress of encroachment drive.

One of the major challenges at this stage comes from the internal stakeholders, i.e., the execution team. As the matters relate to religion, junior municipal staff, being from the same city/community is especially sensitive to social pressure. They are afraid to act against religious structures due to pressure from vested interests, often disguised as 'fear of acting against God' or 'hurting the religious sentiments'. So it is important to convince and align the internal stakeholders to the objective of development.

Step 3: Identification of target structures for removal

Criteria for identification of religious encroachments should be defined as per existing laws. Joint team of Revenue department, Municipal Corporation, local leaders and Police should conduct survey for identification of religious encroachments as per defined criteria for classification of a structure as encroachment.

During the survey the background information of structure should be captured, for example, year of construction, type of religious activities being carried out, people most likely to be affected by removal etc. The role of the revenue department is of paramount importance at this stage, as it has the repository of all city planning maps and Nazul maps, which would assist in identification of encroachments as per laid down instructions. The more transparent the process of identification, the greater is the likely support from local residents. For this the criteria and structure identified as encroachment could be publicised on the administration web site and local newspapers, for prior public scrutiny. This will help to maintain transparency and avoid any inadvertent mistake in identification of encroachments.

As stated in Section 5.9 at S. No. 2, a study of structures which are legally immune (ex. Structure constructed prior to 1947) and causing obstruction in development should be taken. They should be shifted to alternative places with community involvement. For dispute regarding the identification of year of construction, the method of carbon dating can be used to determine exact year of construction of structure.

Step 4: Creating awareness among the citizens about the inconvenience caused by such structures

Various measures were taken by Jabalpur administration for this process some of which were very effective and can be replicated by other cities:

a. Traffic accidents at places where religious encroachments were posing an obstacle were highlighted, a "Traffic Safety Week" was used to make people aware of traffic problems due to such structures
b. Role of broadcast media such as TV, radio and newspapers is very important in such activities; a proper guided campaign on local media should be run to highlight the problems faced by local residents due to the presence of such illegal structures
c. "Communal Harmony Day" should be celebrated to get the 'buy-in' of youth and community leaders

No particular community or religion or ethnic group should be targeted in any of the communication campaigns on media. Rather, support of spiritual leaders of various religions and political leaders should be taken.

Step 5: Prior notice for removal of encroachments should be given; roping in peace committees

Jabalpur has a unique practice of organising peace committee meetings prior to any major festivals and events, local influential people and local leaders along with the administration. This platform was used to make people of locality aware of the encroachments identified in their locality and gauge the initial reaction. Initially some people might show reluctance; hence this needs to be handled by adopting a 'carrot and stick' approach. Court orders should be cited and used to get buy in from people for removal of encroachment.

Such best practices can be adopted at other places for replication and handling of such sensitive issues.

Prior notice should be served at least one month in advance to persons or religious committees managing such illegal structures on public land, giving them time to provide any proof of legitimacy of the structure. This process will help in maintaining the communal ethos of the city/locality and avoid any legal disputes at a later stage. Sometimes, people themselves remove the disputed/illegal structure from the encroached land upon receiving a legal notice.

The prioritisation/selection of encroachments for removal should be based on need for developmental work. The roads which are targeted for widening or other developmental activities, encroachment on those roads can be targeted at one time.

Step 6: Assessment and planning on encroachment should be localised

Small community level meetings should be conducted with local leaders and influential people to convince them about the need and discuss the best possible process to remove encroachments on public land. Also the development needs of the locality and possible employment opportunity for people who will be directly impacted by removal of religious encroachments needs to be discussed to address the core socio-economic problems of the society which leads to such encroachments.

Local level administration meeting should be conducted to assess the resources required depending on law and order situation in the area, for this role of local area leaders and police officers is important.

Step 7: Respect the religious sentiments of the local populace during demolition activity

This process is related to sentiments of the people, so utmost care should be taken to ensure that proper respect and sanctity of the religious place/artefacts is maintained at all times. Proper 'puja' or religious rites should be performed before removal of idols or any other structure/artefacts, ensuring there is no direct or perceived dishonour or 'blasphemous' act during the extraction/demolition.

This activity should not be carried out in haste; sufficient time should be provided to the citizens for removal of idols/artefacts. Due arrangements should be made for an alternate place for shifting the religious structure/idols/artefacts, if available, and all feasible support in shifting should be provided.

For example, in Jabalpur it took more than a year to remove some of the religious encroachments. The date of demolition was postponed multiple times for some structures as the place for shifting was not available in time.

Step 8: Focus on developmental activities

After demolition all the debris should be removed immediately and developmental work planned should be started quickly. Once people start seeing development activity in their area, they are more likely to realise the benefits arising out of freeing up of public land, and this will make the job of the administration easier due to greater acceptance.

Important Considerations for Successful Execution of Demolition Drives

Mentioned are important considerations which should be considered while replication of the initiative at other places

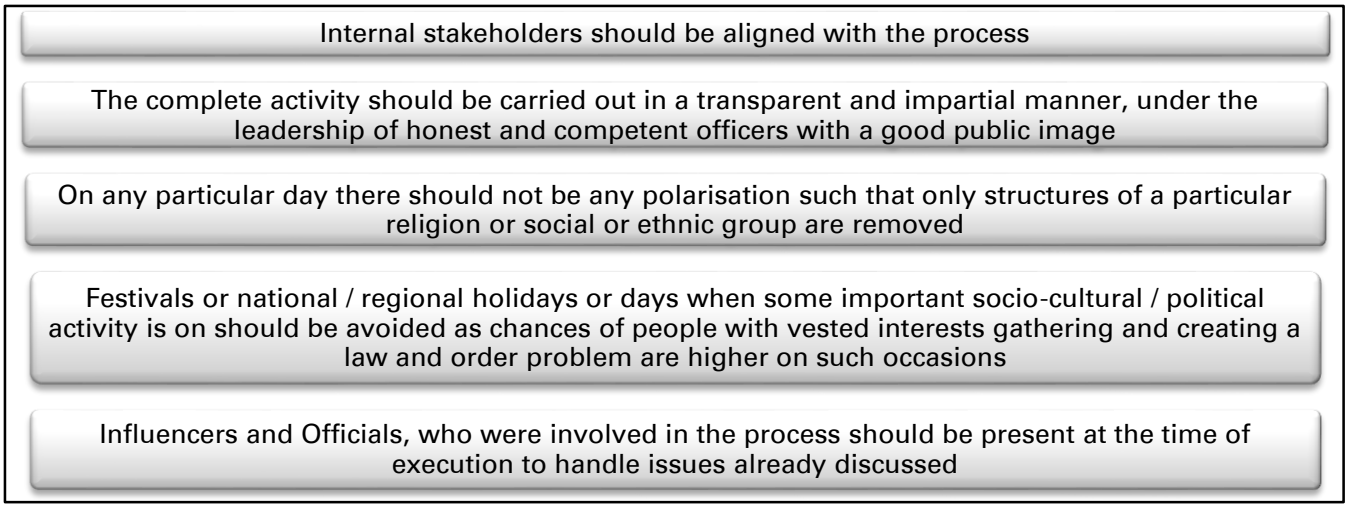


Figure 5.11 – Important considerations

Key Replication Processes: Indicative Timelines

These timelines are indicative and based on the understanding gathered during interactions with stakeholders involved in the initiative. They have been further strengthened through secondary research for a city having demographics similar to that of Jabalpur. Actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city. The indicative timeline may also vary depending on political and administrative will of policy makers and implementers.

Table 5.5 – Indicative Timelines

Activity	Time frame	Remarks
Assessment of Problem	2-4 months	Traffic issues due to different religious structures on different days of the week should be monitored carefully. For example, Mondays for Shiva temple, Tuesdays for Hanuman temple, Fridays for mosques/dargahs etc.
On-boarding of all internal stakeholders/departments	1-2 months	Daily interdepartmental meetings to be conducted
Identification of target structures for removal, Survey and compilation of list of illegal religious structures	2-3 months	1-2 months for ground survey, 1 month for verification of list.
Creating awareness among the citizens about the inconvenience caused by such structures	1-2 months	Initial time for planning, continuous activity thereafter
Prior notice for removal of encroachments should be given; Localised planning	1 week to 1-2 months for an encroachment	Due notice period to be served, depending on encroachment size, resistance level etc.
Demolition activities	Depends on local conditions, cultural events, religious fairs etc.	Can vary depending on law and order situation and size of the encroachments to be removed
Monitoring and Developmental activities on freed up land	Survey at intervals of 7-15 days	Continuous activity, to be carried out in sync with survey, planning and removal of encroachments

Monitoring System for Sustainability

The removal of encroachments whether religious or otherwise is one aspect of activity; another more important activity is putting in place a robust monitoring system for sustaining developmental impact of such activities.

A toll free number for reporting of encroachments, quick action and heavy penalty on encroachers would help strengthen the system of monitoring and control.

For solving issue of encroachment, continued action is required. For this enough staff strength should be maintained by department. Job rotation and common buffer human resource pool (municipal corporation staff, PWD staff, police personnel) could be a possible solution for this problem.

As stated in Section 5.9 at S. No. 3, Monitoring by CCTV and other technological means to counter temporary encroachments should be institutionalised. The accountability for controlling the temporary encroachments should be shifted to local level administration. For this clear role and penalty for non-compliance should be defined. Another solution could be to have dedicated hawker zones and effective communication campaign to make citizens aware about it. This model was effectively implemented in Gwalior. (19)

Alternate employment and livelihood opportunities for people affected by removal of encroachments, in accordance with their interests/skill sets should be developed, for example, training as tourist guides, development of culture walks, promotion of local handicrafts etc. to encourage tourism and livelihood generation. This would help prevent new encroachments and old ones from cropping back.

Case Study: Kerala State Land Bank

The Kerala state government took a remarkable step in direction of monitoring and control of encroachments with the establishment of the **Kerala State Land Bank**.

Kerala State Land Bank is "An attempt to SYSTEMATICALLY INVENTORISE all public lands to PROFESSIONALLY manage the same in future, in order to assure RATIONAL USE of public lands, with the wholehearted SUPPORT FROM THE PUBLIC, in the most TRANSPARENT manner."[17]

The government land is surveyed and sketches along with other land details is digitised and stored as permanent record. These records are updated through continuous monitoring. The copies of these document is shared with sub-registrar offices also, so that to prevent the registration of any such illegal encroachment on land.

The system is maintained by Revenue Department in the state of Kerala. Old paper format land records/maps are generally inaccessible or can be easily tampered with, thus providing an opportunity for the builder mafia to exploit and encroach government land. So, digitisation of these maps can prove to be an important landmark in controlling the problem of encroachments and also prove beneficial for government in terms of continuing developmental activities, besides extracting potential revenues from government/public land.

For continuous monitoring a special Public Land Protection Force (PLPF) has been constituted in the state of Kerala. 'Tehsildars' in different districts are responsible for surveillance of land in their respective areas; they act as land audit officers[18].

The personnel from PLPF and the Village Officers have to sign the Beat Registers on monthly intervals so as to assure two inspections in a site in a month. A Toll Free Number has been established towards reporting of encroachments of public lands by the general public and also to inform about the Government lands which are left out from inclusion in the website.

Such best practices can be replicated in different states, after duly adapting the same to suit the

local administrative structure. Panchayati Raj Institution (PRI) representatives could be roped in for monitoring land use and reporting any encroachments. This will help to further strengthen the monitoring and control system.

Overview of proposed religious encroachments removal implementation approach

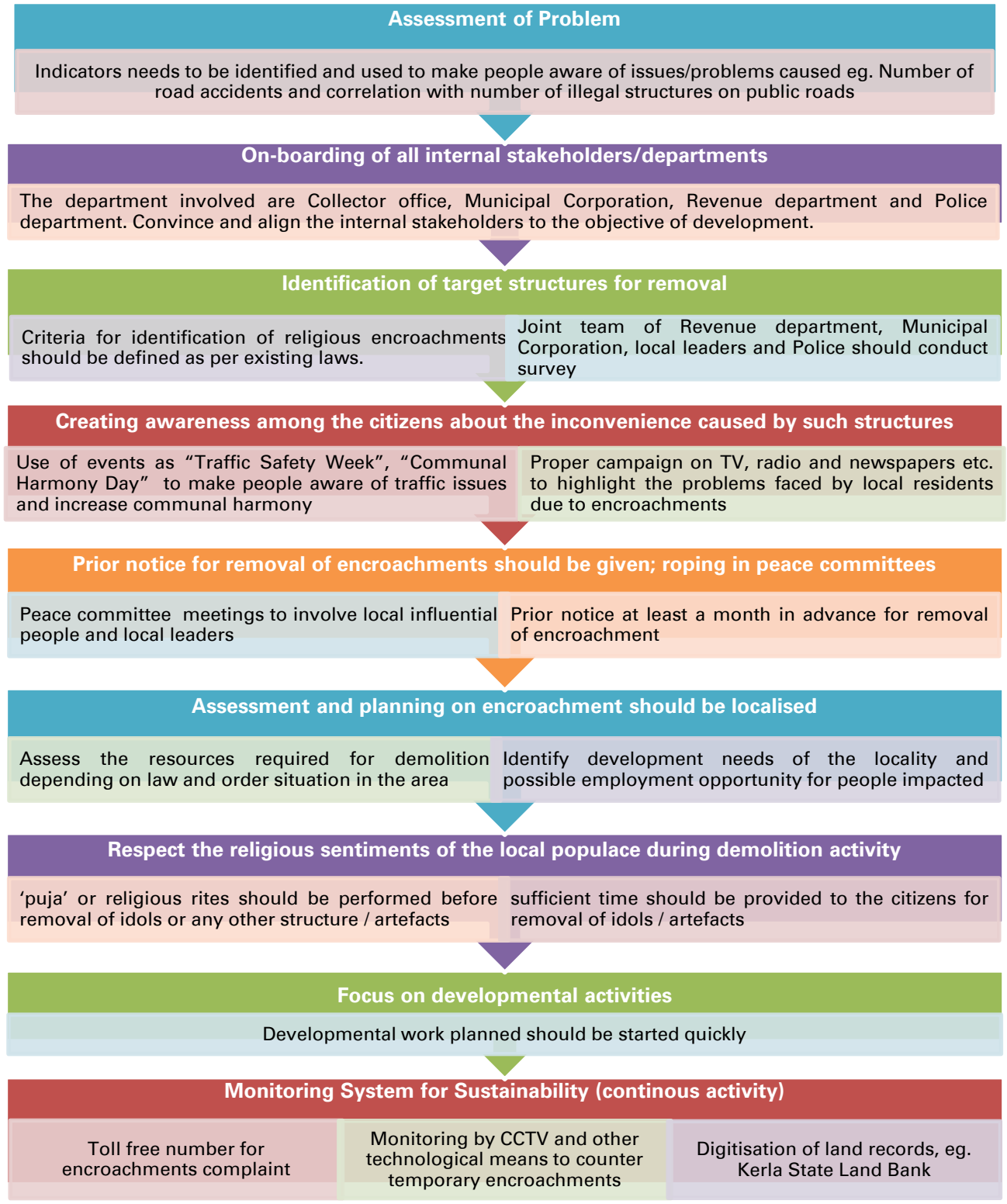


Figure 5.12 – Overview of proposed replication guidelines

6 – Involvement of Community under National Rural Employment Guarantee Scheme (NREGS) in Naxalite Affected Areas, Madhya Pradesh

MNREGS is introduced with the aim of uplifting the economic status of the population by involving them in various activities, establishing co-ordination amongst different govt. functionaries and instil confidence amongst the stakeholders.

6.1 Initiative Objectives

The prime objective of this initiative was to provide 100 days' gainful employment to one person from each rural family. However, the initiative also had a series of underlying objectives (specific to the area under consideration), which are as stated below:

- Assess the status of Livelihood Security for the poor through creation of durable assets and wage employment, sustainable development though improved water security, soil conservation, higher land productivity, strengthening drought-proofing, flood management in rural India;
- Evaluate how far is the programme supportive of empowerment of marginalised communities, especially women, Scheduled Castes (SCs) and Scheduled Tribes (STs), and other deprived sections through the processes of a rights-based legislation;
- Understand the role of NREGS in extremist influence areas of Madhya Pradesh and identify key factors from its successful implementation in order to replicable in other similar situations;
- Examine the role of Panchayati Raj Institutions (PRIs), civil society institutions towards NREGS implementation in Balaghat district and the features of good governance 'best practices' adopted that can help to strengthen other anti-poverty and livelihood initiatives.

6.2 Background: Rationale behind the Initiative

Balaghat, located at the southernmost tip of Madhya Pradesh, is one of the 33 most affected Naxal affected districts of India. With 52% of the area of the district under forest cover and an undulating terrain, coupled with its geographical location, it was a natural choice for the steady infiltration and growth of Naxalism.

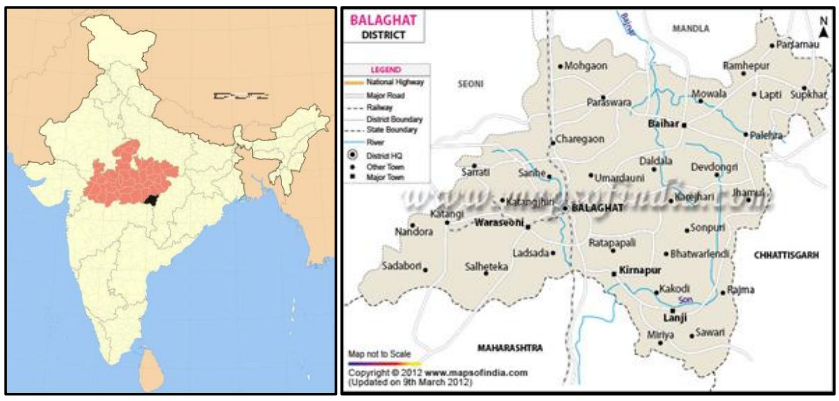


Figure 6.1 – Balaghat District

The 10 Blocks and 596 Panchayats of the district which have a total population of 17 lac as per 2011 Census, have been hit time and again by Naxalite activities.

The district is highly inaccessible and comprises of underdeveloped areas with a meagre ballot value owing to small and dispersed habitations. Taking advantage of the situation, Naxalite ideology that considers neglect of government machinery responsible for socio – economic plight of the people, has been implanted deep within the populace. Additionally, there has been a number of attacks on the administrative personnel as well as civilians over the years, which has created a demoralised administrative machinery in the district, who are not only fearful of the posting over here but also consider it no less than a punishment. This led to the introduction of the MNREGS initiative.

6.3 Key Factors leading to Initiative

The major factors that led to the initiative were as follows:-

- Socio - economic condition of majority of population
- Hindrance to economic activity caused by insurgency
- Absence of infrastructural amenities
- Lack of involvement and low motivation of Government officials
- Lack of co-ordination between Government Departments

6.4 Project Initiation: When and Where?

i. **Profile of implementer:**
Implementing agency for this project was Ministry of Rural Development, Govt. of India with support of Balaghat District Administration and Panchayati Raj Institutions (PRIs).

ii. **Year and period when this initiative was started**
NREGA was passed by Parliament in 2005, implemented initially in 200 districts, later extended nationwide. It was implemented in the same year.

iii. **Team details:**
The District Administration of Balaghat along with the Panchayati Raj Institutions (PRIs) with co–ordination from police, forest department, PWD and RES.

6.5 Implementation Strategy Adopted

The implementation strategy was a five stage process which has been depicted below:

Stage 1: Accessing people in the Naxal-affected Areas: This was done by organising cluster meetings with the local leadership team across 115 Haat bazaars. These meetings aimed at assessing the predominant problems of the populace and understand their priorities for development. Major problems identified were as follows:

- Problems pertaining to employment/regular source of income
- Absence of road connectivity
- Small agricultural holdings with no irrigation facility

This stage encompassed rapport intensive touring with revenue, police, forest, rural development departments in the Naxalite infested areas for planning. NREGA was offered as the solution for most of the predominant problems.

Stage 2: Selection of the Implementation Agency: The implementation was decentralised. 693 gram panchayats, 500 forest committees and 12030 Self Help Groups were selected as implementing agencies. The line departments were not chosen as the implementing agency because of the following issues:-

- Manpower from the Line department was too inadequate in proportion to the quantum of sanctioned work under NREGA
- Line departments were prone to arm twisting by both Naxalite and other vested interests
- Strength of the line departments were used for larger projects and technical inputs

Stage 3: Round-the-Year Employment Cycle:
The plan devised a "round the year" income guarantee through the NREGA scheme with heavy reliance on agricultural and forest products. The Annual employment cycle followed the pattern as indicated in the diagram:

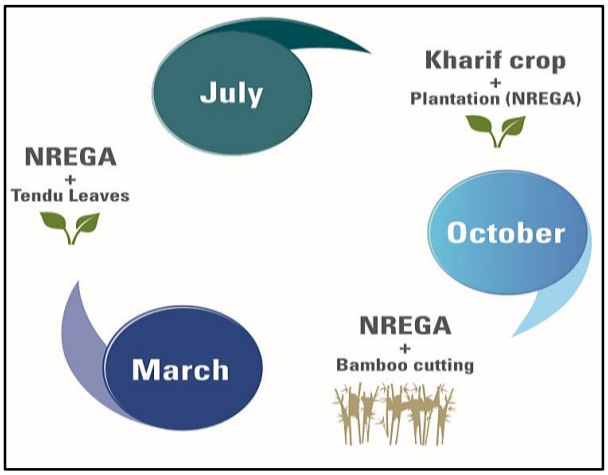


Figure 6.2 - Annual employment cycle

Stage 4: Inter-departmental Co-ordination: The implementation required tackling development and security challenges with a very high degree of co-ordination with police, forest and other agencies involved in the implementation. Strategic road connectivity was established with police and forest department inputs. PWD was made responsible for trunk roads, RES for link roads and panchayat for village roads. It was ensured that no conflict exists between NREGA and seasonality of forest activities. Additionally, co-ordination between GOI, GoMP, PRIs, Banks and Post Offices was streamlined in order to disburse payments to the workers on a timely basis.

Stage 5: Inter-scheme Convergence: An innovative use of NREGA funds and funds from other schemes like Budget, BRGF, MPLADS, and MLA LADS in ratio of 60:40. For example, WBM was from NREGA and blacktopping from other funds. For example, Wells were constructed from NREGA funds and Pumps procured using Swarnajayanti Gram Swarozgar Yojana (SGSY).

6.6 Challenges Faced

The major challenges pertained to accessing people in Naxal infested areas and working with demoralised government functionaries who considered posting to Balaghat a punishment. Another challenge was to maintain co-ordination with different departments.

6.7 Outcomes Achieved

The major outcomes achieved were as follows:

- Availability of employment opportunities throughout the year
- Average utilisation of NREGA funds per annum was to the tune of Rs. 180 crore, which is much higher than the State (Madhya Pradesh) as well as the National Average, which showed increased tendency amongst the populace to adopt the scheme
- On an average 2.5 lac households were availing employment under the different schemes
- The implementation played a key role in women empowerment, with more than 60% participation coming from them

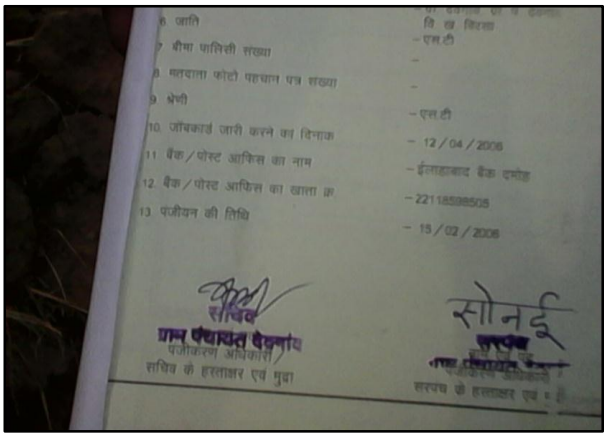


Figure 6.3 - MGNREGS Muster Roll Entry, Balaghat, MP


Figure 6.4 - MGNREGS Women Workers, Balaghat, MP

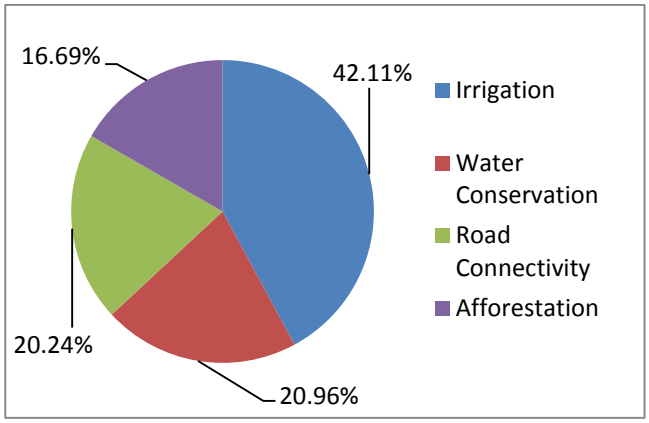


Figure 6.5 – Major development areas

Table 6.1 – Major development areas

Activity	Expenses on Completed Works (Rs. Crore)	Percentage
Irrigation	54.63	42.11%
Water Conservation	27.19	20.96%
Road Connectivity	26.26	20.24%
Afforestation	21.66	16.69%
Total	**129.74**	**100.00%**

- Smooth co-ordination was observed amongst different government departments with the four areas of **irrigation, water conservation, road connectivity** and **afforestation** standing out clearly as the front runners
- The implementation resulted in increase in wage negotiation capacity for workers from Rs. 30 per day in the year 2004-05 to Rs. 100 per day in the year 2009-10 and to Rs. 146 in the current fiscal (FY 2013-14).
- The implementation of the NREGA schemes helped to slow down the rate of distress migration with fewer numbers of individuals/families opting to move out of Balaghat.
- Improved road connectivity was established in the Naxalite affected areas. The district, which had 272.63 km of road in 2004-05 increased to 2,766 km in the year 2009-10. The gradual addition to the road length over the years has been depicted in the chart below:

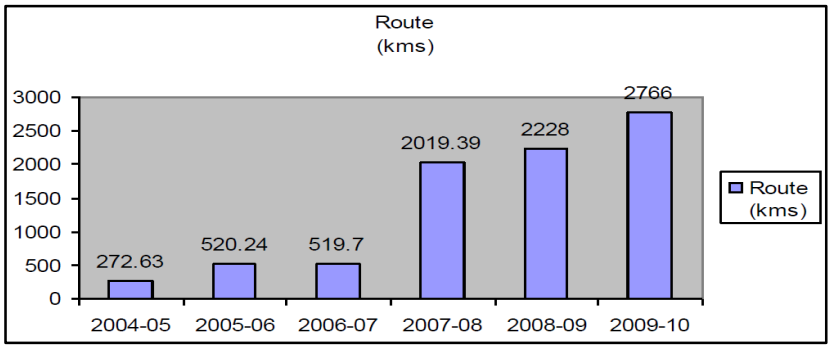


Figure 6.6 - Road length over the years

- Implementation of the NREGA scheme had a positive effect on maternal health in Balaghat district, with considerable augmentation in the number of institutional deliveries as depicted in the chart below:

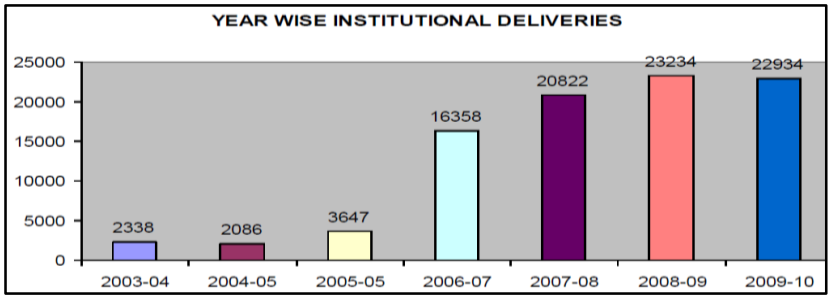


Figure 6.7 - Institutional deliveries over the years

- There has been a considerable decrease in the infant mortality rate (IMR) as well as the maternal mortality ratio (MMR), the former down from 56.73 per 1,000 in the year 2003-

04 to 42 per 1,000 in the year 2009-10. MMR decreased from 331 per lac in the year 2003-04 to 257 per lac in the year 2009-10.

- Attendance of children in school increased considerably both in the primary as well as in the secondary sections
- Irrigation facility improved considerably, with an addition of 27,600 hectares by renovation of old irrigation canals from the British period.
- The improved irrigation capacity contributed to improved agricultural amenities.

Figure 6.8 - Pucca Well developed under MGNREGS, Balaghat

Figure 6.9 - Afforestation Project Signage, Balaghat

- The implementation also aimed at rejuvenation of forest activities in the Naxal dominated areas, where the villagers braved threat calls from the Naxalites to boycott bamboo and tree felling and tendu leaves collection. The forest revenue, which had dipped considerably before implementation of the schemes under NREGA nearly doubled from the year 2007-08 onwards.
- Currently the Balaghat district administration is running 15 schemes under the aegis of MGNREGS. These 15 schemes are in the areas of agriculture, livelihood generation and sustainable development. Various water conservation ponds were constructed under Kapil Dhara, Nirmal Nir and Medh-Bandh schemes. The impact of these assets is seen in terms of increase in agricultural productivity. Now, beneficiaries in the district are able to harvest two crops against the earlier single crop in a year.
- Due to implementation of the Total Sanitation Campaign (TSC) programme, many toilets were constructed in Balaghat district. Some panchayats like Chamarwadi in Balaghat block and Darba panchayat in Birsa block, which is a Naxalism affected block, have done exceptionally good work in this area.

Figure 6.10 - Community Hall, Village Devgaon, Birsa, Balaghat

Figure 6.11 - Zila Panchayat, Birsa, Balaghat

- Under horticulture and sericulture programmes, the Balaghat district administration has developed a number of schemes like Kela-Papita Scheme, Resham Yojana, Nandan Phal Udhyan, Vanvashi Samvardhana Scheme, Mera Khet-Meri Mati etc. As a result of implementation of these schemes in remote areas, positive outcomes are visible in the form of round-the-year gainful employment generation at the local level and profit-sharing in the tendu leaves programme.
- A lot of construction activity is going on under MGNREGS in the form of community facility centres for promoting sporting activities under the Kridangana Scheme. During the field survey local people were of the view that a lot of developmental work has already been done in the villages. Now village panchayats are focusing on extending development work to other areas such as construction of animal shelters for domesticated livestock. This shows an effort to diversify economic activity and tap sources of income beyond pure agriculture to cattle rearing and dairying.
- Lastly and most importantly, the implementation had a moderating impact on Naxalism and the criminal activities associated with it. A gradual decline was observed in crime rate as well as casualties.

6.8 Key Study Findings

6.8.1 Scheme Scope & Coverage, Enabling Policy Interventions (Impact, Utility)

The major challenges pertained to accessing people in remote Naxal infested areas and working with a demoralised set of government functionaries who considered a posting at Balaghat to be a punishment; ensuring inter-departmental co-ordination was another key challenge that had to be overcome.

6.8.2 Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure (User Satisfaction)

The major success factor for this initiative was to involve the local level communities, guarantee round the year employment by allaying fears, instilling confidence and developing co-ordination amongst the population. Vigilance and monitoring committees were formed at district, block and village levels headed respectively by the MP, MLA's and person other than the sarpanch of the village. Each of these committees was well trained so that they could play their role effectively. The critical success factor for the scheme relied on the fact that the government functions were used minimally and the local community was vested with more power. Periodic social audits were being conducted to monitor the socio-economic situation apart from the regular NREGA data which was strictly monitored at the State as well as the Central level. The success of generating and sustaining livelihood received multiple accolades from Government of India. At the end of the day, it would not be wrong to say that Balaghat managed to fight back insurgency by instilling confidence amongst all its stakeholders.

6.8.3 Capacity Building and IEC Campaigns (Utility and Sustainability)

The major task in making this scheme a runaway success was to motivate and instil confidence amongst the general population as well as the government machinery. The first step taken was to re-instate the infrastructure in form of roads, irrigation canals etc., the next step was to improve agricultural output utilising the various schemes available. Once spontaneous participation was noticed, many other schemes were implemented in the same fashion as discussed under outcomes achieved.

6.8.4 Financial Viability (Sustainability)

The panchayats' were trained to demand funds by simple calculation as depicted below:

500 HH * 100 days * Rs. 100 = Rs. 50 lac.

The gram panchayats were trained to put pressure on the district machinery to actually get those funds. The disbursal trends from the NREGA national website indicate that there has been a steady flow of funds and more and more workers are feeling motivated to join the different schemes under the same.

However, there is still scope for improvement. Balaghat happens to be one of the districts of MP with the highest sanctioned budget under the NREGS but utilisation of funds or achievement remains low, as shown in the tables below:

Table 6.2 - Fund allocation, expenditure and availability for the year 2013-14

District	Total Fund Available (in Rupees lac)	Expenditure (in Rupees lac)	Balance (in Rupees lac)
BALAGHAT	11,855.75	6,705.91	5,149.84

Source: Mahatma Gandhi NREGA portal, MoRD, GoI

Table 6.3 - NREGS in Madhya Pradesh: District-wise Person days Generated FY 2013-2014

S. No.	District	Projected Person days	Person days Generated	Person days achieved (%)
1	HARDA	515000	705088	136.91
2	BHIND	585000	593324	101.42
3	DATIA	485000	428642	88.38
4	SHIVPURI	2360000	2001857	84.82
5	HOSHANGABAD	757000	637553	84.22
6	CHHINDWARA	6784000	5606845	82.65
7	MORENA	2013000	1532077	76.11
8	GWALIOR	1553000	918225	59.13
9	DEWAS	3221000	1891468	58.72
10	RAISEN	1367000	776492	56.8
11	SHAHDOL	3858000	2131143	55.24
12	ASHOK NAGAR	1417000	734346	51.82
13	NEEMUCH	755000	385185	51.02
14	BALAGHAT	7459000	3798057	50.92
15	VIDISHA	1859000	918410	49.4
16	SEHORE	3123000	1523350	48.78
17	KATNI	4075000	1898049	46.58
18	GUNA	4492000	2090178	46.53
19	DINDORI	6543000	2923675	44.68
20	INDORE	1968000	863750	43.89
21	BURHANPUR	1698000	719714	42.39
22	MANDLA	5983000	2513797	42.02
23	DHAR	8852000	3655121	41.29
24	SINGRAULI	3371000	1381246	40.97
25	BHOPAL	970000	397260	40.95
26	NARSINGHPUR	1658000	677688	40.87
27	UJJAIN	2388000	968174	40.54

S. No.	District	Projected Person days	Person days Generated	Person days achieved (%)
28	RAJGARH	6945000	2814891	40.53
29	KHANDWA	4914000	1898555	38.64
30	SEONI	7486000	2844946	38
31	JABALPUR	2684000	988157	36.82
32	DAMOH	4287000	1552888	36.22
33	ANUPPUR	4742000	1698386	35.82
34	BETUL	6069000	2157524	35.55
35	SATNA	3421000	1199934	35.08
36	MANDSAUR	2736000	934140	34.14
37	TIKAMGARH	3934000	1334577	33.92
38	KHARGONE	6651000	2234743	33.6
39	ALIRAJPUR	3423000	1134430	33.14
40	SAGAR	4600000	1411300	30.68
41	SHAJAPUR	3072000	929426	30.25
42	***PANNA***	***4251000***	***1243850***	***29.26***
43	***REWA***	***4031000***	***1013942***	***25.15***
44	***SHEOPUR***	***1748000***	***433590***	***24.8***
45	***SIDHI***	***3496000***	***852166***	***24.38***
46	***JHABUA***	***4876000***	***1154217***	***23.67***
47	***RATLAM***	***3670000***	***782946***	***21.33***
48	***CHHATARPUR***	***4817000***	***900000***	***18.68***
49	***UMARIA***	***4802000***	***872356***	***18.17***
50	***BARWANI***	***5356000***	***508155***	***9.49***
51	***AGAR-MALWA***	***0***	***0***	***0***

PD achieved > 80% (Sr. No. 1-6) | **PD achieved < 80% and > 50%** (Sr. No. 7- 14) | **PD achieved < 50% and > 30%** (Sr. No. 15- 41) | **PD achieved < 30%** (Sr. No. 42- 51)

Source: Mahatma Gandhi NREGA portal, MoRD, GoI (As on 28 Feb 2014)

6.8.5 Organisational Structure and Stakeholder Participation (Scalability and Sustainability)

As indicated earlier, the success of the scheme lay in the participatory approach of local people and achievements were on account of active participation of 693 Gram Panchayats, 500 forest committees, 12,030 self-help groups to begin with. Vigilance and monitoring committees were formed at the district, block and village level headed respectively by MP, MLA, and a person other than the sarpanch of the village. The government machinery was involved only in tracking, monitoring, coordination, maintaining MIS and disbursing funds. The typical organisation structure for the district of Balaghat is as mentioned below:

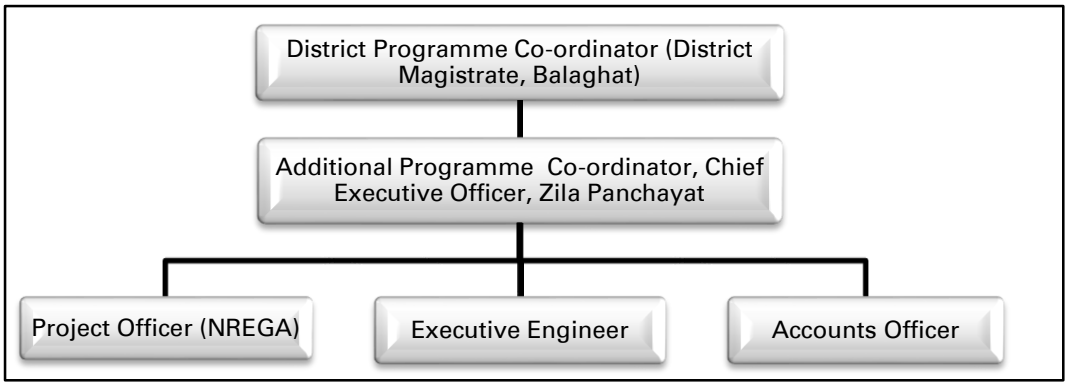


Figure 6.12 - District Level

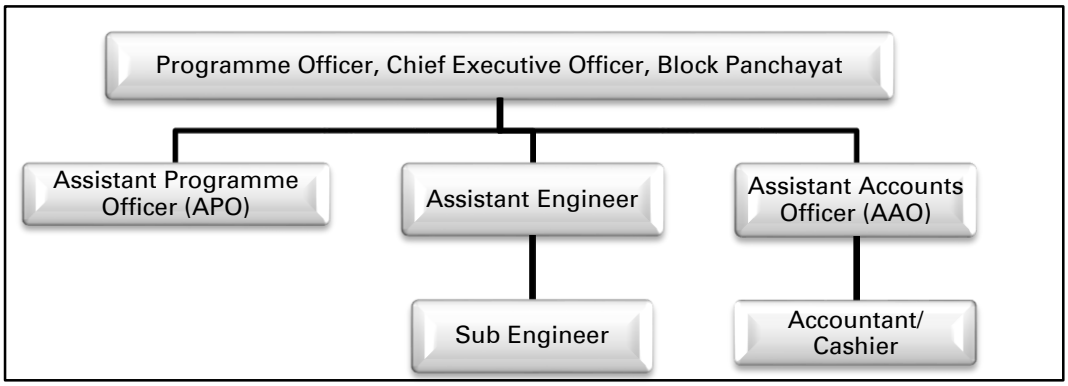


Figure 6.13 - Block Level

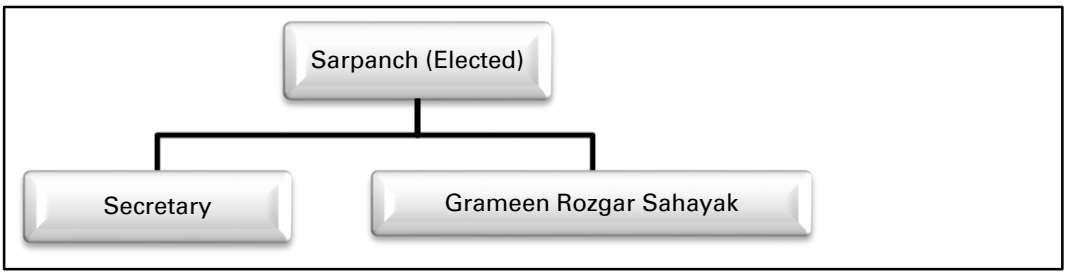


Figure 6.14 - Village Level

6.8.6 Technology Interventions (Scalability and Replicability)

Technology intervention has been minimal for the project, however with computerisation of banks there has been remarkable progress in the disbursal of wages. There are however some issues particularly with the co-operatives as well as the post offices, which do not have the core banking facility and hence disbursal takes a considerable amount of time. Hence, by introduction of computerisation facility, it would be possible to link all the blocks of the districts, enhance reach of the schemes, enable swifter disbursal of funds and gain confidence of the local people.

6.9 Shortfalls and Suggested Corrective Actions

Table 6.4 – Initiative shortfalls and suggested corrective actions

Weakness/Shortfall	Suggested Corrective Action
1. Migration/Exodus has started diminishing but has not stopped completely. More action needs to be taken to spread the news of the good work undertaken.	Growth of local artisans, handicraft self-help groups and small-scale industry needs to be encouraged.

Weakness/Shortfall	Suggested Corrective Action
2. Lack of computerisation in cooperative banks and post offices considerably hampers swift transfer of funds to the beneficiaries.	Implement core banking solutions in cooperative banks and post offices. Also, introduce the business correspondent (BC) system with micro ATMs to reach sections of the population living in remote areas.
3. With the basic infrastructure in place and basic agricultural and forestry gaining momentum, there is an increased need of introducing new schemes.	State and district administration should regularly assess the changing needs of the local population and devise new schemes after duly considering their feedback.
4. In the long-term, a very large programme such as the MGNREGS can impact availability of labour besides starving funds for investment in infrastructure and industrial development projects.	Education and re-skilling or up-skilling programmes should be run to teach the local people more productive techniques and self-sustainable livelihoods such as cash crop farming, horticulture, dairying, fishing, food processing etc. This will help poor citizens move out of low paying, manual labour-dependent occupations, educate their children and acquire vocational skills to help them engage in better paying professions. Eventually, the relatively better-off sections of the population must be 'weaned off' the NREGS.
5. **Inadequate reach to people in remote areas:** Some of the remote villages/hamlets may not be reached by the district administration/NREGS machinery on a regular basis.	The local community, esp. women's self-help groups (SHGs) must be made aware of their 'right to work' and their leaders entrusted with the task of communicating frequently and regularly with the district administration to plan and implement projects in their respective villages.
6. Inadequate reach of electricity, non availability of PCs and broadband connectivity mean that the 'ICT revolution' is giving the people of Balaghat a miss.	A lot needs to be improved in terms of electrification of villages, computerisation of Banks, Post Offices and Government Offices. CSCs need to be set up/strengthened in each block for use by the common people, so that youth can experience the power of information technology and move ahead in life.

6.10 Indicative Factors for Identification of Target States

As per the MoRD, Govt. of India, NREGS has helped to raise the average rural wage rate in India from Rs. 48 in 2004-05 to Rs. 138 in 2011-12. The wage rates are further proposed to be hiked starting 1st April 2014, as per a notification dated 13th February 2014.

Impact of MGNREGS: Rise in Average Rural Wage, 2004-05 to 2011-12

MGNREGA has successfully raised the bargaining power of agricultural labour, resulting in higher agricultural wages, improved economic outcomes, and reduction in distress migration

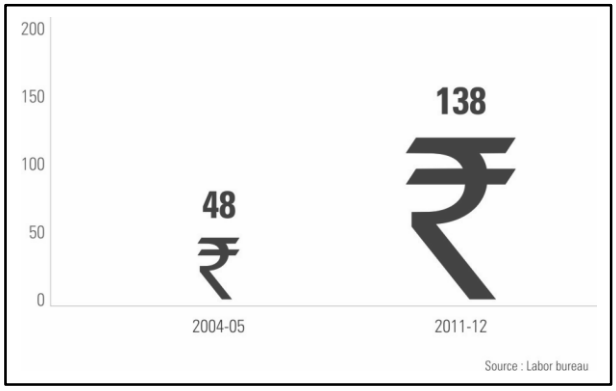


Figure 6.15 - Average RURAL Wages: All India
Source: Mahatma Gandhi NREGA portal, MoRD, GoI/PMO

Thus, one criterion to select backward states/districts for implementation of NREGS, through the convergence of resources of multiple departments is locations where the **daily rural wage rate is much lower than the national average**.

In terms of physical infrastructure qualification criteria, NREGS should be implemented in those districts where the **irrigation infrastructure is inadequate** to meet the cropping needs of the local farmers/cultivators or the legacy irrigation infrastructure is in a state of disrepair. A related criterion is **poor availability of ground water** in a state/district. If irrigation bore wells have been continuously going deeper in search of water over the years, then the state/district is a fit case to launch soil conservation and water body replenishment projects.

Finally, the **incidence of rural-urban distress migration** is another consideration for launching employment generation projects in a particular state/district. If rural-urban migration rates have been consistently above the state/national average, then the administration must plan to implement converged activities for year-round local employment generation by means of NREGA.

Some of the other strengths and positive outcomes achieved as a result of implementation of NREGS in Balaghat district of Madhya Pradesh are documented in the following section, for the reference and understanding of officials seeking to replicate the success in their own state.

By adopting the best practices already in vogue in the Implementation of NREGS in a highly Naxalite affected area such as Balaghat district, Madhya Pradesh and incorporating changes/modifications as suggested above, any other large or mid-size state of the country could roll out a similar scheme, especially in those areas which have experienced long years of Naxalite strife. Prime examples are states like Odisha, Chhattisgarh, Madhya Pradesh, Jharkhand, West Bengal and Bihar. Within these states the highest priority should be accorded to the eighty-eight districts identified for implementation of the MHA's Integrated Action Plan (IAP) and the twelve districts identified for implementation of the MoRD's Governance and Accelerated Livelihood Security (GOALS) - West Singbhum, Latehar, Palamu, Gumla, Sukma, Bijapur, Balrampur, Narayanpur, Malkangiri, Koraput, Kalahandi, and Nuapada.

6.11 Implementation Approach

Based on the 'Key Study Findings' enumerated in the chapter and the 'Shortfalls and Suggested Corrective Actions' outlined, a state government may use specific criteria such as average rural wage rate, incidence of distress migration, prevalence of water- and vector-borne diseases, IMR and MMR, school drop-out rates etc. to identify priority districts for implementation of a 'converged' MGNREGS. Some of these factors and guidelines for a 'model' replication practice are detailed below.

Table 6.5 - Critical Success Factors for Replication of the Initiative

Factor	Strength/Benefit
Scheme Scope & Coverage, Enabling Policy Interventions	1 Established communication with general population 2 Understanding of predominant issues and designing schemes for socio-economic upliftment, round the year job availability 3 Improving infrastructural amenities in form of roads and irrigation canals 4 Higher Involvement of tribals/marginalised as well as women

Factor	Strength/Benefit
	5 Better co-ordination amongst different Government Departments
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	1. Three TIER project monitoring system with the District, Block and Village level Organisations with a specific responsibility for each level 2. Periodic Social Audits undertaken 3. Proper upkeep and maintenance of MIS
Capacity Building and ICE Campaigns	1. Trainings provided to the panchayats for generating demand for funds 2. Proper co-ordination amongst different Government departments for swift implementation of projects.
Financial Viability	1. The Financial model adopted for this scheme seems sacrosanct and in certain cases merging different schemes have also proved to be successful
Organisational Structure and Stakeholder Participation	1 The splitting up of the organisation into three levels with appropriate delegation of authority has made the implementation of the NREGS scheme stronger. 2 Restricting the Line Departments to monitoring and/or involvement in large and technical projects have ensured efficiency and instilled confidence amongst them 3 Close co-ordination between different departments has also enabled efficient functioning/implementation of the scheme.
Technology Interventions	1. Some banks have computerisation, core banking services, which has enabled smoother transfer of funds to the beneficiaries at minimal time

Salient Features for Implementation of NREGS in Naxalite Affected Areas: Replication Guidelines

The overarching need is to knit together a holistic system comprising of:

1. Decentralised administrative set up – at District, Block and Panchayat level
2. A Committed force of Motivated Government Officials with reward and recognition of efforts
3. Creation of round the year self- sustaining livelihood for the populace
4. Establishing contacts with PRIs and local activists, understand and being empathetic to the important livelihood, infrastructure, health and education issues
5. Devise and design economic activity based on agro climatic condition, social fabric of the location
6. Enhance quality of infrastructure and improve connectivity to every nook and cranny of the block/district
7. Introduce modern amenities especially Wireless Broadband Services under the guidance of PRIs to showcase the benefits of modern technology to the general population

A robust monitoring/quality assurance/governance structure must be in place from "Day One" to ensure timely, transparent and fair redressal of complaints and queries at both the institutional as well as individual levels.

A formal mechanism of review of the scheme goals and objectives vis-à-vis changing ground realities and stakeholder expectations must be institutionalised, so that the scheme does not 'lose steam' in the absence of a visionary individual or change of priorities on the part of the political executive.

Based on some of the shortcomings encountered in the 'Implementation of MGNREGS in District Balaghat, MP' and the suggested corrective actions mentioned in the table under Section 6.9, the process flow chart and organisational structure charts below represent what may be termed as guidelines for a 'model' replication practice for effectively implementing the MGNREGS in Naxalite affected areas (districts/divisions of states) of the country.

Model Process for Implementation of MGNREGS in a Naxalite Affected District

Step 1: Accessing the Residents of Naxal-affected Blocks

This can be done by organising cluster meetings with the local community leaders at Haat bazaars. These meetings should be used for inputs to correctly assess the predominant socio-economic (livelihood), infrastructure, education and healthcare related problems of the populace and understand their priorities for development. For example, absence of employment opportunities/regular source of income, lack of road connectivity, presence of mainly small agricultural holdings with no irrigation facility, absence of schools and vocational skill development initiatives, absence of local health centre/government dispensary and so on.

This stage should be used for intensive rapport-building with the local population through intensive touring by revenue, police, forest and rural development department officers in the Naxalite infested areas. The expectations of the local people should be carefully understood and incorporated into the district MGNREGS plan.

Step 2: Selection of the MGNREGS Implementation Agency

The MGNREGS implementation approach in a Naxalite-affected district should aim to decentralise local level planning. Project selection and implementation management should be devolved to members of gram panchayats, forest committees and women's Self Help Groups. State/District Administration line departments should not be chosen as the implementation agency because of the following issues:

- Manpower available with the administration is usually inadequate in proportion to the quantum of sanctioned work under MGNREGS as the number and variety of projects being run under the scheme have increased. States have strengthened the local set-up by appointing an Assistant Engineer and an Assistant Accounts Officer (AAO) at block level to effectively monitor projects and disburse payments speedily. However, the Grameen Rozgar Sahayak, the lowest ranking government functionary who interacts on a daily basis with common village folk (MGNREGS workers) is usually paid Rs. 2,000 per month, which is clearly insufficient to run a family. These 'last mile' workers should be paid adequately so that they motivated to reach out to the target BPL population in remote villages
- Administration Line Department staff are prone to arm twisting by both Naxalites/Maoists and other vested interests
- Line Department officers and staff can be more effectively deployed for managing larger projects and technical inputs

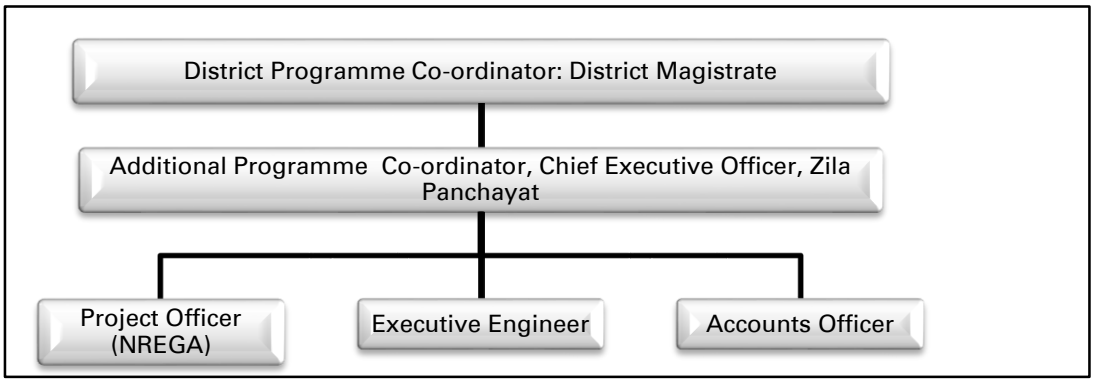


Figure 6.16 - District Level MGNREGS Organisation

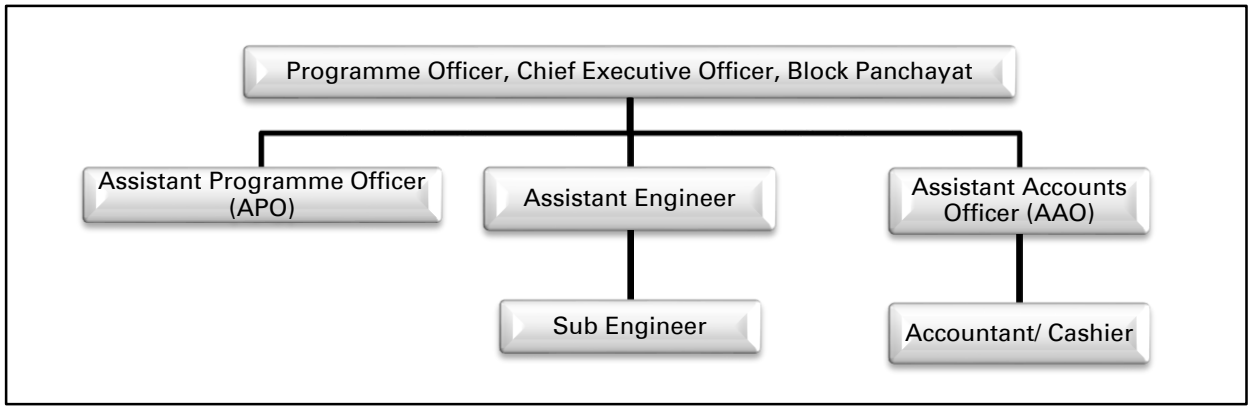


Figure 6.17 - Block Level MGNREGS Organisation

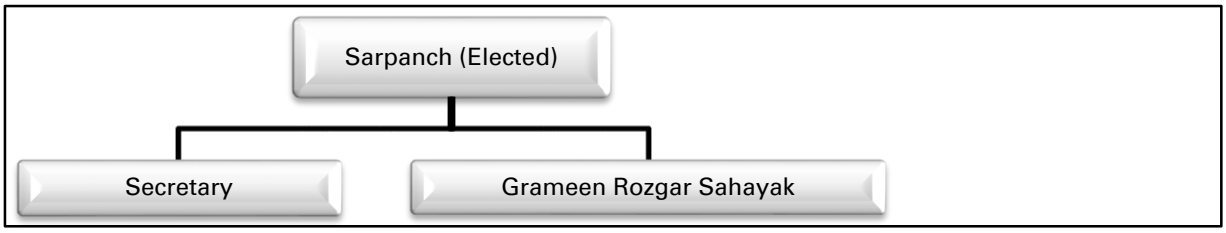


Figure 6.18 - Village Level MGNREGS Organisation

Step 3: Round-the-Year Employment Cycle

An Annual Employment Cycle should be developed by taking into account local agro-climatic conditions, existing cropping patterns, major 'non-farming' livelihood-generation activities, suitability of local soil, rainfall and irrigation infrastructure to cash crops/horticulture, dairy farming, poultry, fisheries, goat/sheep rearing, silkworm rearing and so on. Such a study will help the administration develop plans that suit local conditions and the needs of the people. A similar planning cycle has been indicated for District Balaghat in preceding section of the chapter.

Planning Commission of India (PCI) has demarcated the geographical area of India into 15 agro-climatic zones. These are further divided into more homogenous 72 sub-zones. The 15 agro-climatic zones of India are shown in the accompanying map and further listed out below:

List of 15 Agro-climatic Zones of India

1) Western Himalayan Region: Jammu & Kashmir, Himachal Pradesh, UP, Uttarakhand
2) Eastern Himalayan Region: Assam Sikkim, West Bengal & all North-Eastern states
3) Lower Gangetic Plains Region: West Bengal
4) Middle Gangetic Plains Region: UP, Bihar
5) Upper Gangetic Plains Region: UP
6) Trans-Gangetic Plains Region: Punjab, Haryana, Delhi & Rajasthan
7) Eastern Plateau and Hills Region: Maharashtra, UP, Odisha & West Bengal
8) Central Plateau and Hills Region: MP, Rajasthan, UP
9) Western Plateau and Hills Region: Maharashtra, MP & Rajasthan
10) Southern Plateau and Hills Region: Andhra Pradesh, Karnataka, Tamil Nadu
11) East Coast Plains and Hills Region: Odisha, Andhra Pradesh, Tamil Nadu & Pondicherry

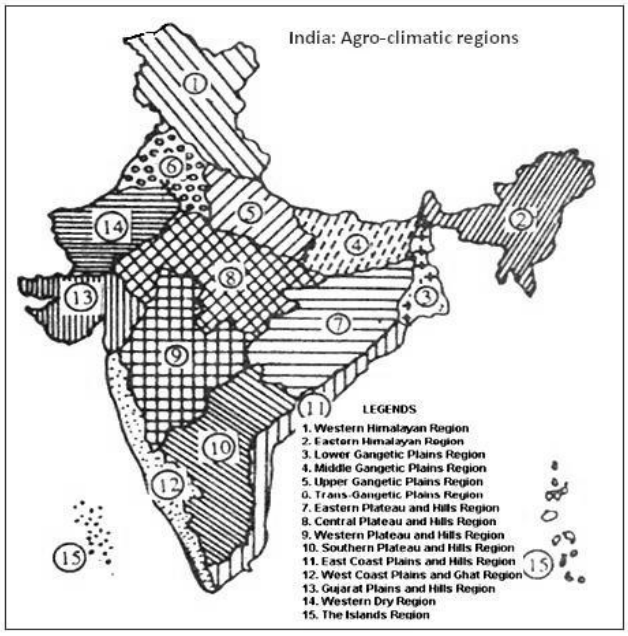


Figure 6.19 -15 Agro-climatic Zones of India

12) West Coast Plains and Ghat Region: Tamil Nadu, Kerala, Goa, Karnataka, Maharashtra
13) Gujarat Plains and Hills Region: Gujarat
14) Western Dry Region: Rajasthan
15) The Islands Region: Andaman & Nicaobar, Lakshya Deep

Based on the location of a district in a particular agro-climatic zone and percentage of population engaged in farming activities, collection and processing of forest produce, potential for fisheries etc., a suitable local livelihood development plan should be drawn up. The plan should aim to generate round-the-year income guarantee through convergence of schemes and effective utilisation of MGNREGS funds.

Step 4: Inter-departmental Coordination

Implementation of MGNREGA schemes in an under-developed Naxalite-affected area requires tackling development and security challenges simultaneously. Thus, a very high degree of co-ordination between Rural Development, Forest, Tribal Development, Health & Family Welfare, Public Health Engineering, Public Works and other departments is called for. Road connectivity should be established with remote villages, with inputs from the Police and Forest departments. Typically, the PWD is assigned responsibility for laying and maintaining for trunk roads, RES for link roads and gram panchayats for village roads. The District Administration must ensure that no conflict arises between the cycle of livelihood generating activities proposed under MGNREGA and seasonality of farm/forest activities practiced by the local population. Additionally, coordination between the GoI/Aadhaar initiative, the state government, PRIs, Banks and Post Offices must be streamlined in order to disburse payments to MGNREGS workers on a timely basis.

Muster Rolls have been known to be fudged, leading to leakage of funds. This issue must be suitably addressed, say, once every three months so that MGNREGS funds are not siphoned off. Banks are known to insist on maintenance of minimum balance of Rs. 500, staff are known to be rude and misguide poor, illiterate workers by diverting their payouts or simply ask workers to make repeat visits to collect their wages. Post Offices are also known to turn back workers, quoting a limit of Rs. 40,000 as the maximum cash transactions allowed per day.

Late payment of wages is the single biggest factor for dissatisfaction amongst MGNREGS beneficiaries. Thus, a model MGNREGS system must provide for adequate capacity in non-traditional, technology-enabled payment channels such as rural/mobile ATMs, business correspondents (BCs) of cooperative banks etc.

Case Study: MHA's Integrated Action Plan (IAP) in Naxal Affected Areas

The Planning Commission of India (PCI) spearheads implementation of the Integrated Action Plan (IAP) in 83 selected tribal and backward districts of the country for their accelerated development. The aim of this initiative is to provide public infrastructure and services in the affected districts. Therefore, the nature of major works/projects taken up by the districts under the IAP include construction of school buildings/school furniture, anganwadi centres, drinking water facilities, rural roads, Panchayat Bhawans/Community Halls, godowns/PDS shops, livelihood activities, skill development/vocational trainings, minor irrigation works, electric lighting, health centres/facilities, ashram schools, construction of toilets, construction of multi-purpose 'chabutras' (platforms), construction of passenger-waiting halls, special coaching classes for students, construction of ANM (auxiliary nurse and midwife) Centres, development of playgrounds etc.

IAP was conceptualised by the Planning Commission of India and implemented by the Union Ministry of Home Affairs to supplement the infrastructure deficit in Naxal-affected districts. Realising that road connectivity is a major bottleneck in Naxal-affected areas, Government of India aimed to connect each habitation (village/hamlet) in every IAP district within a period of three years from launch.

Under the existing IAP plan, a Committee headed by the District Collector initiates development projects related to infrastructure, health, education and employment in each of the 83 Naxal-affected districts. The Committee consists of District Forest Officer and Superintendent of Police. However, demands have been raised for the inclusion of representatives of the Panchayati Raj Institutions also in this Committee. It has also been demanded that conditions like compliance with the Forest Rights Act of 2006 and the Panchayat (Extension to the Scheduled Areas) Act of 1996 should be applied to the districts under IAP.

A suggestion was mooted that instead of a district, a block should be the unit for IAP to avoid spending money on areas that are already developed, such as the district headquarters. This demand has been approved and district level committees advised to modify their development plans accordingly. In August 2013, the Government of India increased the number of districts included under IAP to 88, in response to demands from state governments. The government plans to continue to spend Rs. 30 crore per district through the district-level committees.

The Government of India has also been approved modifications to the MGNREGS to suit the needs of Naxal-affected districts. For the effective implementation of MGNREGS, a Panchayat Development Officer and a Junior Engineer were appointed in each Gram Panchayat in the IAP districts with 75 per cent of cost to be borne by the Centre. It was also decided that all families affected by Naxal violence would be eligible for housing under the Indira Awas Yojana. The budget for the National Rural Drinking Water Programme in the IAP districts was also increased from Rs 750 crore to Rs 1,000 crore.

All the 88 districts under IAP are also covered under the National Land Records Modernisation Programme (NLRMP). In addition, it was decided to create a network of para-legal institutions in the Gram Panchayats to resolve land disputes, a major source of alienation of tribal people.

It is also planned that service sector jobs be provided to 3,00,000 unemployed youth in the 88 IAP districts during the Twelfth Five Year Plan period (2012-17), under the National Rural Livelihoods Mission (NRLM). The Ministry of Home Affairs, GoI also decided to start Public-Private Partnership initiatives for value addition in minor forest produce through involvement of women in Self Help Groups.

The Ministry of Panchayati Raj and Rural Development, GoI chalked out a plan for young professionals to take part in administrative reforms in the Naxal-affected areas. The scheme, called the Pradhan Mantri Rural Development Fellow, was launched in 2012-13. Three young professionals will be roped in under the scheme for a maximum of three years in each IAP districts to assist the District Collectors in rural development planning.

Many states including West Bengal have resorted to indigenous initiatives for such areas with encouraging results.

Case Study: MoRD's Governance and Accelerated Livelihood Security (GOALS)

Starting July 1, 2013, the Ministry of Rural Development (MoRD) launched the Governance and Accelerated Livelihood Security (GOALS). The United Nations Development Programme-assisted programme will be implemented in the districts of West Singbhum, Latehar, Palamu, Gumla, Sukma, Bijapur, Balrampur, Narayanpur, Malkangiri, Koraput, Kalahandi, and Nuapada. These districts, spread across Jharkhand, Chhattisgarh and Odisha, are the worst hit among the 88 districts categorised by the government as Left Wing Extremism (LWE)-affected.

The livelihood security programme aims to build provide economic empowerment to the local tribal population to stem the influence of Maoists. This would involve better harnessing of non-timber forest products, such as bamboo, honey, mahua and tendu leaves, on which the local communities are heavily dependent for their livelihood. The programme will also help

tribal communities gain access to innovative financial intermediation for local entrepreneurs.

The five-year Rs. 50-crore project will focus on enhancing community participation in local governance and improve market linkages for the poor, while simultaneously ensuring that state governments are more responsive.

The Ministry of Rural Development hopes that the project will yield 200 agriculture and forest-based enterprises owned and run by women and tribal youth, extend access to financial services for 3,00,000 tribal households, provide training in market-required skills to 50,000 youth, ensure MGNREGS assets are durable and raise awareness about entitlements as well as grievance redress mechanisms.

Now onwards, each of the 88 IAP districts will be given Rs. 5 crore annually while an additional Rs. 590 crore will be distributed among the districts on the basis of their population and area. This is in addition to an annual sum of Rs. 1,000 crore already sanctioned under the IAP for initiating development projects in 88 Maoist-affected districts.

Also, the entire cash given to the beneficiaries will be provided directly to them, and not through the District Commissioner or Block Development Officers' offices, to help the beneficiaries receive money faster and also avoid the involvement of middlemen, who often take away a large share of sanctioned budget. The government is in the process of opening bank accounts for each beneficiary so that the money can be deposited directly into their accounts.

Step 5: Inter-scheme Convergence and Regular Monitoring of Outcomes

Innovative use of MGNREGS funds and funds from other schemes like State Budget, BRGF, MPLADS, and MLA LADS in ratio of 60:40 can help to pool resources required for larger infrastructure and social development projects, e.g., a permanent, concrete road connecting block headquarters to key villages, wells could be constructed from MGNREGS funds while pumps can be procured using Swarnajayanti Gram Swarozgar Yojana (SGSY).

As indicated in the earlier sections, Vigilance and Monitoring Committees should be formed at the district, block and village level headed respectively by MP, MLA, and a person other than the sarpanch of the village. The government machinery should be involved only in tracking, monitoring, co-ordination, maintaining MIS and disbursing funds. The Monitoring Committees meet twice a week to take stock of progress achieved in implementing projects. The Programme Officer/Block-Level CEO is tasked with continuous physical monitoring of projects being executed in his area. After taking physical stock of the work completed and wage payouts made, Progress Reports are uploaded on a daily basis to the online portal of MGNREGA.

Case Study: Inter-Scheme Convergence in MGNREGS Forestry Programme, Dantewada, CG

District Profile
Population: 7.19 lac
Tribal Population: 78.5%
No. of forest dwellers (patta holders): 29,344
Area: 17,634 sq. km
Area under forests: 11,328 sq. km (64%)
Dense Forest: 62%
Total No. of Blocks: 11 (6 being Naxalite-affected)

Pilot District: Dantewada (including Bijapur)

Projects Sanctioned under IAP for 2009-10 – Total Allocation: Rs. 5.33 crore

- Aided natural regeneration: Rs. 0.43 crore
- Artificial regeneration: Rs. 1.39 crore
- Bamboo plantation: Rs. 0.82 crore
- Mixed plantation: Rs. 0.98 crore
- Regeneration of Herbs & Shrubs: Rs. 0.15 crore
- Pasture Development: Rs. 0.65 crore
- Soil and Moisture Conservation: Rs. 0.42 crore
- Entry-Point Activities: Rs. 1.30 crore
- Others, including fencing, micro planning, monitoring and evaluation,

awareness generation and overheads: Rs. 0.57 crore

NREGS-IAP Convergence: Objectives and Planning Strategy

- **Environmental Conservation and Development**
  - Intensify/supplement activities uncovered/having inadequate allocation, e.g., plant adoption, soil and moisture conservation etc.
  - Horizontal expansion of area covered under IAP (gap funding)
  - Support forestry operations as per working plan prescriptions through MGNREGS funs (to make up for inadequate funding in state budget)
- **Address Critical Livelihood Problems of Forest Dwellers residing in Fringe Areas**
  - Land development
  - Creation of irrigation facilities (dug wells) on private lands, to improve goodwill
  - Convergence with other plan schemes: Rashtriya Krishi Vikas Yojana (RKVY) for seeds and fertilisers, concessional agricultural credit, National Horticulture Mission (NHM), Indira Awas Yojana (IAY), Swarna Jayanti Swarozgar Yojana (SGSY), Total Sanitation Mission etc.
- **Village Resource Development**
  - Create durable rural assets: approach roads, water harvesting structures etc.

NREGS-IAP Convergence: Implementation Strategy

- **Technical Resources Support System**
  - Village resource planning and development, especially irrigation and forestry activities through contractual staff recruited at state/district/block level
  - Technical support for NREGA works
- **Implementing Agency**
  - Most works to be undertaken by the panchayats /Joint Forest Management Committees (JFMCs)
- **Capacity Building**
  - Target groups will be panchayats, local Self Help Group (SHGs) and Joint Forest Management Committees (JFMCs) along with NREGA and Forest Department staff
- **MIS and IT**
  - The current practices followed under NREGA will be incorporated in JFMC area for effective its monitoring

Revised Plan (Forestry) for MGNREGS in Dantewada CG 2009-10 – Total Allocation: Rs. 12.07 crore

- **Afforestation and Tree Plantation**
  - Cane plantation: 50 ha, Rs. 0.40 crore
  - Bamboo plantation: 210 ha, Rs. 0.31 crore
  - Nursery raising: Rs. 0.48 crore (4 works)
  - CPT (Protection): Rs. 0.95 crore (11 works)
- **Water Conservation and Harvesting, including pond, stop dam and stone pitching work: Rs. 4.05 crore (28 works)**
- **Land Development: 2,324.872 ha, Rs. 4.97crore**
- **Forest Roads: Rs. 1.22 crore (9 works)**
- **Bamboo and Tamarind Processing Centre: Rs. 0.58 crore**

Thus, through convergence of multiple schemes, budgetary and human resources can be leveraged in coordination to increase coverage and overall impact of NREGA development schemes. This is a significant strategy that will be useful to adopt by any state/district administration.

Overview of Proposed 'Model' NREGS Implementation Approach in Naxalite-Affected Areas

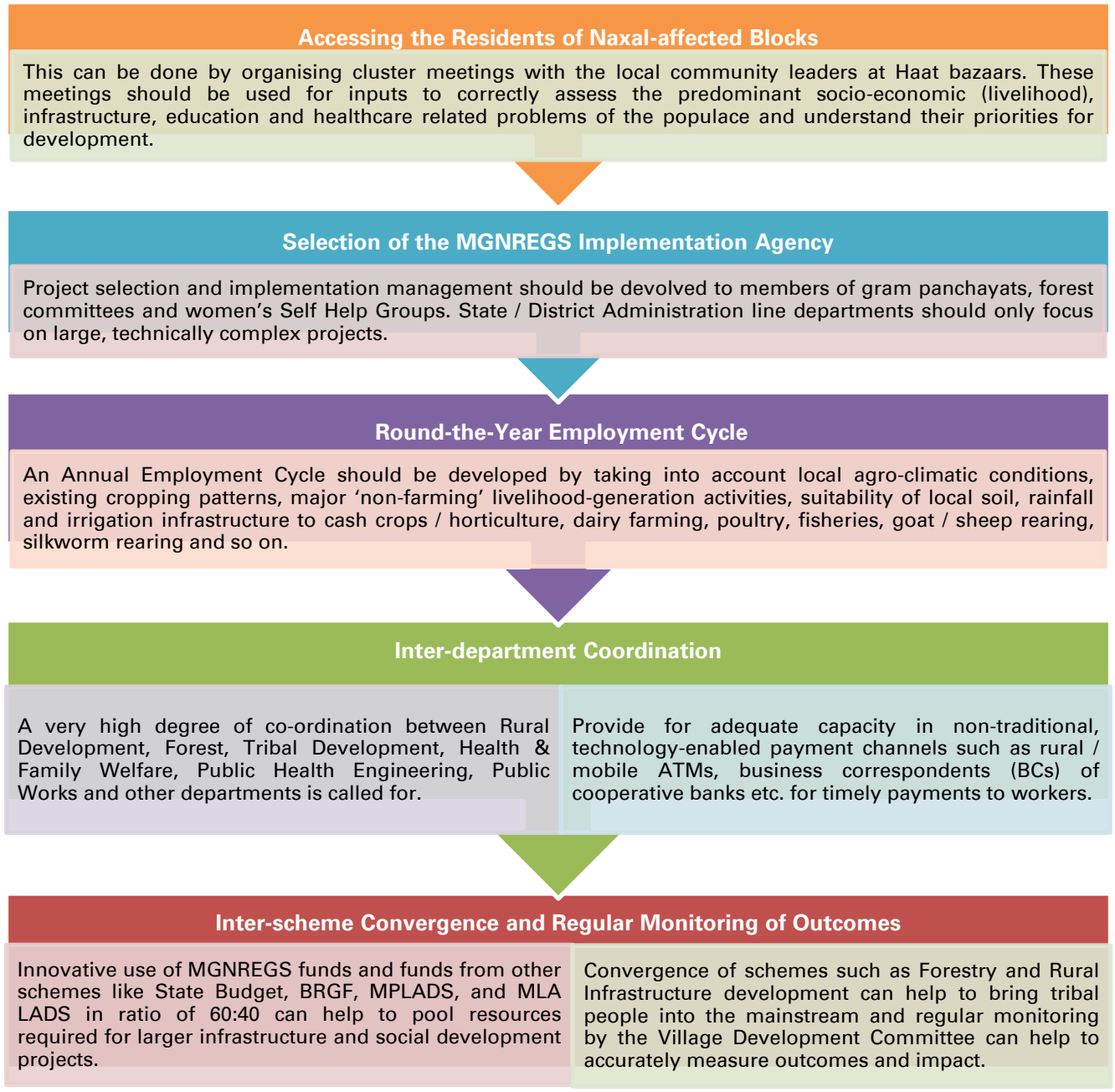


Figure 6.20 - Overview of proposed replication guidelines

Key Replication Processes: Indicative Timelines

MGNREGS is designed to run as a perennial programme with changing and evolving priorities, based on overall macro-economic environment, local agro-climatic conditions and needs of the BPL population. Balaghat district was brought under Integrated Action Plan (IAP) in the year 2010-11. As a result, the local administration targeted multiple 'public goods' at the poor residents of remote, Naxal-affected villages by leveraging GoI schemes such as Indira Awas Yojana (IAY), subsidised food grains through issue of BPL ration cards, health services through Mobile Health Clinics at weekly haat markets etc. Agriculture-related schemes such as bamboo plantation, timber plantation and irrigation-related schemes such as ponds, minor irrigation works etc. were run to provide favourable conditions for further improvement in income and livelihood for local small and marginal farmers. Widows and senior citizens

were identified and enlisted to receive social security pensions. Direct payments to MGNREGS beneficiaries by opening 'no frills' accounts and enabling payments through Business Correspondents (BCs) is in place since 2011. Educated (Class XII) local boys and girls were appointed as BCs. Mr. Vivek Porwal, IAS, Collector, Balaghat was instrumental in design and implementation of the 'Nidaan' software, which prevents wrong credit of NREGS wage payments and pensions; in case of any discrepancy in the beneficiary name or account number, the payment advice is returned for physical verification. BCs make payments through biometric verification (only when fingerprints of recipient match those stored in the MGNREGS database).

All these initiatives covered the full district and were highlighted and brought to the notice of residents of remote villages. These measures helped to reduce distress migration from Balaghat and the district was selected to receive the PM's national award in 2007-08, 2008-09 and again in 2011-12 (for enabling large scale e-payments to NREGA beneficiaries). The district has witnessed visible improvement in the standard of living of local people with a high penetration of mobile phones even in remote villages.

It is estimated that a total of 4,000 to 5,000 functionaries, including village, block and district level officers, PRI representatives, engineers, accountants and Gram Rozgar Sahayaks were involved in successfully running the MGNREGS programme in District Balaghat over 2 to 3 years (2005-06 to 2007-08/2008-09) to achieve the desired level of outcomes.

Other districts in Madhya Pradesh that are running MGNREGS on a similar pattern are Dhar, Barwani and Mandla.

These timelines are indicative timelines based on the interactions with the stakeholders involved in the initiative and secondary researches; the actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city. The indicative timeline may also vary depending on political and administrative will of policy makers and implementers.

Table 6.6 – Indicative Timelines

S. No.	Key Phase/Implementation Step	Indicative Timeline
1.	**Planning of MGNREGS activities in district in IAP mode:** Identification of key needs of district; Appointment of district- and block-level officials, Grameen Rozgar Sahayaks and their training; Works Planning and Coordination Meetings with PRI representatives; Sanction of budgets for approved works (< Rs. 10 lac directly to panchayats)	6 to 9 months
2.	**Execution of MGNREGS activities in District**: Enrolment of Workers from BPL families in Muster Roll; Appointment & Training of BCs; Opening of 'no-frills' accounts for workers (beneficiaries); Execution of Works; Monitoring by local village-level Committee; Auditing of Works and Expenditure Incurred	Post planning phase; Ongoing, perennial activities to help generate local level employment for one member of every BPL family
3.	**IEC Campaigns**: Build awareness about MGNREGS/IAP benefits amongst local BPL families, especially those living in tribal areas/remote villages	Ongoing activity

7 – Making Medicines Affordable, Rajasthan

India's pharmaceutical industry has established a reputation for supplying quality, generic drugs to markets around the world, especially Western Europe, Japan and North America. India's pharmaceuticals industry boasts of 74 firms with US FDA approval and 733 companies recognised by the WHO, exporting approximately Rs. 45,000 crore value generic drugs to global markets. India ranks No. 3 in the world in terms of volume of generic drugs exported. But, on the other hand, WHO estimates that approximately 65% of Indians do not have access to essential drugs or cannot afford them.

It was to address this specific problem that Government of Rajasthan decided to launch the "*Mukhyamantri Nishulk Dawa Yojana*" on 2nd October 2011, to make available the most commonly used generic drugs to all patients coming for treatment to government hospitals and PHCs throughout the 33 districts of the state.

7.1 Initiative Objectives

The objective of this initiative was to bring down the cost of generic medicines for all BPL patients in the state of Rajasthan, particularly in remote rural villages, tribal communities, the elderly, orphaned children, women and other disadvantaged sections of society.

The project was envisioned with the following objectives:

- To make medicines affordable to the poor
- To reduce out-of-pocket expenses by making medicines available, as low-cost generic medicines, through Low Cost Drug Shops
- To increase the accessibility of drugs, especially in the remote rural areas
- To decrease expenditure of the state exchequer, by bringing down
  - The government employees' healthcare reimbursement bill
  - The pensioners' medical fund expenses
- To promote rational use of drugs, minimising prescription of unnecessary drugs and by adopting Essential Drugs List and Standard Treatment Guidelines

7.2 Background: Rationale behind the Initiative

Traditionally, government-run hospitals used to dispense medicines free of cost to patients. But over a period of time, due to the increasing trend of consumerism, this practice came to a halt. A direct negative impact of this development was that the out-of-pocket expenditure incurred by patients saw a steep rise over the past few years. According to the NSSO, IPD (In-Patient Department) patients in Rajasthan incur an expenditure of Rs. 4,382 per patient per year, of which Rs. 3,187 is on procuring medicines alone. This is estimated to be the highest for any state in India, compared with only Rs. 102 per patient per year in Tamil Nadu. It is also estimated that 40 per cent of IPD patients in Rajasthan had to incur loans or sell their private property in order to meet the expenses towards medical treatment.

As per a recent estimate, 22 per cent of the world's patients live in India while the country produces 2 per cent of the global production of pharmaceutical drugs – 0.7 per cent essential drugs and 1.3 per cent not covered in the essential drugs category. From the 500 Active Pharmacological Ingredients (APIs) approximately 60,000 drug formulations are produced and sold to patients world-wide. However, as per the World Health Organisation (WHO), only 250-300 drugs are sufficient to cure over 90 per cent of the known diseases/medical conditions. Thus, clearly, the pharmaceutical industry promotes a large number of drugs purely for the motive of profit.

It has been a common practice amongst doctors (both private practitioners and govt. hospital doctors) to prescribe branded medicines to patients at the time of treatment for chronic or seasonal illness or surgery. This has adversely impacted poor patients, as they cannot afford the premium pricing of drugs sold by MNCs or large Indian drug companies. Paradoxically, the India pharmaceuticals industry has been a major supply base of generics to global markets, including developed countries of North America and Western Europe.

The above mentioned issues therefore led to the introduction of the "Mukhyamantri Nishulk Dawa Yojana".

7.3 Key Factors leading to Initiative

Problem 1: Medicines are beyond the reach of most people in India

- As per WHO 65% of the Indian population lacks regular access to essential medicines.
- The expenditure on health is the second most common cause for rural indebtedness.
- Over 23% of the sick don't seek treatment because they do not have enough money to spend.
- Over 40% of hospitalised patients have to borrow money or sell their assets to get themselves treated.

Problem 2: Medicine makes people poor
Where does the money for health expenditure (in India) come from?

Table 7.1 – Source of medical expenditure

Private out-of-pocket expenditure	79%
State governments	14%
Central Government	4%
Private investment	3%
Private insurance	0-1%

Source: RMSC, GoR

- Expenditure on drug constitutes about 50-80% of healthcare costs.
- Expenditure on health is responsible for shift of approximately 2% of the population of India from APL to BPL every year.
- A study by the World Bank shows that as a result of a single hospitalisation, 24% of people fall below poverty line in India in any given year.

7.4 Project Initiation: When and Where?

Government of Rajasthan announced the "*Mukhyamantri Nishulk Dawa Yojana*" during the presentation of the state's annual budget for FY 2011-2012 and the formation of Rajasthan Medical Services Corporation. Through the creation of this corporation Generic Drugs, Surgical and Diagnostic equipment are to be purchased by implementation of a transparent, centralised e-procurement system.

The Civil Hospital in each of the 33 districts of the state is being used for distribution of essential medicines to all patients free of charge, starting 2nd October 2011.

i. **Profile of implementer**: Department of Medical, Health and Family Welfare, Govt. of Rajasthan

ii. **Year and period when this initiative was started**: 2nd October 2011 across the 33 districts of Rajasthan state.

iii. **Team details**: Rajasthan Medical Services Corporation Ltd., www.rmsc.nic.in/organogram.html

7.5 Implementation Strategy Adopted

To overcome the problem of high cost of medical treatment and medicines faced by poor patients in Rajasthan, a pilot scheme was launched in Chittorgarh district and later extended to the full state. The scheme envisaged a three-pronged approach:

a. Educating patients regarding equal efficacy of non-branded generics as compared to expensive branded drugs
b. Advocacy campaign to ask doctors to prescribe drugs by generic salt name and not by the brand name, and influencing pharmaceutical companies to make available quality generic drugs to govt./rural cooperative stores, village SHGs and so on aimed at poor patients
c. Identifying quality generic drug manufacturers and enrolling them as suppliers to the state government and to local village cooperatives and SHGs.

Important stakeholders in the scheme are:

i. Beneficiaries (Patients)

The scheme is intended to benefit residents of all 33 districts of the state of Rajasthan, particularly BPL families, poor rural and tribal communities, senior citizens as well as thalassemia and haemophilia patients, as per details below:

1. Any patient who comes for treatment to a government hospital OPD or PHC.
2. Government Hospital IPD patients
3. All state officers, current and retired employees.
4. "Mukhyamantri Jeevan Raksha Kosh" beneficiaries:
   a) BPL/State BPL cardholders,
   b) "Aastha" cardholders,
   c) HIV/AIDS patients,
   d) Old-age pensioners (approved by the Department of Social Justice and Empowerment), Disabled and widow pensioners (approved by the Department of Social Justice and Empowerment),
   e) Jodhpur city families living in notified slums,
   f) Antyodaya Anna Yojana (AAY) and Banra district Saharia family APL cardholders,
   g) Annapurna Scheme beneficiaries,
   h) All families of Kathodi tribe,
   i) BPL/state BPL childless couples,
   j) Patients suffering from Thalassemia and Haemophilia,
   k) Orphanage children, physically and mentally retarded children, women residents of "Nari Niketans" or children who are students of schools approved/run by the Department of Social Justice and Empowerment.

ii. Rajasthan Medical Services Corporation (Implementing Agency)

Rajasthan Medical Services Corporation Ltd. (RMSC), a company registered under the Companies Act, 1956 is responsible for the procurement, quality control, storage and re-distribution of quality essential drugs, surgical equipment and supplies to government hospitals, CHCs, PHCs, dispensaries etc. in all 33 districts of the state of Rajasthan. Drugs are procured and stocked at District Drug Warehouses (DDWs). After due QC approvals, the drugs are released to the government-run healthcare institutions in each district for free distribution to poor patients via Drug Distribution Centres (DDCs).

iii. Government Hospitals/CHCs/PHCs/Dispensaries (Service Providers)

A healthcare provider shall be a hospital or nursing home in Rajasthan established for indoor medical care and treatment of disease and injuries and should be registered under the Rajasthan Clinical Establishments (Registration & Regulation) Act, 2006 and Pre-Conception and Pre-Natal

Diagnostic Techniques Act, wherever applicable.

iv. **District Drug Warehouse Controllers and their Teams (Supply Chain management)**

A District Drug Warehouse (DDW) has been set up in each of the 33 districts of Rajasthan, with Jaipur being served by two DDWs (34 DDWs in all). Each DDW is headed by a doctor, designated as DDW Controller. The function of the DDW is to make adequate supplies of quality-checked, essential drugs available at each Drug Distribution Centre (DDC) located in government-run hospitals, CHCs, PHCs etc. in their respective jurisdictions. DDWs are equipped with adequate modern storage infrastructure, computers, furniture and other essential electrical and lighting equipment. Each DDW Controller is assisted by a senior pharmacist, one or more junior pharmacist, an informatics assistant (IA) and a helper/cleaner.

v. **Incharge/Owner/Pharmacist of a Life Line Drug Store, Cooperative Drug Store or "Jan Aushadhi" Store (Last Mile Touchpoint)**

These are stores at government run hospitals, CHCs/PHCs/dispensaries or in small towns/rural areas that stock low priced essential drugs procured through the RMSC or through a cooperative SHG. There are three categories of Low Cost Drug Stores in operation:

- LLDS – Life Line Drug Stores
- Cooperative Drug Stores
- "Jan Aushadhi" Stores

7.6 Challenges Faced

To manage the system of indent (by govt. hospitals, CHCs, PHCs and dispensaries), procurement, quality checks and re-distribution of drugs throughout a vast state such as Rajasthan was a challenge by itself.

A second and more entrenched problem was the functioning of pharmaceutical companies and drug manufacturers who, as an industry practice followed globally, were used to incentivising doctors to prescribe medicines by brand name. Thus, while a cheaper and equally effective generic version of a drug would be available, doctors would prescribe an expensive, branded product.

Finally, being a part of the global drug supply chain, chemists would also promote more expensive, branded versions of medicines, very often with the 'unsolicited advice' that "government hospital medicines" were somehow of an inferior quality or completely spurious and ineffective in treating the patient's ailment.

7.7 Outcomes Achieved

In order to implement the "*Mukhyamantri Nishulk Dawa Yojana*" to procure quality, essential drugs, surgical and diagnostic supplies and equipment in a transparent and efficient manner, ensure inter-departmental coordination and effectively manage the system end-to-end, the Rajasthan Medical Services Corporation Ltd., www.rmsc.nic.in was established in July 2011 by the Department of Medical, Health and Family Welfare, Government of Rajasthan.

Drug Distribution Centres (DDCs) were set up in all government-run medical institutions in the state, to distribute the most commonly used essential drugs to patients free of cost.

Further, to ensure timely and adequate supply of quality essential drugs to patients throughout the state, 34 Drug Distribution Warehouses (DDWs) were established in the state – one DDW each in 32 districts plus two DDWs in Jaipur.

Thus, the RMSC serves to meet a strategic initiative of the state government – to make affordable medical care available to all residents of Rajasthan, by means of:

1) Free distribution of essential medicines of common use to patients, as a step towards making available better public health services.
2) Along with medicines and injections, surgical items of general use such as needles, disposable syringes, IV blood transfusion

sets, sutures for surgical stitches etc. are also to be made available for free to patients.

3) Reduction in the overall budgetary expenditure on general class of drugs by the state.
4) Lack of funds no longer deprives common people of the state from availing medical services.

7.8 Key Study Findings

7.8.1 Scheme Scope & Coverage, Enabling Policy Interventions (Impact and Utility)

GoR Solution to Improve Access to Affordable Medicines – Mukhyamantri Nishulk Dawa Yojana

- As a tribute to the Father of the Nation launched on 2nd October 2011
- Most Commonly used essential drugs are provided free of cost
- Currently 410 drugs, 70 surgical and 72 suture items are provided to all Rajasthan Govt. Hospitals/clinics
- Plan is to provide over 450 drugs and about 150 surgical and suture items

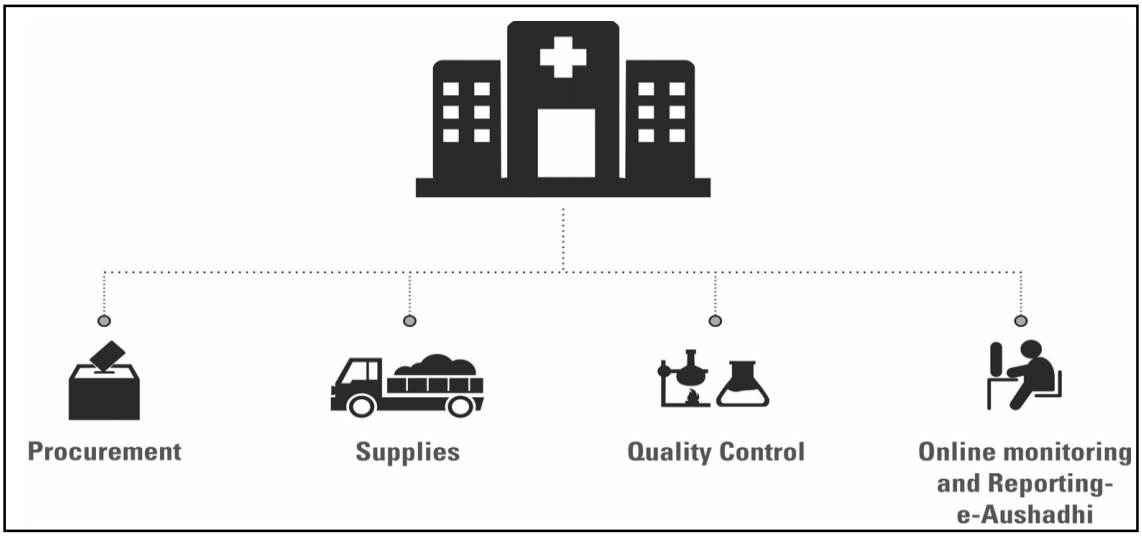


Figure 7.1 - Establishment of Rajasthan Medical Services Corporation, www.rmsc.nic.in

Table 7.2 - What RMSC Procures & Makes Available Currently

Institution Type	Drug Items	Surgicals	Suture Items
Medical College Hospitals	410	70	72
District/Sub-district/Satellite Hospitals	375	60	62
CHCs	150-225	50	50
PHCs/Dispensaries	75-150	25	25
Sub-Centres	20-30	0	0

Along with 71 National Programme Drugs supplied by GoI

Table 7.3 - Increase in number of patients in Govt. institutes (2nd October 2011 to 31st March 2012)

Before	After MNDY
44 Lac patients per month	62 Lac patients per month

Decrease in out of pocket expenditure

- Every day Rajasthan govt. hospitals and dispensaries give out quality drugs free of charge to more than 2 lac patients on average (between 1.75 lac to 2.50 lac patients per day)
- The mean cost of medicine per patient is around Rs. 30
- 'Open market' cost of drugs purchased from a retail chemist used to be around Rs. 300-500 per patient

Figure 7.2 - Scheme Coverage: All 33 Districts of Rajasthan covered through 34 DDWs

7.8.2 Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure (User Satisfaction)

Transparent Open Tender System

- e-Procurement
- Only manufacturers/ direct importers can participate
- Only those bidders can participate who have an annual turnover in excess of Rs. 20 crore
- GMP Certificate
- Minimum 3 years experience of manufacturing drugs

RMSC Quality Assurance

- All drugs received are stored in the quarantine area of the DDW
- Samples are sent to the QC cell at RMSC Head Office Jaipur
- RMSC HO codes the samples and sends these to empanelled labs for testing
- Examination of samples is carried out as per pharmacopeias
- If a sample is found "as of standard quality", only then is the DDW given a go-ahead to issue the drugs to the local govt. hospital/dispensary

In spite of the fact that pharmaceutical companies provide their mandatory in-house test report on each batch of drugs supplied to RMSC, the Corporation follows it up with a second round of testing through accredited labs. The objective of implementing this "best practice" is to ensure that only drugs of verified quality and efficacy are released to govt. hospitals and dispensaries for distribution to poor patients.

7.8.3 Capacity Building and IEC Campaigns (Utility and Sustainability)

Figure 7.3 - Clean, safe, efficient storage & re-distribution facilities (34 District Drug Warehouses (DDWs) throughout the state)

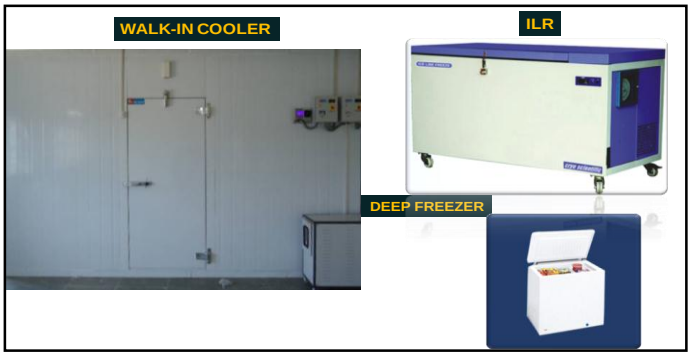


Figure 7.4 - Cold Storage Facilities at DDWs

Infrastructure and Staff Roles at RMSC DDWs

To implement the "*Mukhyamantri Nishulk Dawa Yojana*" effectively, a District Drug Warehouse (DDW) has been set up in each of the 33 districts of Rajasthan, with Jaipur being served by two DDWs. The function of the DDW is to make adequate supplies of quality-checked, essential drugs available at each Drug Distribution Centre (DDC) located in a government-run hospital or PHC in their respective jurisdictions.

Each DDW is provided with the following infrastructure:

- A Cabin Space/Work Area for the DDW Staff
- A Quarantine Section
- Cold Storage
- Computer Section
- Goods Loading-Unloading Area
- Clear Passage for Ingress and Exit of Transport Vehicles

Human Resources assigned to each DDW:

- Officer Incharge (District Project Coordinator, RHSDP)
- Store Incharge/Senior Pharmacist
- Junior Pharmacists
- Computer/Data Entry Operator (now upgraded to Information Assistant)
- Helper/Cleaner

Promoting Rational Use of Drugs amongst Doctors: Key IEC Activities Undertaken in Rajasthan

1. Sensitisation of doctors about the needs of poor patients and orientation towards rational use of drugs (through seminars, conferences and review meetings).
2. Write prescriptions on self-carbonated double prescription slips; diagnosis must be written.
3. Write generic, salt names of drugs (not brand names).
4. Select out of Essential Drug List (EDL).
5. Follow Standard Treatment Guidelines.
6. Constitution of Drugs and Therapeutics Committee.
7. Prescription Audit.

7.8.4 Financial Viability (Sustainability)

Table 7.4 - Advantage of economies of scale (cost comparison)

Disease/Use	Name of Drug	Pack Size	Equivalent Popular Brand	MRP (Rs.)	RMSC Tender Price (Rs.)
Pain killer	Diclofenac Sodium Tablets IP 50 mg	10 Tab Strip	Voveran (Novartis)	31.73	1.24
Cholesterol lowering drug	Atorvastatin Tablets IP 10 mg	10 Tab Blister	Atrova (Zydus)	103.74	2.98
Heart disease	Clopidogrel Tablets IP 75 mg	14 Tab Strip	Plavix (Sanofi)	1,615.88	8.54
Diabetes	Glimepiride Tablets IP 2 mg	10 Tab Strip	Amaryl (Aventis)	117.40	1.95

On the one hand, the competitive, transparent e-Procurement system followed by RMSC has ensured that pharmaceutical companies supply drugs at very competitive rates, for free distribution to patients at Rajasthan government hospitals, CHCs, PHCs and dispensaries.

Further, the key financial benefit that has accrued to the state on account of implementation of this system is a saving estimated to be in the range of Rs. 180 crore in FY 2012-13 alone, which would be otherwise incurred towards reimbursement for drugs purchased by state government employees, pensioners and other beneficiaries.

7.8.5 Organisational Structure and Stakeholder Participation (Scalability and Sustainability)

Table 7.5 - RMSC Board of Directors

S. No.	Functionary	Designation/Role in RMSC
1	Principal Secretary, Medical & Health, GoR	Chairman
2	Principal Secretary (Medical Education), GoR	Director
3	Principal Secretary (Ayurveda), GoR	Director
4	Secretary (Finance – Expenditure), GoR	Director
5	Mission Director, NRHM, Rajasthan	Director
6	Director, IEC Bureau, Rajasthan	Director
7	Director, Public Health, Rajasthan	Director
8	Director, RCH	Director
9	Director, AIDS Control & Prevention/Hospital Admin., Rajasthan	Director
10	Financial Advisor, Directorate of Medical & Health, Rajasthan	Director
11	Financial Advisor, National Rural Health Mission, Rajasthan	Director
12	Drugs Controller, Rajasthan	Director
13	Managing Director, RMSC	Secretary to GoR

RMSC is registered under the Companies Act, 1956. The board of directors is drawn from various related departments that deal with the subjects of Medical & Health Services, Medical Education, Public Health, Rural Health, AIDS Control & Prevention, Drug Licensing, Manufacture and Procurement, Communication & Publicity and Finance. The cross-functional nature of the Board of Directors allows RMSC to draw on the expertise of stakeholders from multiple disciplines.

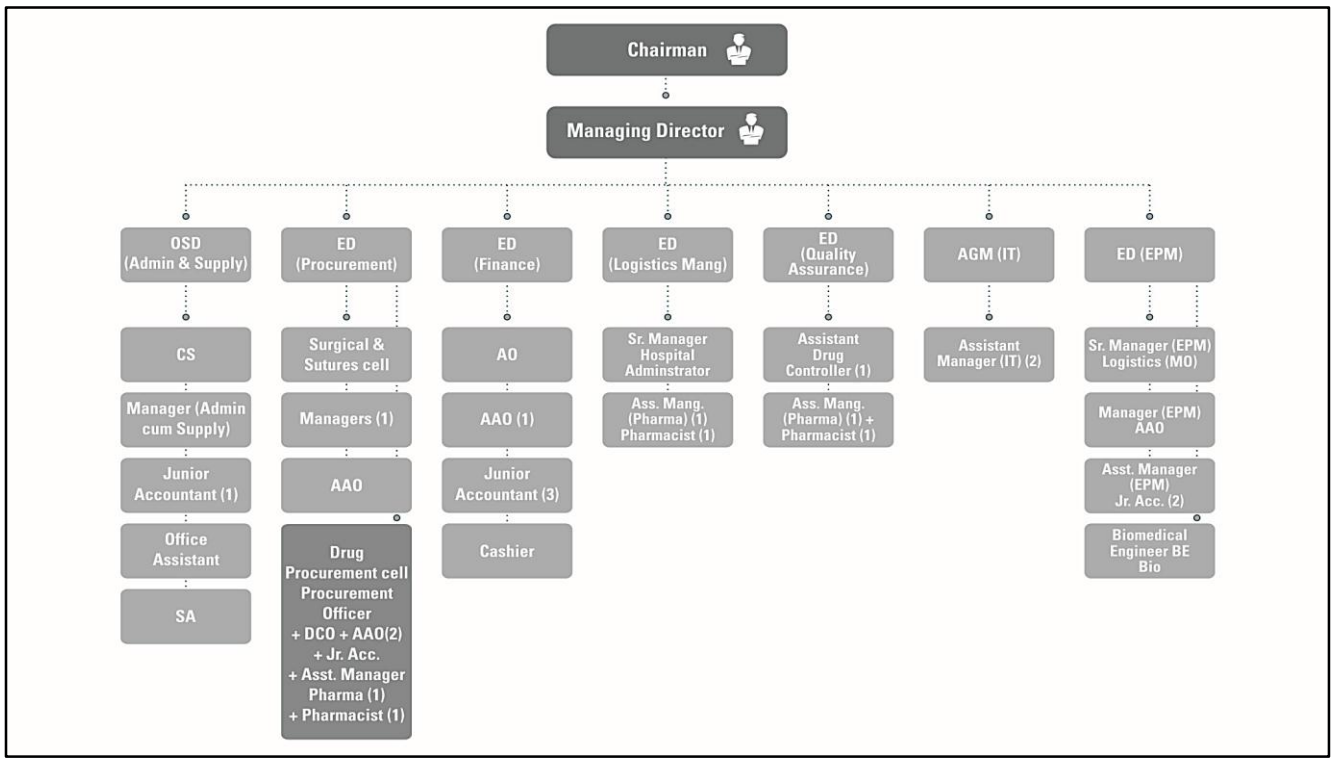


Figure 7.5 - RMSC Organisation Structure: Head Office

RMSC is able to understand and incorporate the latest developments in the fields of medicine, treatment procedures, pharmacology etc. and formulate best practices to understand and monitor drug licensing, manufacture, quality control, storage and distribution. The day to day administration of the Corporation is looked after by the Managing Director. Professionals from various faculties drawn on deputation, work in the Corporation to assist the Managing Director.

The major departments housed at the RMSC HO at Jaipur are Procurement, Finance, Logistics Management, Quality Assurance, Equipment Procurement and Maintenance, IT and Administration-cum-Supply. Each department works in close coordination to implement a seamless procurement, QC and re-distribution process.

7.8.6 Technology Interventions (Scalability and Replicability)

To improve their capacity to effectively perform the assigned functions, each DDW is equipped with PCs, connected via network to an online monitoring and reporting solution developed and maintained by C-DAC's NOIDA centre – **e-Aushadhi, Advanced Drug Warehouse Management System**.

The online software carries a list of district-level medical institutions served by the DDW, their indents, supply position and shortage or "NA hits", if any. These NA hits show up on the monitoring reports generated by the central IT team at RMSC HO and serve to alert the procurement and logistics management teams to either arrange for fresh supplies or check for possible causes of disruption in the distribution chain, if any.

IT-Based system to manage issue of drugs

Figure 7.6 - Drug distribution centres (14,964 DDCs across Rajasthan for distribution of drugs to poor patients)

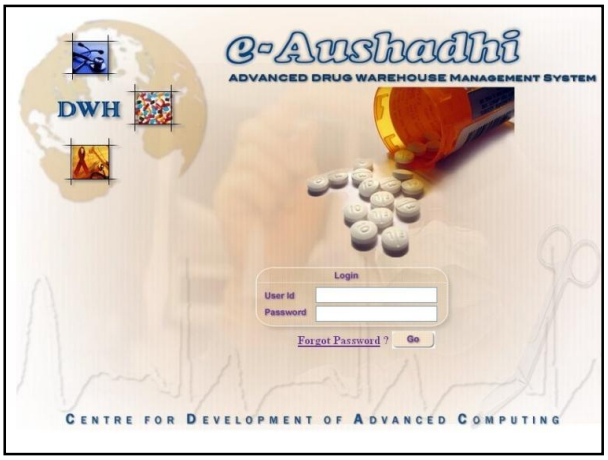


Figure 7.7 - Computerised inventory management through e-Aushadhi online software

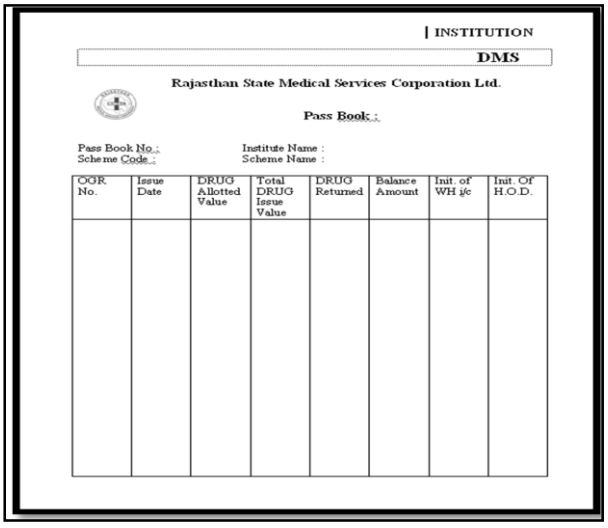


Figure 7.8 - Drugs are issued using passbook system

7.9 Shortfalls and Suggested Corrective Actions

Table 7.6 – Initiative shortfalls and suggested corrective actions

Weakness/Shortfall	Suggested Corrective Action
1) Lack of availability of high value, critical care drugs and surgical implants: Amongst critical illnesses, only haemophilia and thalassemia drugs are being provided to poor patients through the RMSC/GoR hospitals and clinics. Medication for other critical illnesses/rare diseases/life-threatening conditions are not covered.	A periodic expert review of the number of medicines and critical care equipment/surgical implants needs to be undertaken to ensure that poor patients in Rajasthan are able to avail treatment for life-threatening conditions, which are normally beyond the reach of the average citizen due to the prohibitive costs and shortage of specialist doctors.
2) Efficacy of Medicines: One of the reasons patients would buy expensive, branded drugs for treatment was that these were perceived to have better efficacy.	Findings of RMSC QC reports should be published and highlighted through IEC campaigns and media in order to stem the trend of prescription, purchase and consumption of expensive, branded drugs. This should be reinforced by messages and quotes from leading, reputed doctors and surgeons to their fraternity to prescribe only generic, low cost essential drugs for treatment of common ailments.
3) Understaffing at government healthcare service delivery institutions, succession planning: It is estimated that a government hospital doctor examines an average of 100 or more patients per day in Rajasthan. This heavy workload may lead to human error of judgment and improper diagnoses of patients' conditions. As of December 2013, it is estimated that GoR healthcare service delivery institutions had a shortage of nearly 9,000 doctors.	GoR needs to urgently put in place an action plan to recruit and appoint qualified doctors at government-run healthcare service delivery institutions. This may also require a review of the working conditions, remuneration and allowances of doctors. It is also important to hire specialist doctors and surgeons for providing critical care to poor patients at affordable cost.
4) Procurement of Health & Nutritional Supplements: Rajasthan is one of independent India's poor 'BIMARU' states with high IMR/MMR rates. So, it is important to consider enriching the dietary/food intake of members of BPL families, especially young children and expectant mothers with adequate nutritional/health supplements, as necessary.	RMSC/Department of Medical, Health and Family Welfare GoR can enter into an understanding with FMCG companies to make available useful, health and nutritional supplements to BPL families at affordable prices.

Weakness/Shortfall	Suggested Corrective Action
5) State-level RMSC team: Many of the professionals working for the RMSC are on 'deputation' from their parent departments such as Drug Controller Rajasthan or Dept. of Medical, Health and Family Welfare. While these professionals play a very critical role in defining/updating the drug procurement policy, QC guidelines, identifying new entries/retiring old, obsolete drugs from pharmacopoeia etc., many of them are driven by a personal passion for their work. A change in the political executive's priorities may act as a source of de-motivation for some of these professionals and force them to revert to their parent departments.	RMSC/Dept. of Medical, Health and Family Welfare GoR must examine the feasibility of setting up a dedicated cadre.
6) Lack of seamless inter-linkage between government hospital HMIS/HRMS system and RMSC e-Aushadhi system: While the 'e-Aushadhi' system is very effective in monitoring the receipt, storage and re-distribution of drugs, there is no 'single view' of medicine procurement and healthcare services delivery.	Department of Medical, Health and Family Welfare GoR should evaluate building a seamless, 'single sign-on' IT system that provides a holistic view of medicine procurement and delivery of healthcare services to the state's medical services and drug control administrators. This can help the state evaluate and assess the efficacy of certain types of treatment procedures, when administered in combination with low cost, quality, essential drugs.

7.10 Indicative Factors for Identification of Target States

According to WHO's **"The World Medicines Situation"** (2011 edition):

- Per capita pharmaceutical expenditures in 2005/2006 ranged from US$ 7.61 in low-income countries to US$ 431.6 in high-income countries, with considerable variation between income groups in each country. Compared to 1995, the rate of increase is greater in middle- and low-income countries.
- As per 2006 data, sixteen percent of the world's population living in high-income countries accounted for over 78% of global expenditures on medicines.
- During 2006, the measured Total Pharmaceutical Expenditure (TPE) accounted for 1.41% to 1.63% of Gross Domestic Product (GDP) by income groups and regions although there is considerable variation between countries ranging from 0.2% to 3.8% of GDP.
- TPE is closely related with both Total Health Expenditures (THE), and with GDP. The proportion spent on medicines is higher in low per capita income countries. In 2006, on average 24.9 % of THE was incurred on medicines, with a wide range from 7.7% to 67.6%.
- Between 1995 and 2006 the private share of TPE increased in all but high-income countries.
- TPE is determined by price and quantity of medicines purchased. In countries with low prices and high per capita TPE addressing the rational use of medicines is critical to control TPE and TPE growth.

- Additional policies on medicine prices may be required to ensure equitable access.
- Millennium Development Goal (MDG) 8-E expresses a global commitment to ensure that access to essential affordable medicines is achieved by 2015. To achieve this goal an increase in spending on medicines in low- and middle-income countries may be required. This could be achieved by an increase in health insurance coverage or increased public expenditure.

According to Dr. Anita Kotwani, Dept. of Pharmacology, VP Chest Institute, University of Delhi, writing for Economic & Political Weekly ("Tracking Medicine Prices in the Supply Chain", EPW, 28th December 2013), the National Pharmaceutical Pricing Policy brings all medicines in the National List of Essential Medicines, 2011 under price control. However, in order to bring transparency and to make medicines more affordable while providing industry with enough incentives, we need to know the manufacturer's selling price and add-on costs as the medicine moves along the supply chain till it reaches the consumer. The findings of Dr. Kotwani's paper indicate that the patient does not benefit from trade schemes, marketing strategies, or the free pharmaceutical market. Brand loyalty and marketing strategies do not allow "real" competition. Her paper makes a number of valid recommendations to make medicines affordable to the common citizen of India and other developing nations such as Indonesia, Malaysia, Thailand and Cambodia.

For a country like India, with only 6.49 doctors per 10,000 people and private out-of-pocket healthcare expenditure estimated at 60% (*Source: FORBES India magazine, November 15, 2013 - http://forbesindia.com/article/world-watch/what-govts-spend-on-health-care/36443/1*), it is imperative to explore new models such as Public Private Partnership (PPP) in order to improve the reach of medical services to the poor and those living in remote, rural/tribal communities. The added advantage of such a system can be the overall lowering of healthcare costs for the common citizen, through 'economies of scale' and optimal utilisation of available healthcare infrastructure in both the public and private sectors.

Thus, states with the following indicators (based on latest information available from Planning Commission of India, Ministry of Health and Family Welfare or Indian Medical Association) can benefit immensely by institutionalising a holistic public drug procurement and distribution programme, in coordination with a public health insurance scheme:

a) Large proportion of BPL population;
b) High Out-of-Pocket Private Expenditure on Healthcare & Medicines;
c) Low availability of doctors per 1,000 population;
d) Low availability of hospital beds per 1,000 patients;
e) Lower than average rural life expectancy, and
f) Low availability of Recovery Cranes and Ambulances by state (under National Accident Relief Service for FY 2011-2012).

The long term benefits would include not just better health indicators and higher average life expectancy, but lower indebtedness due to high medical expenses and thereby more disposable income to spend on other important areas such as housing, education and nutrition. State drug controllers and health administrators are encouraged to review the suggestions of this study in the specific context (above-mentioned indicators) of their respective states and the recommendations in the following section.

Table 7.7 - Number and Percentage of Population below poverty line by states - 2011-12 (Tendulkar Methodology)

S. No.	States	Rural		Urban		Total	
		%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)
1	Andhra Pradesh	10.96	61.80	5.81	16.98	9.20	78.78
2	Arunachal Pradesh	38.93	4.25	20.33	0.66	34.67	4.91
3	Assam	33.89	92.06	20.49	9.21	31.98	101.27
4	Bihar	34.06	320.40	31.23	37.75	33.74	358.15
5	Chhattisgarh	44.61	88.90	24.75	15.22	39.93	104.11
6	Delhi	12.92	0.50	9.84	16.46	9.91	16.96
7	Goa	6.81	0.37	4.09	0.38	5.09	0.75
8	Gujarat	21.54	75.35	10.14	26.88	16.63	102.23
9	Haryana	11.64	19.42	10.28	9.41	11.16	28.83
10	Himachal Pradesh	8.48	5.29	4.33	0.30	8.06	5.59
11	Jammu & Kashmir	11.54	10.73	7.20	2.53	10.35	13.27
12	Jharkhand	40.84	104.09	24.83	20.24	36.96	124.33
13	Karnataka	24.53	92.80	15.25	36.96	20.91	129.76
14	Kerala	9.14	15.48	4.97	8.46	7.05	23.95
15	Madhya Pradesh	35.74	190.95	21.00	43.10	31.65	234.06
16	Maharashtra	24.22	150.56	9.12	47.36	17.35	197.92
17	Manipur	38.80	7.45	32.59	2.78	36.89	10.22
18	Meghalaya	12.53	3.04	9.26	0.57	11.87	3.61
19	Mizoram	35.43	1.91	6.36	0.37	20.40	2.27
20	Nagaland	19.93	2.76	16.48	1.00	18.88	3.76
21	Odisha	35.69	126.14	17.29	12.39	32.59	138.53
22	Punjab	7.66	13.35	9.24	9.82	8.26	23.18
23	Rajasthan	16.05	84.19	10.69	18.73	14.71	102.92
24	Sikkim	9.85	0.45	3.66	0.06	8.19	0.51
25	Tamil Nadu	15.83	59.23	6.54	23.40	11.28	82.63
26	Tripura	16.53	4.49	7.42	0.75	14.05	5.24
27	Uttarakhand	11.62	8.25	10.48	3.35	11.26	11.60
28	Uttar Pradesh	30.40	479.35	26.06	118.84	29.43	598.19
29	West Bengal	22.52	141.14	14.66	43.83	19.98	184.98
30	Puducherry	17.06	0.69	6.30	0.55	9.69	1.24
31	Andaman & Nicobar Islands	1.57	0.04	0.00	0.00	1.00	0.04
32	Chandigarh	1.64	0.00	22.31	2.34	21.81	2.35
33	Dadra & Nagar Haveli	62.59	1.15	15.38	0.28	39.31	1.43
34	Daman & Diu	0.00	0.00	12.62	0.26	9.86	0.26
35	Lakshadweep	0.00	0.00	3.44	0.02	2.77	0.02
	All India	**25.70**	**2166.58**	**13.70**	**531.25**	**21.92**	**2697.83**

Source: Planning Commission of India

Notes:

1 *Population as on 1st March 2012 has been used for estimating number of persons below poverty line. (2011 Census population extrapolated)*

2 *Poverty line of Tamil Nadu has been used for Andaman and Nicobar Island.*

3 *Urban Poverty Line of Punjab has been used for both rural and urban areas of Chandigarh.*

4 *Poverty Line of Maharashtra has been used for Dadra & Nagar Haveli.*

5 *Poverty line of Goa has been used for Daman & Diu.*

6 *Poverty Line of Kerala has been used for Lakshadweep.*

The goal should be to arrive at an optimal model of public healthcare services delivery, supported by adequate supplies of quality, affordable drugs.

7.11 Implementation Approach

The guidelines for replication of a 'model' improved practice for making available affordable medicines to poor patients in states represented below should be read along with the preceding section and the 'Outcomes' and 'Study Findings' detailed in the earlier sections. The guidelines are meant to provide a structure for efficient and effective roll-out of the same.

Table 7.8 - Critical Success Factors for Replication of the Initiative

Factor	Strength/Benefit
Scheme Scope & Coverage, Enabling Policy Interventions	**1) Standard Treatment Guidelines (STGs) and Prescription Audits**: The publication of standard treatment guidelines ensures to a large extent that doctors become conscious about not prescribing unnecessary drugs to patients approaching them for treatment. RMSC/Dept. of Medical, Health & Child Welfare, GoR further undertake a compulsory 1% audit of all prescriptions written by government doctors. These measures ensure that expensive, branded drugs are not prescribed to patients in Rajasthan, especially poor patients who visit government-run hospitals, CHCs, PHCs and dispensaries for treatment. **2) Simple Eligibility Criteria**: BPL families or any individual normally resident in the state of Rajasthan is eligible for free medicines from a government-run hospital, CHC, PHC, dispensary etc. **3) Free/Subsidised Medical Treatment and Drugs**: Free treatment and subsidised essential medicines available to an average of 2 lac patients per day in Rajasthan state government-run hospitals, CHCs, PHCs, dispensaries and sub-centres through 14,964 DDCs. Quality, low cost essential drugs also made available to Rajasthan residents through LLDSs, Cooperative Stores and "Jan Aushadhi" stores.
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	**1) Monitoring of Online Procurement, Quality Control and Re-distribution Processes**: The RMSC e-Aushadhi solution allows real-time monitoring of receipt of drug consignments from approved vendors, storage in DDW, updation of quality control (QC) status, release to hospitals/clinics post QC approval, rejection of poor quality batches and indent for fresh stocks. Sometimes, due to short supply or inaccurate estimation of demand for a particular type of drug, there may be a temporary non-availability of the drug in a particular hospital or DDW. The e-Aushadhi monitoring solution shows up such instances as 'NA hits' at district-level. These 'NA hits' are flagged at the RMSC HO and reasons behind the same are examined in order to find a solution.
Capacity Building and IEC Campaigns	**1) Sensitisation & Re-orientation ICE campaigns aimed at medical practitioners, stockists and chemists' associations**: GoR Dept. of Medical, Health and Family Welfare IEC Bureau officials in each district have conducted regular sensitisation and re-orientation workshops for doctors to impress upon them the need to prescribe drugs by generic salt name

Factor	Strength/Benefit
	and not by brand name. Government doctors are required to retain a copy of the drug prescription along with the diagnosis (a minimum 1% of all such prescriptions are audited). Medicine stockists and chemists are encouraged to source low-cost generic drugs through co-operative store supply chains (at fixed commissions of around 20%) and make them available as the first choice of drug to poor and needy patients. **2) IEC campaigns** Are run by means of posters, banners and hoardings outside government hospitals, at prominent public places/markets/chemist shops and on state road transport buses.
Financial Viability	**1) Savings in GoR expenditure on medicines for govt. employees, pensioners and other groups**: GoR sanctioned Rs. 200 crore for the MNDY in 2011-12 and Rs. 300 crore in 2012-13. However, it is estimated that the GoR saves approx. Rs. 180-200 crore in a single year by procuring quality, generic drugs, surgical equipment, supplies and sutures etc. through economies of scale achieved through RMSC, which it would have otherwise incurred on reimbursing state government employees for purchase of drugs from the open market. **2) Economies of Scale through procurement of essential drugs in large quantities/volumes**: The e-tendering process implemented through the RMSC and the competitive bidding by pharmaceutical companies has ensured that prices at which GoR obtains essential medicines for distribution to poor patients at government hospitals is 20-400% or lower than prevailing 'open market' prices.
Organisational Structure and Stakeholder Participation	**1) State-level and District-level RMSC teams**: The Rajasthan Medical Services Corporation (RMSC) has a well-staffed team of doctors, pharmacists, quality control experts, finance and IT professionals and managers at the Jaipur HO as well as in each of the 33 districts/34 DDWs across the state. The RMSC staff and DDW teams cater to the timely, efficient, transparent procurement of low cost, essential drugs for supply and re-distribution to poor/BPL patients at government hospitals, CHCs, PHCs etc.
Technology Interventions	**1) Innovative use of Information and Communication Technologies (ICTs)**: As explained above, RMSC employs the 'e-Aushadhi' Advanced Drug Warehouse Management System, a solution to monitor the efficiency of procurement, storage and re-distribution of drugs, supplies and surgical equipment to government hospitals, Community Health Centres, Primary Health Centres and dispensaries throughout the state. 'e-Aushadhi' is an online, web-based solution developed by the Centre for Development of Advanced Computing (C-DAC)'s NOIDA centre. The RMSC database is also hosted on C-DAC servers located at the latter's NOIDA data centre. An Android OS-based Smartphone 'app' is also available on www.rmsc.nic.in for users (stakeholders/beneficiaries) to lodge complaints, if any.

Salient Features of a Robust Public Medicare Scheme: Replication Guidelines

Step 1: Assess Needs and Design an Essential Medicines Procurement and Distribution Programme with Maximum Coverage of BPL Patients

By adopting the best practices already in vogue in the "*Mukhyamantri Nishulk Dawa Yojana*" or MNDY ("Enhancing Access to Affordable Medicines in Rajasthan") and incorporating changes/modifications as suggested above in the 'Outcomes Achieved' and 'Key Study Findings' sections, any other large or mid-size state of the country could roll out a similar 'safety net' of publicly subsidised generic medicines, especially where BPL families are a large proportion of the total population and premium pricing of branded medicines keeps them out of reach of the poor. For example, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Dadra & Nagar Haveli (UT), Jharkhand, Manipur, Odisha and Uttar Pradesh have higher than national average proportion of BPL families in 2011-12, as shown in the table in the preceding section.

States like Tamil Nadu, Kerala, Karnataka, West Bengal, Bihar, Rajasthan and Delhi have already implemented 'low cost, essential drugs' programmes directly or indirectly. Some of the lessons learnt and best practices adopted are represented here in brief:

Experiences from other Affordable Medicine Projects of Leading States

Case Study: Tamil Nadu Medical Services Corporation (TNMSC)

TNMSC relied heavily on information technology systems and processes to streamline drug procurement, which helped in substantially bringing down drug prices. For instance, the price of 10 strips of antibiotic ciprofloxacin tablets in 1992-1994 (before TNMSC) was Rs. 525. That fell to Rs. 88 in 2002-2003. Similarly, the cost of 100 Norfloxacin tablets fell from Rs. 290 to Rs. 51.30 during the same period.

These improvements have helped bring down the average cost of drugs for inpatients in Tamil Nadu's public hospitals to Rs. 102, according to the National Sample Survey Organisation's (NSSO) sixtieth round survey in 2004. In comparison, the average cost of drugs was Rs. 3,268 in Haryana, Rs. 2,166 in Himachal Pradesh and Rs. 3,187 in Rajasthan. The total average cost of a patient's hospital stay in Tamil Nadu was the lowest at Rs. 255.

The key features that have contributed to TNMSC's success are its tendering process and a passbook system for distributing drugs. TNMSC floats tenders at the beginning of every year to identify suppliers for about 250 drugs, which are the most used and usually cover the treatment spectrum. When the purchases are state funded, it follows a two-tier tendering process where first technical bids are evaluated and then price bids decide the shortlisted supplier(s).

TNMSC follows a stringent testing protocol through eleven (11) empanelled laboratories. These labs test the first batches of every drug supplied and subsequently also random samples picked from TNMSC's 25 warehouses spread across the state. Earlier, drugs used to be supplied in bulk. The corporation put an end to this practice and insisted on blister packaging and special labelling in English and Tamil, which made it difficult to divert them. Once the tests approve the drug, TNMSC places regular orders through the year depending on inventory levels in its warehouses. A computerised management information system keeps track of inventories in warehouses and helps place orders and clear payments within 15 days. The system has put an end to excess as well as shortage of drugs.

In Tamil Nadu the concept of passbook introduced by TNMSC was another key innovation. Every user of the drug (government run clinics, polyclinics and hospitals) is issued a passbook. Whenever a user requires a drug, it informs the nearest warehouse, which fulfils the order. The name and value of the drug issued is also entered into the passbook, which forms the backbone of the information system.

The two key aspects that keep TNMSC functioning well are the transparency in processes and strict dealings with suppliers of drugs. Any detection of drop in quality may result in immediate blacklisting of the supplier. Currently, the blacklist has about 60-70 companies. Once blacklisted, these companies cannot bid for four years. When they do return, they are subject to intense scrutiny. TNMSC sources 251 drugs, 90 pieces of surgical equipment and 80 types of sutures from about 125 suppliers. The district health office at Thiruvallur won an award for one of the best performing districts under NRHM.

Scaling up at National Level through NRHM, http://www.nrhm.gov.in/

The National Rural Health Mission (NRHM) is an initiative of the Government of India to address the health needs of underserved rural areas. Launched in April 2005 by Prime Minister Manmohan Singh, the NRHM was initially tasked with addressing the health needs of 18 states that had been identified as having weak public health indicators.

Under the NRHM, the Empowered Action Group (EAG) States as well as North Eastern States, Jammu and Kashmir and Himachal Pradesh have been given special focus. The thrust of the mission is on establishing a fully functional, community owned, decentralised health delivery system with inter-sectoral convergence at all levels, to ensure simultaneous action on a wide range of determinants of health such as water, sanitation, education, nutrition, social and gender equality. Institutional integration within the fragmented health sector was expected to provide a focus on outcomes, measured against Indian Public Health Standards for all health facilities.

As per the 12th Plan document of the Planning Commission of India, the flagship NRHM programme will be strengthened under the umbrella of National Health Mission. The focus on covering rural areas and rural population will continue along with up scaling of NRHM to include non-communicable diseases (NCDs) and expanding health coverage to urban areas. Accordingly, the Union Cabinet, in May 2013, has approved the launch of National Urban Health Mission (NUHM) as a sub-mission of an overarching National Health Mission (NHM), with National Rural Health Mission (NRHM) being the other sub-mission of the National Health Mission.

As per the Twelfth Five Year Plan, the Govt. of India has sanctioned Rs. 29,968 crore to be spent over five years (2012-2017) to subsidise supply of free medicines to patients approaching public health institutions for treatment. A state-owned corporation or SPV should be the preferred route for procurement and distribution of quality, generic drugs for free distribution or supply through low-priced generic drug stores. This strategy has been adopted by leading states such as Tamil Nadu (Tamil Nadu Medical Services Corporation, www.tnmsc.com), Kerala (Kerala State Medical Service Corporation, www.kmscl.kerala.gov.in), Chhattisgarh (Chhattisgarh Medical Services Corporation, http://www.cgmsc.in), Rajasthan (Rajasthan Medical Services Corporation, www.rmsc.nic.in), Delhi (Delhi Society for Promotion of Rational Use of Drugs, www.dsprud.org), West Bengal (West Bengal Medical Services Corporation, www.wbmsc.gov.in), Assam (Dept. of Health and Family Welfare, http://online.assam.gov.in/web/hfwd and State Health Mission, http://www.nrhmassam.in/statehealthmission.php) and Tripura (Health and Family Welfare Dept., Govt. of Tripura, https://tripura.gov.in/healthcare along with Cooperative Dept., Govt. of Tripura).

Around 100 "Jan Aushadhi" stores selling affordable medicines are currently operational in various states and union territories across India, while another 500 such stores are to open by the end of the current financial year (March 2014). Another 2,500 stores are scheduled to be set up to sell affordable medicines in the next three years, to extend the coverage of the government scheme to make quality medicines available to common citizens at affordable prices.

According to official data, the Govt. of India has taken fresh measures to bolster the Jan Aushadhi campaign, as a public welfare programme, to supply quality medicines at affordable prices through dedicated outlets. It is also part of a larger direct market intervention strategy by making generic medicines easily available and accessible to the common citizen. Rogi Kalyan Samitis also operate 'low cost' drug stores on a cooperative basis in states such as Gujarat, Rajasthan, Delhi etc.

Role of Niche Private Sector Players: Low Cost Standard Therapeutics or LOCOST, founded in 1983, is a public, non-profit charitable trust registered in Baroda, Gujarat LOCOST's small-scale manufacturing unit makes over 60 essential medicines in 80 formulations (liquid, capsule, and tablet). The manufacturing procedure is relatively simple. Unlike bulk manufacturers, medicines at LOCOST are not made from the basic stages of chemical formulation. The company buys the medicine in bulk, in powder form, from bulk drug manufacturers, and then uses its own machines to formulate tablets, capsules and syrups. The organisation is extremely careful about the quality of drugs it manufactures. It has an in-house quality-control laboratory where medicines are tested before being made available in the market. All drugs manufactured at LOCOST conform to strict quality standards prescribed by the World Health Organisation (WHO). LOCOST is also known to pay its workers higher than industry average wages vis-à-vis other small-scale industries.

LOCOST has been supplying drugs to over 100 civil society organisations (CSOs) for the past more than 33 years. The CSOs make them available to poor patients. Besides Gujarat, the company has also managed to make inroads into Madhya Pradesh, Maharashtra, Karnataka and other parts of the country.

Affordable Medicine procurement and distribution projects run by state governments under the aegis of the NRHM / NHM have caught the imagination of the media and public at large. Leading national dailies such as the 'Times of India', 'The Hindu' and vernacular newspapers such as 'Dainik Bhaskar' have reported on the roll-out and impact of such schemes on patients from poor backgrounds. With the rising popularity of social media, newspapers and journals are expected to play a more active role and take up cudgels on behalf of the general public, in an effort to improve the functioning of such schemes.

Case Study: Initiatives taken up in Gujarat at district level to provide affordable medicines

'Niramaya' is an endeavour on the part of the administration, doctors and chemists of Wardha district to provide low cost but effective medicines to patients, especially the poor and needy. It does so by creating awareness among doctors, chemists and consumers regarding the large price differential that exists across brands for the same formulation. A comparative price list across brands for essential drugs is provided to each doctor in the district to act as an illustrative ready-reckoner for prescription.

Doctors and chemists that participate in the scheme display the 'Niramaya' board with its logo, making it easier for patients, especially illiterate people, to identify doctors or chemists who provide affordable treatment under the scheme. There are very few "Jan Aushadhi" generic medicine stores functioning in the country to serve a population of 1.2 billion. Therefore, proactive intervention by state governments down to the district level was required to help people procure life-saving medicines at affordable prices. Other options include expanding price control on essential drugs, having a profit margin cap for all drugs and awareness campaigns like the "Jago Grahak Jago" regarding the price differential across brands. The aim was to create informed citizens who would demand low-cost, generic drug to be prescribed by their doctors. It was realised that ultimately, market competition alone can bring prices down and for that to happen, adequate pressure and demand must be created for supply of low-cost, generic drugs.

Case Study: 'Jeevan Dhara' a scheme of Andhra Pradesh Govt. to provide affordable medicines

As part of 'Strengthening of Health Systems' the Government of Andhra Pradesh established generic medicine retail outlets with the help of the Andhra Pradesh Medical Services and Infrastructure Development Corporation (APMSIDC), for improving access to quality generic medicines at Fair Price Shops.

As per this initiative, generic medicine retail stores called "Jeevan Dhara"/"Jan Jeevani"/"Jan Aushadhi" stores were established in various cities of Andhra Pradesh. These stores sell unpromoted branded generics manufactured by the twenty (20) top pharmaceutical companies. Since these are unpromoted generics, they are available at a 40-90% discount compared to the promoted generics.

Unlike "Jan Aushadhi" scheme, "Jeevan Dhara" model is different because the government interference and involvement in this scheme is minimal. Govt. just acts as a facilitator between the society and drug manufacturers. The philosophy guiding the initiative was that patients will be loyal to generic drugs, only when the quality of the drug is ensured. To maintain drug quality, the Govt. of Andhra Pradesh contacted the leading 20 drug companies in India and convinced them to supply generic drugs to "Jeevan Dhara" stores. Government officials also got an assurance from the outlet owners that there would never be a short supply of generic drugs at their outlets. A strict quality assurance system was implemented, and that made the difference to people's perception and adoption of quality, low-priced, generic drugs. However, generic drug stores can perform better if District Collectors get actively involved in running the initiative. They should be able to shrug off pressure from private drug manufacturers.

Another challenge that needs to be addressed is proper and adequate flow of information to the wider community of patients (consumer cooperative societies) that generic drugs are not inferior to branded ones. To ensure quality of generic drugs, the societies that come forward to operate "Jeevan Dhara" outlets are advised to prefer sourcing from the 20 leading drug companies in India.

Key Lessons Learnt from States' Affordable Medicine Projects

Following are the main lessons emerged out form the above mentioned affordable medicine project:

- Enforce price regulation and apply price control on all formulations in the Essential Drugs List (EDL).
- Strengthen institutional mechanisms for procurement and distribution of allopathic and AYUSH drugs, e.g., creation of a state-owned drug procurement corporation or a Special Purpose Vehicle (SPV).
- Promote rational use of drugs through prescriber, patient and public education, by adoption and propagation of a set of Standard Treatment Guidelines (STG), and having the same reviewed periodically by a committee/panel of leading therapeutics and medical experts.
- Ensure quality standards of drugs procured through the state-owned corporation/SPV.
- Make people aware about availability of generic drug stores in their areas and the good quality of generic drugs.
- Make the doctors sensitive to prescribing generic drugs by salt name, especially to poor (BPL) patients.
- Important stakeholders, doctors - both public and private, pharmacists and community should be involved right from the beginning of the project through counselling sessions, one-on-one meetings with doctors and drug manufacturing company top management executives, hoardings, ads and billboards.
- Drug stores which provide affordable medicines should also operate in remote areas as only lowering drug prices would not be enough, rather their accessibility also needs to be improved.

Step 2: Build an Integrated Health and Medical Care Initiative for achieving all-round improvement in health indicators of underprivileged groups (BPL families, women, tribals, manual labourers)

a) **Free or Affordable, High Quality Generic Drugs, Medical Supplies and Surgical Equipment**: Most essential drugs should be made available free of charge to poor patients at govt. hospital/dispensary Drug Distribution Centres (DDCs), as in the case of Rajasthan. Drugs that are not essential in nature, short supply drugs, surgical implants, sutures etc. can be supplied at low or affordable prices through Life Line Drug Stores (LLDSs), Cooperative Drug Stores and "Jan Aushadhi" stores at a convenient distance from the normal place of residence of the patient. For example, there are nearly 100 such stores in all medical college hospitals, district, sub-district and satellite hospitals in Rajasthan.

b) **Direct and seamless linkages with healthcare service delivery institutions, particularly government hospitals, CHCs, PHCs and dispensaries**: Adequate strengthening of public healthcare institutions is required by way of more in-patient beds, modern medical imaging, scanning and surgical equipment; recruitment of doctors to fill vacancies and setting up of a state-wide Hospital Management Information System (HMIS). These steps are necessary if a state wants to genuinely provide quality medical diagnosis and treatment to patients, especially women, children, senior citizens and persons with disabilities (PwDs).

   The aim should be to design a holistic system of healthcare and medicare for the common people, to rid them of the insecurities and indebtedness caused by incurring high costs on treatment and purchase of medicines for chronic and lifestyle diseases, illnesses and surgical interventions.

Step 3: Account for Changing Socio-Economic Factors, Pharmaceutical Industry Trade Practices, New Drug Discoveries & Patents, Evolving Treatment Guidelines

Planners must take into account changing socio-economic factors, pharmaceutical industry trade practices, discovery & patent of new drugs, and evolving treatment guidelines.

For example, the state drug procurement agency/corporation should appoint a *Technical Advisory Committee* plus a *Drug and Therapeutics Committee* to review the Essential Drugs List (EDL) and Standard Treatment Guidelines (STGs) once every 1-2 years.

Due consideration should be placed on new forms of viral infections and treatment guidelines for the same; new classes of drugs available in the market with improved efficacy in treatment of diseases; changing trends in clinical trials & patent filings by drug companies, and new trade promotion practices adopted by pharmaceutical companies to incentivise doctors and chemists.

Step 4: Incorporate a Robust Governance, Quality Assurance and Grievance Redressal System

A robust governance structure must be in place from "Day One" to ensure timely, transparent and efficient procurement of quality drugs, medical supplies and surgical equipment at competitive rates from reputed manufacturers.

For example, RMSC sets the following guidelines for selecting suppliers of drugs to Rajasthan hospitals, clinics and dispensaries:

- The manufacturer should have its own licence for the manufacture/import of the product quoted;
- The company should have a turnover of Rs. 20 crore and a market standing for the drug for a minimum period of three years;
- The company should adhere to "Good Manufacturing Practices" (GMP), issued by state government authorities and should not have been blacklisted by a state/central

government/public sector medical & healthcare institution.

Further, both TNMSC and RMSC follow a policy whereby drugs supplied to the drug warehouses are not released to government hospitals and dispensaries, till such time as a new lot has been tested at an independent, NABL-accredited laboratory and certified as 'good to be issued' to patients.

Step 5: Institutionalise a Periodic Review of Core Mission & Scheme Goals

A formal mechanism of review of the scheme goals and objectives vis-à-vis changing healthcare needs and disease patterns of the target population must be institutionalised, so that the scheme does not lose momentum in the absence of a visionary individual or change of priorities on the part of the political executive of the state. For example, the reach of the 'affordable medicines' scheme should be studied through an independent baseline survey of BPL patients, government hospital doctors, chemists/stockists and experts in public health, to gauge coverage and effectiveness, once every two years.

At the strategic level, the aim should be to study changing trends in chronic and lifestyle diseases; prevalence of life-threatening diseases such as cancer; issues of women's reproductive health; institutional deliveries for expectant mothers; full course of vaccination/inoculation for expectant mothers, babies and young children, and issues related to geriatric care (as the number of senior citizens rises due to increasing life expectancy).

At the tactical level, steps such as audit of government doctors' prescriptions should be carried out. Initially, between 2-3% of all government doctors' prescriptions were audited in Rajasthan. Subsequently, during a review, this number was brought down to 1% of all government doctors' prescriptions, as 2-3% of prescriptions per month was considered a very large number, and it was not being found feasible to achieve this number or do follow-ups on a regular basis.

Step 6: Develop & Strengthen Market Linkages for Long-term Scheme Sustenance and Viability

Appropriate market linkages must be established so that the pharmaceutical companies become partners in supplying quality medicines for common ailments as well as drugs required to treat critical illnesses. The aim of the state drug procurement corporation/SPV should be to create a system of healthy competition between leading Indian and MNC drug companies. Drug manufacturers should be motivated to participate in tenders for supply of drugs required by a state's government healthcare service delivery institutions (district and sub-district hospitals), at a nominal profit of say, 10%, as is practiced in states like Rajasthan.

Step 7: Run continuous IEC campaigns to change mindsets of Doctors, Chemists and Patients

IEC campaigns tailored to specific diseases/areas of treatment and local audiences must be conducted, to widely publicise the availability of quality, generic drugs at affordable prices and at easily accessible locations, for the benefit of the target population (patients from poor backgrounds).Thus, besides hoardings, posters and billboards at hospitals and prominent public places, local FM radio, cable TV channels and vernacular news dailies can be exploited to deliver appropriate information to BPL patients on the efficacy and availability of quality, generic drugs at government hospitals, dispensaries for free distribution and 'low priced' drugs at "Jan Aushadhi" or "Jeevan Dhara" stores. Doctors and chemists must also be invited to counselling sessions/workshops. Doctors must be encouraged to prescribe generic drugs, by salt name and not by brand name. Government doctors must be particularly encouraged to write prescriptions on self-carbonated double prescription slips, along with the diagnosis.

The representative photographs below represent a doctors' counselling session in progress and a beaming patient who has benefited from generic, quality drugs distributed at a DDC in the state.

Figure 7.9 - Doctors at a Counselling Session

Figure 7.10 - Beaming Mother and Child at a DDC

Key Replication Processes: Indicative Timelines

These timelines are indicative timelines based on the interactions with the stakeholders involved in the initiative and secondary researches; the actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city.

Table 7.9 – Indicative Timelines

S. No.	Key Phase/Implementation Step	Indicative Timeline
1.	Assess Needs to Design an Essential Medicines Procurement and Distribution Programme with Maximum Coverage of BPL Patients	6 to 12 months
2.	Build an Integrated Health and Medical Care Initiative for achieving all-round improvement in health indicators of underprivileged groups (BPL families, women, tribals, casual labourers and others)	6 to 12 months (along with Replication Step No. 1)
3.	Create a State Nodal Agency (drug procurement & distribution), Appoint a Technical Advisory Committees and a Drug & Therapeutics Committee, Formulate an Essential Drugs List and Standard Treatment Guidelines	6 to 12 months (along with Replication Step Nos. 1 and 2)
4.	Frame appropriate e-Procurement & Quality Assurance Guidelines, Robust Governance System and Transparent Grievance Redressal Mechanisms (including development & testing of an online e-procurement and supply chain management system)	3 to 6 months (along with Replication Step Nos. 1, 2 and 3)
5.	Procure & Distribute Essential Generic and Life Saving Drugs, Institutionalise a Periodic Review of Scheme Performance & Impact (including training of staff)	Ongoing activity, starting within 1-3 months of set-up of DDWs, DDCs and online monitoring & evaluation portal
6.	IEC Campaign, Contact Sessions aimed at Doctors and Chemists : • Build awareness about 'State Affordable Medicines Programme' through hoardings & billboards at hospitals/clinics, bus stands, bus shelters, community halls/panchayat bhawans, collector's offices, cable TV and FM radio ads, etc.; • Conduct Contact Sessions in each district, once every month to start with and later on once every quarter to make aware doctors to prescribe drugs by generic salt names only, and chemists to stock low cost unbranded generics at all times, especially in areas with predominantly poor (BPL) patient populations.	Ongoing activity

Overview of 'Model' Practices for Implementing a State Affordable Medicines Programme

Assess Needs and Design an Essential Medicines Procurement and Distribution Programme with Maximum Coverage of BPL Patients

Any other large or mid-size state of the country could roll out a 'safety net' of publicly subsidised generic medicines, especially where BPL families are a large proportion of the total population and premium pricing of branded medicines keeps them out of reach. States like Tamil Nadu, Kerala, Karnataka, West Bengal, Bihar and Delhi have already implemented 'low cost, essential drugs' programmes directly or indirectly.

Build an Integrated Health and Medical Care Initiative for achieving all-round improvement in health indicators of underprivileged groups (BPL families, women, tribals, casual labourers and others)

Make available Free or Affordable, High Quality Generic Drugs, Medical Supplies and Surgical Equipment at govt. hospitals, dispensaries and clinics through DDCs and 'Jan Aushadhi' or 'Jeevan Dhara' stores.

Establish seamless linkages with healthcare service delivery institutions, particularly government hospitals, CHCs, PHCs and dispensaries; increase number of in-patient beds; install modern diagnostic equipment; fill-up vacancies of doctors; state-wide HMIS

Create a State Nodal Agency, Appoint a Technical Advisory Commitees and a Drug & Therapeutics Committee, Formulate an Essential Drugs List and Stanadard Treatment Guidelines

State drug procurement corporation / SPV should appoint a Technical Advisory Committee plus a Drug and Therapeutics Committee to review the Essential Drugs List (EDL) and Standard Treatment Guidelines (STGs) once every 1-2 years. Due consideration should be placed on new forms of viral infections and treatment guidelines for the same; new classes of drugs available in the market with improved efficacy in treatment of diseases; changing trends in clinical trials & patent filings by drug companies, and new trade promotion practices adopted by pharmaceutical companies to incentivise doctors and chemists.

Frame appropriate e-Procurement & Quality Assurance Guidelines, Robust Governance System and Transparent Grievance Redressal Mechanisms

Procurement guidelines should focus on: 1) Selecting drug suppliers who are either manufacture rs or direct importers of the product quoted for; 2) Company should have a turnover of Rs. 20 crore and a market standing for the drug for a minimum three years; 3) A "Good Manufacturing Practices" (GMP) certificate and no incidence of blacklisting. Every fresh lot of drugs should be tested at a duly empanelled, NABL-accredited laboratory.

Procure & Distribute Essential Generic and Life Saving Drugs, Institutionalise a Periodic Review of Scheme Performance & Impact

Essential drugs should be procured as per the precribed norms and guidelines, District Drug Warehouses (DDWs) and Drug Distribution centres (DDCs) should be set up to cover the state adequately (all district and tertiary care hospitals, CHCs, PHCs, dispensaries). State Nodal Agency staff, including DDW staff should be provided adequate training in handling and storage of drugs. A formal periodic review of the scheme should be conducted to gauge performance and impact in terms of improved healthcare indicators for the state, especially its BPL population.

Develop & Strengthen Market Linkages for Long-term Scheme Sustenance and Viability

Appropriate market linkages must be established so that the pharmaceutical companies become partners in supplying quality medicines for common ailments as well as drugs required to treat critical illnesses.

Run continuous IEC campaigns to change mindsets of Doctors, Chemists and Patients

Besides hoardings, posters and billboards at hospitals and clinics, local FM radio, cable TV channels and vernacular news dailies can be used to deliver appropriate information to BPL patients on the efficacy and availability of quality, generic drugs at government hospitals / clinics for free distribution and 'low priced' drugs at "Jan Aushadhi" or "Jeevan Dhara" stores. Doctors and chemists must be invited to counselling sessions & workshops. Doctors must be encouraged to prescribe generic drugs, by salt name and not by brand name.

Figure 7.11 - Overview of proposed replication guidelines

8 – Aarogyasri Public Health Insurance Scheme, Andhra Pradesh

8.1 Initiative Objectives

The objective of this initiative is to improve access of BPL families to quality medical care for treatment of diseases involving hospitalisation and surgery through an identified network of government and private health care service providers across all 23 districts of the state of Andhra Pradesh.

8.2 Background: Rationale behind the Initiative

Poverty and non-availability of healthcare services to the economically downtrodden are two major challenges in India. It was noted by the Commission on Farmers' Welfare constituted by Government of Andhra Pradesh (GoAP) in 2005 that performance of Andhra Pradesh in terms of life expectancy and infant mortality was worse than other South Indian states. It was said that due to the poor state of public health facilities the underprivileged were forced to go to private healthcare service providers which led to a huge burden in terms of money. The state government's expenditure on health was Rs. 35,632 crore in 2003-04 but declined to Rs. 31,428 crore by 2004-05, before marginally improving to Rs. 34,769 crore in 2005-06 (*Source: Health, Family Welfare & Nutrition Division, Planning Commission of India*). Only 22 per cent of the doctors in the state were in place in rural areas to serve 73 per cent of the total population in 1999-2000. Private investments in healthcare have been very lucrative due to lax regulation of pricing in the private healthcare sector, in the interest of 'making available quality healthcare to poor patients'. However, as experience has shown, poor patients did not dramatically benefit in any way from the substantial amounts of public resources doled out to private hospitals on this count.

To overcome these major challenges, offer quality medical services and affordable public healthcare service delivery to the underprivileged population, Government of Andhra Pradesh implemented Rajiv Aarogyasri Community Health Insurance Scheme. This scheme also addressed the problem of indebtedness of the poor due to overwhelming healthcare costs. The aim of the Government is to achieve "Health for All" in Aarogyandhra Pradesh (Healthy Andhra Pradesh state). The Rajiv Aarogyasri Community Health Insurance Scheme is a state funded health insurance scheme for the 2.33 crore BPL families in Andhra Pradesh.

8.3 Key Factors leading to Initiative

- Poverty and non-availability of quality healthcare services to the economically downtrodden
- To offer quality medical services and affordable public healthcare service delivery to the underprivileged population
- To address the problem of indebtedness of the poor due to overwhelming healthcare costs
- To offer the crucial missing services of tertiary healthcare
- To assist primary and secondary healthcare delivery through facilitation of free consultations and treatment at health camps organised by Network Hospitals

- To overcome the serious shortcomings in quality of and access to services, quantity of personnel and equipment, and levels of funding
- To create awareness among various stakeholders about free medical treatment through awareness campaigns, health camps, publicity through pamphlets and posters, publicity through electronic media, training and orientation
- To generate indirect employment as the network hospitals and other stakeholders will have to employ a number of people in different cadres such as Aarogyamithras, RAMCOs, AMCOs, duty doctors, para-medical technicians, staff nurses etc.
- To create a huge morbidity database of the Andhra Pradesh population
- To help in early recognition and disease prevention.

8.4 Project Initiation: When and Where?

Aarogyasri was launched on a pilot basis in three districts and today covers all the districts in the state. BPL families can avail all the benefits of this health insurance policy without having to pay any premium. It is funded and privately operated. Under the scheme, a sum of Rs. 1,50,000 plus a buffer amount of Rs. 50,000 is reserved for each BPL family.

I. **Profile of implementer**: Initiated by the late Chief Minister Y S Raja Sekhara Reddy.

II. **Year and period when this initiative was started**:

The scheme, first introduced on 1st April 2007 in the three backward districts of Mahboobnagar, Anantapur and Srikakulam on a pilot basis, was subsequently extended to the entire state in a phased manner to cover 233 lac families in 23 districts from 17th July 2008.

The scheme which was initiated with coverage to 163 identified diseases in 6 systems was gradually extended to 330 diseases in 13 systems under Aarogyasri-I and addition of 612 procedures through Aarogyasri-II to cover 233 lac families in 23 districts.

8.5 Implementation Strategy Adopted

To facilitate effective implementation of the scheme, the Andhra Pradesh Government set up the "Aarogyasri Health Care Trust" under the chairmanship of the Chief Minister. The scheme is a unique PPP model in the field of Health Insurance, tailor-made to the health needs of poor patients and providing end-to-end cashless services for identified diseases through a network of service providers from government and private sector.

The scheme provides coverage for meeting expenses of up to Rs.1.50 lac per family per year for hospitalisation and surgical procedures in any of the network hospitals. This benefit for families is on a floater basis – the total reimbursement of Rs. 1.50 lac can be availed individually or collectively (on a per family basis). An additional sum of Rs. 50,000 is provided as a buffer to take care of additional expenses. The insurance coverage is for a period of one year from its commencement date. The scheme which was initiated with coverage to 163 identified diseases in 6 systems was gradually extended to 330 diseases in 13 systems under Aarogyasri-I and addition of 612 procedures through Aarogyasri-II to cover 233 lac families in 23 districts.

Important stakeholders in the scheme are

I. **The Beneficiaries**:

The scheme is intended to benefit 2.33 crore families in all 23 districts of the state.

II. **Aarogyasri Health Care Trust (Implementing Agency)**

In order to implement the scheme in a smooth and hassle-free manner GoAP established an independent trust – "*Aarogyasri Health Care Trust*". Honourable Chief Minister of the state is the chairman of Aarogyasri trust. It is administered by a Chief Executive Officer who is an IAS Officer. The trust, secretaries, experts of medical field and

heads of concerned departments are members. CEO of the Trust is also the Secretary of the Trust. The scheme is implemented directly by the Trust by entering into contracts with network hospitals.

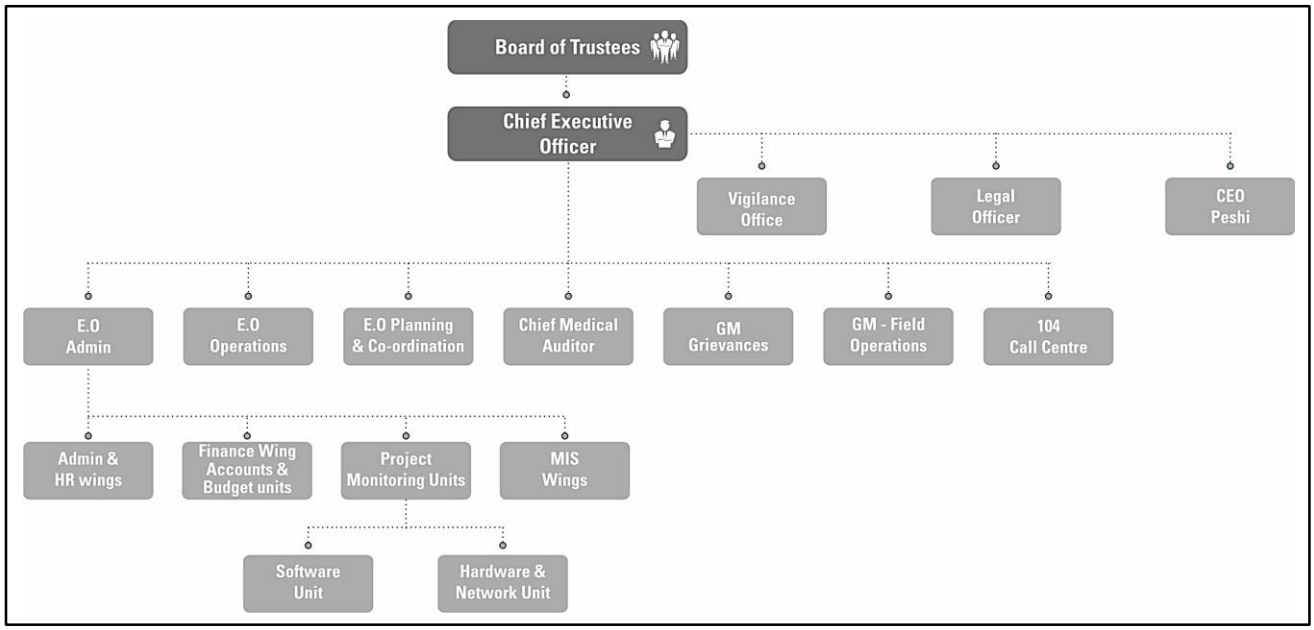


Figure 8.1 - Aarogyasri Health Care Trust
Source: http://www.aarogyasri.gov.in/

III. **Network Hospitals (Service Providers)**

A healthcare provider shall be a hospital or nursing home in Andhra Pradesh established
for indoor medical care and treatment of disease and injuries and should be registered under Andhra Pradesh Private Allopathic Medical Establishments (Registration & Regulation) Act and Pre-Conception and Pre-Natal Diagnostic Techniques Act (wherever applicable).

IV. **District Administration (Resource Mobilisation)**

District-level monitoring committees have been set up with the District Collector as the Chairman of the committee. This committee not only reviews the implementation of the scheme through regular review meetings but also helps mobilise patients by encouraging them to attend camps, conducting awareness campaigns through people's representatives, Self Help Groups (SHGs) and other field functionaries.

V. **Aarogyamithras or 'Friends of Health'**

These are the health coordinators who assist the patients in registration, admission, evaluation, pre-authorisation, treatment, discharge and post-discharge follow-up. The organised structure of rural self-help groups (SHGs) in the state was effectively used to select and train these facilitators. There are two categories of Aarogyamithras:

- Aarogyamithras with PHCs/AHs/CHCs/District Hospitals – hired by the Mandal and Zilla Samakhya (federation of SHGs at Mandal and District level).
- Aarogyamithras with Network Hospitals – hired by agency appointed by AHCT.

8.6 Challenges Faced

One of the biggest challenges for the scheme is that if the present trend continues, more private hospitals will crop up, if only to exclusively service patients covered by the scheme. Unfortunately, in the prevailing model, the incentives of doctors are aligned towards projecting expensive invasive surgical procedures as the "best" option. For example,

irrespective of the medical condition and the age profile of the patient, irradiation therapies are generally preferred (by both doctors and patients) over medication. In simple terms, the most aggressive treatments have become the standard of healthcare.

8.7 Outcomes Achieved

The Aarogyasri Public Health Insurance Scheme currently provides the facility of cashless medical treatment up to a value of Rs. 1.5 lac per annum to approx. 80% of the Andhra Pradesh population for serious ailments/medical conditions (up to 938 procedures) in 457 network hospitals in 23 districts of the state.

Particularly, it deals with the key issue of poor citizens of the state not having to take loans for medical treatment of critical illnesses/medical conditions for themselves or their family, and being able to avail cashless treatment for as many as **938 procedures – 159 medical therapies and 779 surgical therapies**.

The scheme is government funded and jointly operated in partnership with both government and privately operated network hospitals. It is a state funded health insurance scheme for 2.33 crore BPL families in Andhra Pradesh.

Scheme Coverage

All 23 Districts of Andhra Pradesh covered in a Phased Manner

The most important single outcome of the Aarogyasri Public Health Insurance Scheme has been the safeguarding of poor farmers, shepherds, artisans, daily wage labourers and other BPL families in the state of Andhra Pradesh falling / falling back into indebtedness due to high expenses incurred on the treatment of serious injuries, ailments or critical illnesses for themselves or members of their family.

EVOLUTION

2004: CMRF

August 2004: Child Cardiac Surgeries

April 2007: AAROGYASRI I

July 2008: AAROGYASRI II

July 2008: CMCO

October 2009: JOURNALIST SCHEME

EXPANSION

Fin Year	Covered Procedures	AS-I (Therapies in Lakhs)	AS-II (Therapies in Lakhs)
2007-08	210	0.23	0.00
2008-09	942	1.42	0.81
2009-10	942	1.83	1.42
2010-11	938	2.34	1.68
2011-12	938	2.08	2.25
2012-13	938	0.25	4.34
2013-14	938	1.03	2.60

Figure 8.2 - Origin and Evolution of Aarogyasri
Source: AHCT

As illustrated in the table above, the total number of procedures covered for treatment under the Aarogyasri Public Health Insurance Scheme stands at 938 as of FY 2013-14 and the number of therapies conducted year-to-date (April-December 2013) are 3.63 lac.

8.8 Key Study Findings

8.8.1 Scheme Scope & Coverage, Enabling Policy Interventions (Impact and Utility)

The Rajiv Aarogyasri Public Health Insurance Scheme provides free treatment to 2.33 crore poor (BPL) families (as per the database of Dept. of Civil Supplies, GoAP) across the state of

Andhra Pradesh in government and private network hospitals up to a value of Rs. 1.50 lac per family per annum.

Further, as per the provisions of the scheme, cashless treatment may be availed by BPL patients for 938 procedures (159 medical therapies and 779 surgical therapies) in 457 network hospitals (305 private hospitals and 152 government hospitals, as of December 2013), spread across 23 districts of the state.

Population Coverage

Aarogyasri covers 233 Lac Poor Families of the state which have White Ration Card Issued by Department of Civil Supplies, GOAP as per AHCT.

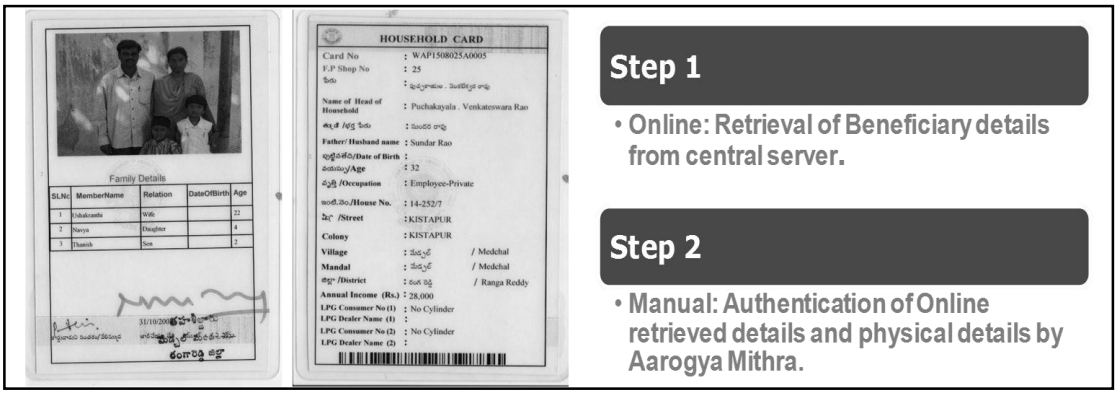


Figure 8.3 – Beneficiary authentication
Source: AHCT

When a patient arrives at an empanelled hospital for treatment, his/her identity is checked in two ways – the white (BPL) ration card bar code is scanned online, after which the Aarogyamithra confirms the patient's identity by physical verification against the photo pasted in the ration card.

Table 8.1 - Benefits Coverage

Specialities	Basic Speciality	Super Speciality
Medical (159 therapies)	1. General Medicine (with IC)	1. Medical Gastroenterology
	2. Paediatrics (with IC - neonatal, general)	2. Cardiology
	3. Dermatology	3. Nephrology
	4. Psychiatry	4. Neurology
	5. Pulmonology (Chest Diseases) / Infectious Diseases	5. Endocrinology
		6. Rheumatology
Surgical (779 therapies)	1. Casualty (Poly trauma)	1. Surgical Gastroenterology
	2. General Surgery	2. CT Surgery
	3. Orthopaedics and Prosthesis	3. Neuro-surgery
	4. Gynaecology and Obstetrics	4. Urology
	5. ENT and Cochlear Implantation	5. Plastic Surgery
	6. Opthalmology	6. Paediatric Surgery
	7. Oncology	7. Surgical Oncology
		8. Medical Oncology
		9. Radiation Oncology

Source: AHCT

8.8.2 Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure (User Satisfaction)

Monitoring of Network Hospital operations and Aarogyasri patients takes place through the Aarogyasri Health Care Trust (AHCT) web-

enabled business intelligence solution. Network hospitals are monitored on a daily basis in terms of the number of beds available, number of Aarogyasri patients treated/admitted, nature of treatment provided, type of medicines/advice prescribed to patients (if any), date of discharge and follow-up treatment if any.

Any delays in registration of patients or approval of cashless treatment are flagged off and dealt with on priority, in order to ensure (as far as possible) that patients receive prompt service and efficacious treatment. Upon completion of treatment and discharge of the patient from hospital (in case of IPD patients), each patient is sent a letter from the Chief Minister that highlights the treatment provided to him/her free of charge under the Aarogyasri Public Health Insurance Scheme. A postage pre-paid envelope is also enclosed, to encourage the patient to share his/her feedback on the satisfaction with the treatment received.

A summary of the coverage provided and key processes followed for implementation and monitoring of the Aarogyasri Public Health Insurance Scheme benefits are illustrated in the charts below. Coverage and typical process followed at the time of patient registration by the Aarogyamithra, treatment at the network hospital are shown in the charts below.

Financial Coverage

- BPL family covered means the group of individuals as indicated in a 'White Ration Card'.
- Sum insured per family: Rs.1,50,000/- per year.
- Benefit on 'floater basis', can be availed by individual or family.
- Additional buffer amount of Rs. 50,000/- in case of need.
- Premium Collection - by Government of AP through state/local taxes.

Patient Enrolment and Treatment Process flow

Aarogyamithras and network hospital medical officers (doctors) participate in monthly/bi-monthly Health Camps aimed at creating awareness about the Aarogyasri Public health Insurance Scheme and its benefits for BPL patients.

Once a patient arrives at the network hospital, his/her registration is facilitated by the Aarogyamithra, who obtains a pre-authorisation via the Aarogyasri Healthcare Trust portal, usually on the basis of the White (BPL) ration card, and pending confirmation by the attending hospital doctor/surgeon. In case the ration card is not immediately available with the patient his/her caregiver is asked to submit the same within 48 hours of the patient being admitted for treatment. Hospitals are empanelled as per norms decided by an expert medical panel of the AHCT. Their operations with regard to providing medical care to BPL patients are regulated as per laid down guidelines for the 938 medical procedures and surgeries covered under the Aarogyasri Public Health Insurance Scheme. Finally, individual patient or hospital grievances, if any, are resolved by the AHCT Grievance Redressal and Feedback department as per the rules that govern the scheme.

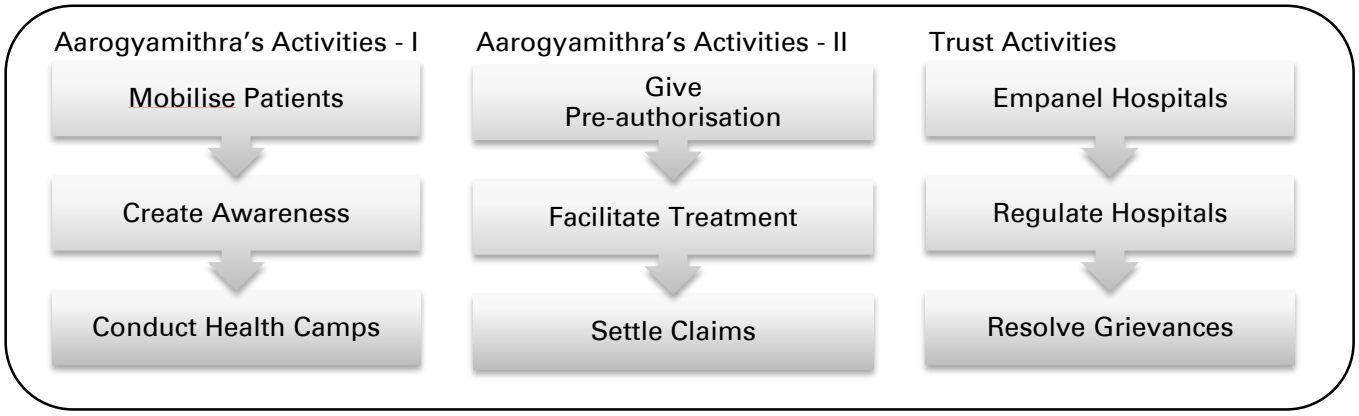


Figure 8.4 – Aarogyamithra's Activities

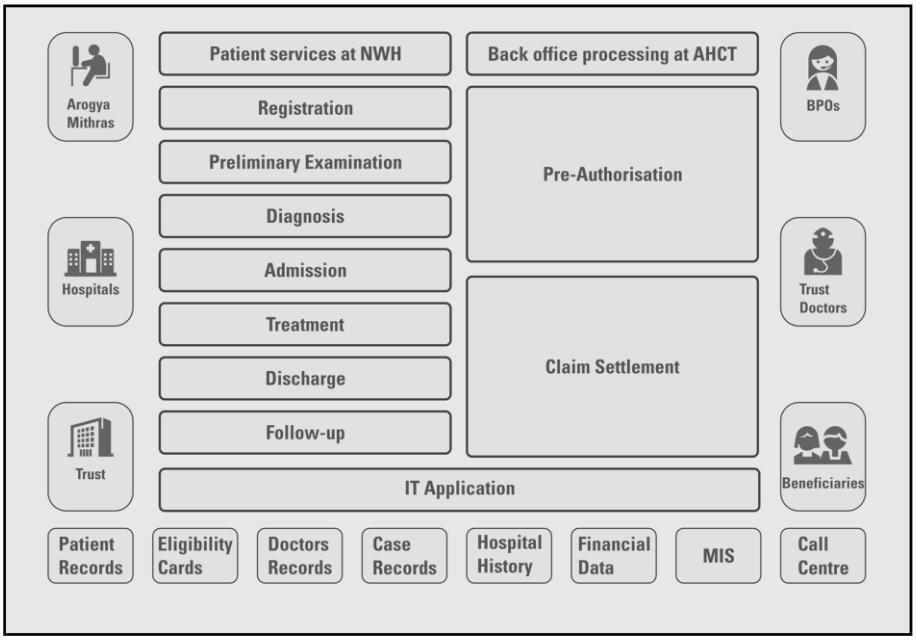


Figure 8.5 - Pictorial Sequence (Process Flow)
Source: AHCT

Besides a three-shift system of rostering for Aarogyamithras, a 24x7 Aarogyasri Helpline (No. 104) operates out of the Head Office of the Aarogyasri Healthcare Trust in Hyderabad to assist Aarogyamithras resolve any issues faced by the BPL patients and suitably respond to queries raised by network hospital doctors. This is represented in the chart below.

Figure 8.6 - Process Flow – Patient
Source: AHCT

The Aarogyasri Healthcare Trust online reporting tool-cum-monitoring portal is equipped to track registration of fresh cases of BPL patients at each network hospital, number of pre-authorisations sought and approved, number and value of claims registered and approved for treatment, availability of hospital beds, patients discharged, patient satisfaction rate and other key performance parameters of the scheme, network hospitals, doctors, patients and Aarogyamithras. A typical 'Dashboard View' is shown in the chart below.

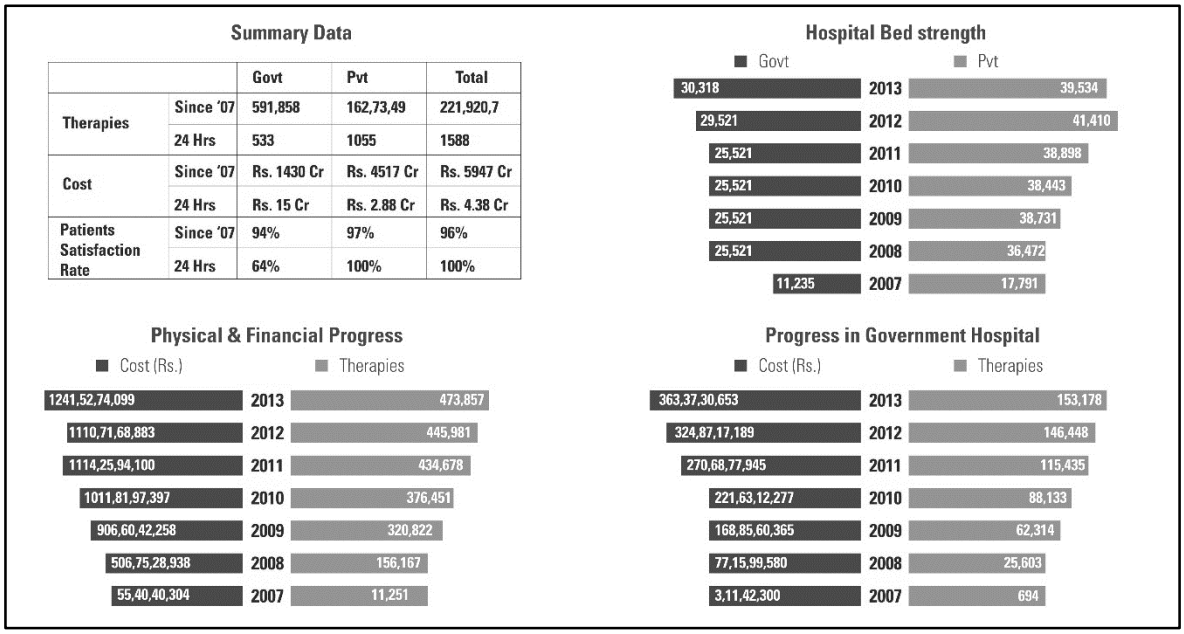


Figure 8.7 - Scheme Progress – Dashboard
Source: AHCT

8.8.3 Capacity Building and IEC Campaigns (Utility and Sustainability)

The Aarogyasri Healthcare Trust has on its panel as many as 457 network hospitals, representing a 'bed capacity' of over 18,000 across the state of Andhra Pradesh for treatment of BPL patients. This is an improvement over the limited capacity of approx. 7,500 beds reserved for BPL patients at government hospitals and represents a good example of a functioning PPP model of healthcare.

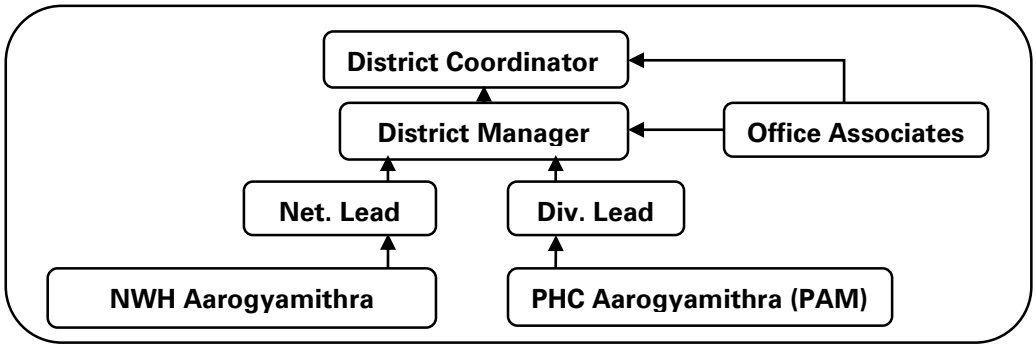


Figure 8.8 - Field Supervision Module Structure of District Office
Source: AHCT

As part of the capacity building efforts for the Aarogyasri Public Health Insurance Scheme, the AHCT organises workshops and training sessions from time to time for capacity building of the District Managers, Network and PHC team leaders, Aarogyamithras and other staff in respect of the scheme features and their roles and responsibilities towards patients.

Hospital Type	Number of Hospitals	Total Number of Beds	Aarogyasri Beds
Corporate	305	43,493	10,873
Government	152	29,778	7,445
Total	457	73,271	18,318

Figure 8.9 - Active Hospitals As on 18-Dec-2013
Source: AHCT

Another aspect of capacity building under the Aarogyasri Public Health Insurance Scheme is to motivate more and more government hospitals to participate in the scheme. Twenty percent of the revenue (fees) earned are retained in a 'revolving fund' with the AHCT and used to improve facilities to provide quality medical care.

Health Camps

Health Camps are the main source of informing, educating and mobilising beneficiaries under the Aarogyasri Public Health Insurance Scheme. All Network Hospitals (NWHs) are required to conduct at least two free Health Camps in a month, as per the schedule and place decided by the AHCT, and as per the below guidelines. Health Camps are an important activity as they are used to provide free medical advice and medicines to needy patients living in remote rural communities.

Health Camp Guidelines

- Mega Health Camps are conducted by Network Hospitals in each Revenue Division of the state, in localities whose dominant residents are people from SC/ST communities, under the supervision of the District Coordinator (DC)
- 80-90 mega Health Camps are organised in the state every month.
- The District Coordinator finalises the health camp proposed locations with the approval of the District Collector
- After receiving approval from the AHCT CEO, the Health Camp locations are announced by means of posters, pamphlets, drum-beats etc. in the 'catchment area'
- Five NWHs are required to participate in each health camp, of which three are corporate NWHs and two are government NWHs
- Five medical officers (doctors) are required to participate in every health camp from the nearest CHCs/PHCs
- AHCT sanctions an amount of Rs. 6,000/- to each NWH participating in the health camp as incentive.

8.8.4 Financial Viability (Sustainability)

Approach for Pricing of Treatments/Procedures

Financial control and viability is ensured by the Aarogyasri Healthcare Trust by fixing tariffs for network hospitals in the state of Andhra Pradesh. The effort is to achieve a balance between 'market tariffs' and 'reasonably remunerative pricing' for treatment, procedures or surgeries performed for BPL patients at government and private network hospitals.

Table 8.2 - Vital Statistics as on 18-Dec-2013

Registrations			Health Camps		
Total	In Patients	Out Patients	Conducted	Patients Screened	Patients Referred
77,40,440	24,54,434	47,88,349	36,652	73,00,985	3,13,055

Pre-authorisations		
Total	Government	Private
22,28,092	5,94,707	16,33,385

Pre-authorised Amount (in Rs. crore)		
Total	Government	Private
5,971.86	1,437.45	4,534.41

Grievances		
Registered	Resolved	Pending
19,115	18,584	531

Source: AHCT

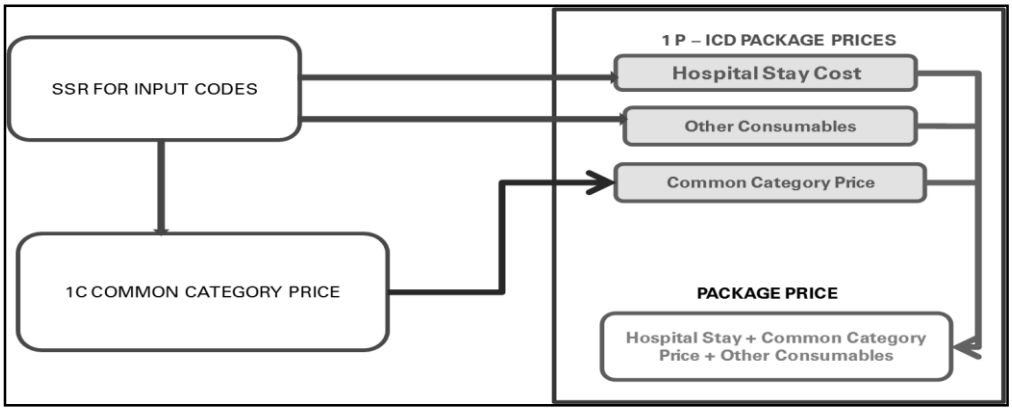


Figure 8.10 - Approach for Pricing of Treatments / Procedures
Source: AHCT

8.8.5 Organisational Structure and Stakeholder Participation (Scalability and Sustainability)

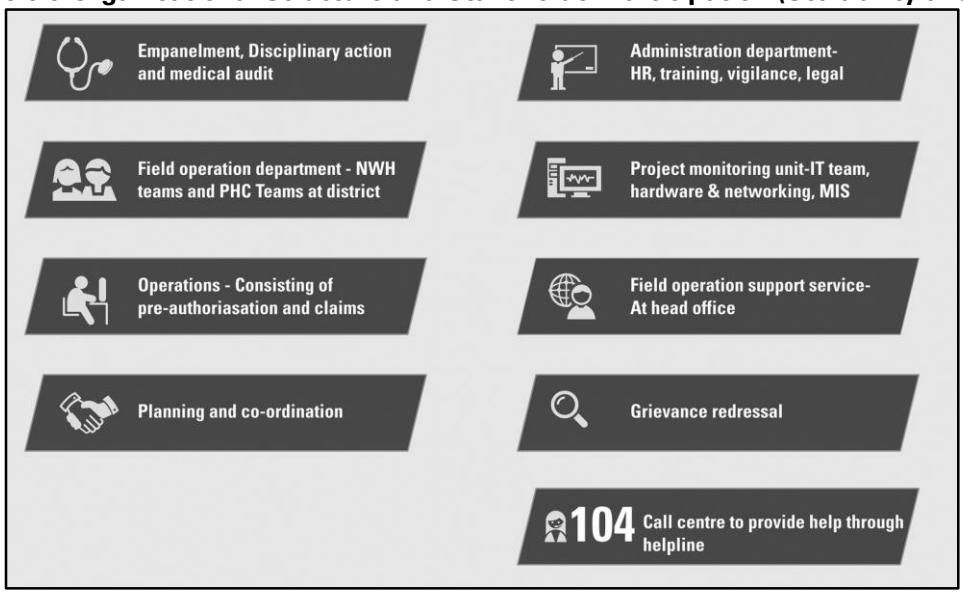
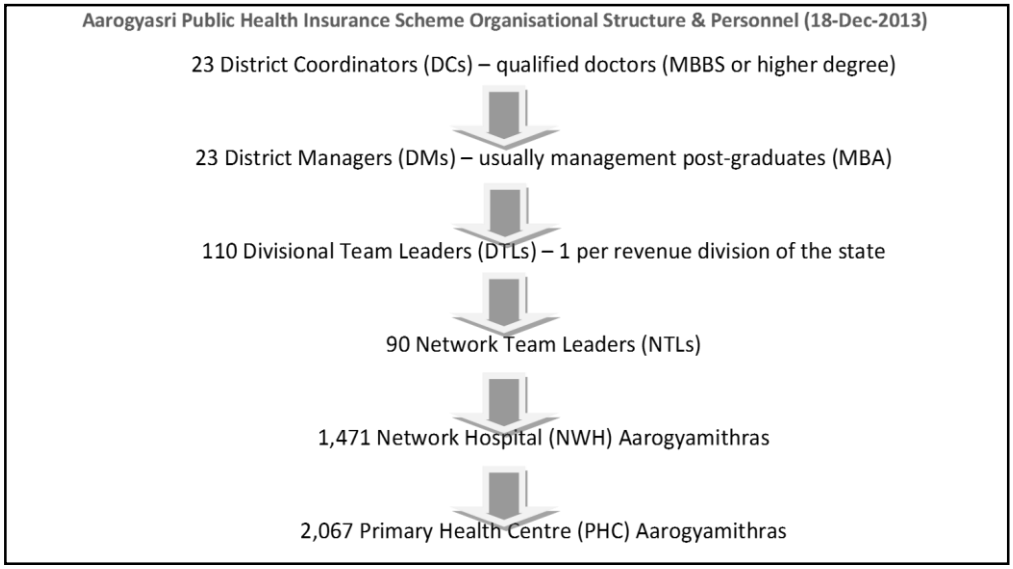


Figure 8.11 - AHCT Departments
Source: AHCT



Note: While the DCs are directly employed by the AHCT, DMs and staff reporting to them are outsourced or 'contract' employees of an agency in each of the 23 districts of the state.

Figure 8.12 – Organisational structure
Source: AHCT

8.8.6 Technology Interventions (Scalability and Replicability)

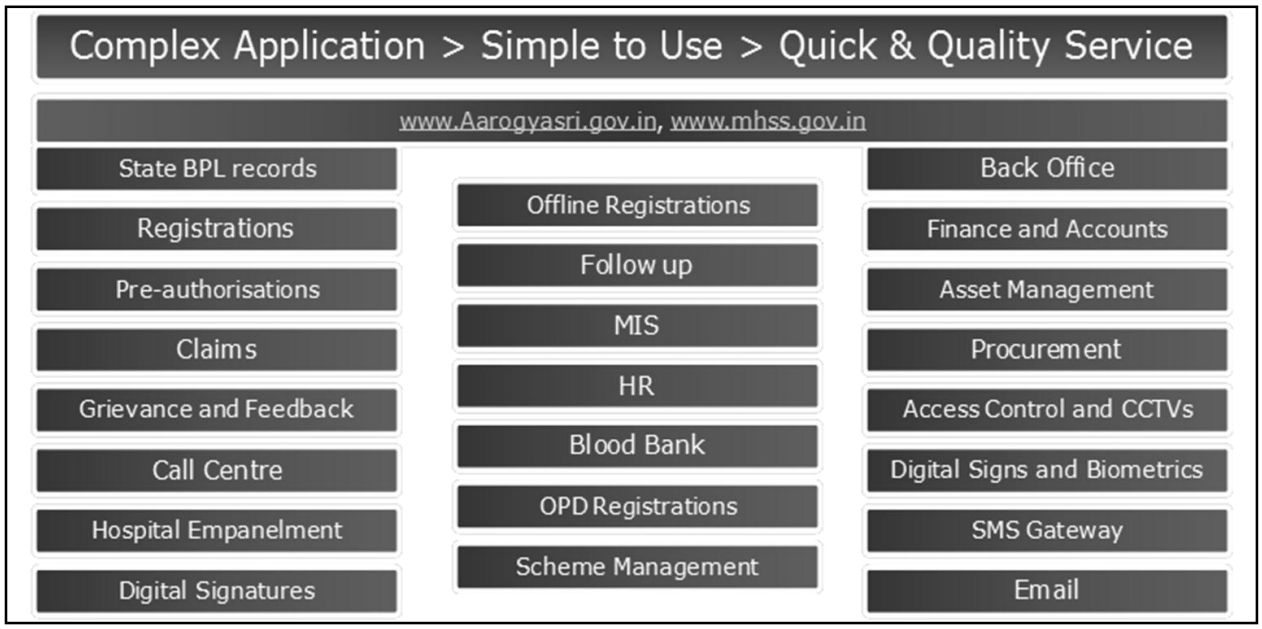


Figure 8.13 - ICT – Comprehensive Online Solution
Source: AHCT

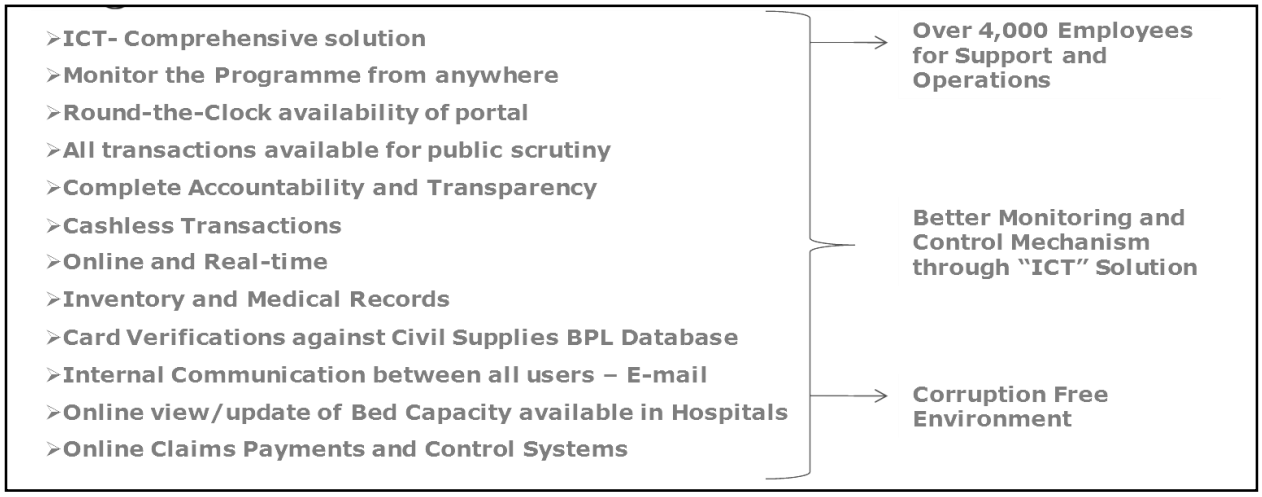


Figure 8.14 - ICT – Solution Highlights
Source: AHCT

As explained in earlier sections, the Aarogyasri Healthcare Trust portal provides an effective reporting-cum-performance monitoring tool to keep track of all vital statistics related to the scheme performance. Aarogyamithras at government hospitals also mark their attendance via a biometric attendance system. Additionally, the Aarogyasri healthcare Trust Board and senior officers conduct periodic reviews and 'surprise' checks on network hospitals from time to time.

8.9 Shortfalls and Suggested Corrective Actions for Replication

Table 8.3 – Initiative shortfalls and suggested corrective actions

Weakness/Shortfall	Suggested Corrective Action
1) **Number of Medical Conditions Covered:** Number of treatments/procedures covered under the Aarogyasri Public Health Insurance Scheme is limited to only 938 medical	An expert review of the number of ailments/medical conditions allowed for free treatment under the Aarogyasri Public Health Insurance Scheme must be conducted, in order to

Weakness/Shortfall	Suggested Corrective Action
procedures, whereas the Employees Health Scheme (EHS), http://www.ehf.gov.in/ of GoAP allows for treatment of over 1,800 medical procedures.	address the changing needs of the target population.
2) Misuse of 'BPL' Status: 85% of the population of AP hold White (BPL) Ration Cards and are therefore 'automatically' eligible for seeking medical treatment under the Scheme.	GoAP needs to take a view on this issue and weed out 'ghost' ration card holders and ineligible families, so that only genuine beneficiaries are able to access the free healthcare services.
3) Sum Insured: The coverage amount of Rs. 1.50 lac per family per annum on floater basis + Rs. 50,000 buffer amount for food, transportation, medicines etc. may not be sufficient in case of a large family or more than one member having to undergo a major surgery/medical procedure in the same year.	A periodic expert review of the amount of total insurance coverage under the Aarogyasri Public Health Insurance Scheme and its suitable enhancement should be undertaken.
4) Misuse of Aarogyasri Public Health Insurance Scheme: Media reports have criticised the Aarogyasri Public Health Insurance Scheme by reporting from time-to-time that private network hospitals in the state are thriving, often by prescribing expensive invasive procedures/surgeries, where a simple medicine-based line of treatment could suffice.	Regular audit of medical procedures/surgeries advised to patients and prescribed medication must be institutionalised into any public health insurance scheme such as the Aarogyasri scheme, in order to minimise chances of misuse.
5) Refresher Training: Refresher training programmes have been suspended for over a year.	There is need to organise regular refresher training sessions, facilitated by senior AHCT officials, especially for Aarogyamithras once in every six months. This is important to understand the changing 'ground realities' and in order to resolve any operational bottlenecks and grievances that may crop up from time-to-time.
6) Lack of Cleanliness and Poor Quality of Food Served at Government Hospitals: Patients often complain of lack of hygiene, filth and squalor in and around government-run hospitals.	AHCT and GoAP Dept. of Health should put in place a plan to create greater awareness about the need for cleanliness, quality food for patients and excellence in medical treatment. Each district government hospital must be encouraged to become a 'nodal centre of excellence'. Government hospital managements must be encouraged to adopt best practices at par with the leading hospitals in India and globally. AHCT should institute an award for recognising the 'cleanest hospital of the year', 'best patient facilities', 'best treatment', 'best overall hospital management' etc.

Weakness/Shortfall	Suggested Corrective Action
	GoAP Dept. of Health must back this initiative with adequate delegation of authority and financial freedom to govt. hospital managements to compensate good performers amongst nursing staff and doctors, for all round performance and with special emphasis on providing services + treatment to BPL patients under the Aarogyasri Health Care Scheme and the GoAP employees under the Employee Healthcare Scheme.
7) Aarogyasri Healthcare Scheme Tariffs: The tariffs paid/payable by AHCT to private network hospitals are often as much as 30% below prevailing market norms. Private network hospitals also provide consultation and medicines free of charge to BPL patients, which is a direct 'out of pocket' expense for them.	AHCT Tariff Advisory Committee must conduct a periodic review of tariffs in line with the scope of the prescribed medical procedure/surgery. Tariffs must be fixed in order that private network hospitals/their managements are adequately compensated for providing high quality treatment and good patient care services.
8) State-level and District-level AHCT Teams: While the AHCT teams (up to District Coordinator) are employees of AHCT, District Managers, Team Leaders and Aarogyamithras are employed on the rolls of a third-party agency in each district. These front-line staff are deployed at hospitals to facilitate the day-to-day operations of the scheme. However, it was found that the working conditions of Aarogyamithras are far from satisfactory. In fact, there has been no revision of their pay scale (quantum of pay) ever since the inception of the scheme starting 1st April 2007. The Aarogyamithras do not have any benefits such as paid leave, maternity leave (for women employed as Aarogyamithras) or even health insurance for themselves. As such the Aarogyamithras are subject to the direction of the agency that employs them.	AHCT must review the service conditions of Aarogyamithras on priority. It is very important that this front-line cadre of the Aarogyasri Public Health Insurance Scheme are adequately compensated and their benefits meet the minimum wages prescribed and leave permitted as per relevant laws governing employment in India.
9) Lack of seamless ICT system inter-linkages between AHCT and hospital MIS systems: ICT solutions have been very effectively deployed by the AHCT in the form of its portal-cum-reporting module. However, it would appear that many of the large government-run hospitals have not invested in either a modern Hospital Information Management System (HMIS) or Human Resource Management System (HRMS). Some of these hospitals, such	Providing modern ICT solutions is an important area that needs to be examined in greater detail and appropriate solutions deployed in order to improve patient monitoring, treatment efficacy and the overall quality of healthcare services provided. In case HMIS, HRMS or other IT systems are already installed in a hospital, it is very important to link these with the AHCT portal-cum-reporting module to provide seamless services to patients

Weakness/Shortfall	Suggested Corrective Action
as the Gandhi General Hospitals, Secunderabad are often tertiary care institutions.	and monitoring & reporting facilities to hospital administrators.

8.10 Indicative Factors for Identification of Target States

In May 2013, a high level United Nations panel of eminent persons, headed by Dr. Susilo Bambang Yudhyono, President, Indonesia; Ms. Ellen Johnson Sirleaf, President, Liberia and Mr. David Cameron, Prime Minister, UK proposed twelve new "Post-2015 Universal Developmental Goals" for all UN member countries to adopt in their countries' plans and development goals. '*End Poverty'* and '*Ensure Healthy Lives'* are two of the twelve proposed goals. Towards this end, providing modern, wholesome education and gainful employment to all men and women attaining the age of 18 years is a long-term goal for governments. But, in the short to medium term it is equally important to ensure that women (especially adolescent girls and young women in the reproductive age group), children and the elderly are cared for through adequate strengthening of public healthcare service delivery institutions and their service delivery capabilities.

As per the World Bank report, "*Government-Sponsored Health Insurance in India: Are You Covered?"* by Gerard La Forgia and Somil Nagpal, health spending is one of the important causes of poverty in India. The country's public (government) financing for health care is less than 1 percent of the world's total health expenditure, although it is home to over 16 percent of the world's population. Families meet almost 70 percent of their health expenses out of their own pockets, placing considerable financial burden on poor households, often pushing them deeper into poverty.

The Central Govt. schemes studied in the report are: Employees State Insurance Scheme (ESIS), Rashtriya Swasthya Bima Yojana (RSBY), and Central Government Health Scheme (CGHS). The state-level schemes are: Rajiv Aarogyasri (Andhra Pradesh), Yeshasvini (Karnataka), Vajpayee Aarogyasri (Karnataka), Chief Minister Kalaignar's Scheme (Tamil Nadu), RSBY Plus (Himachal Pradesh), and the then proposed Aapka Swasthya Bima Yojana (Delhi). In 2011-12, the Tamil Nadu scheme was modified to include additional procedures and re-launched as the Chief Minister's Comprehensive Health Insurance Scheme.

According to the study, over the period 2006-2011, government sponsored schemes have contributed to a significant increase in the population covered by health insurance in the country, scaling up at a pace possibly unseen elsewhere in the world. Through their efforts, over 300 million people, or more than 25 percent of India's population, gained access to some form of health insurance by 2010, up from 55 million in 2003-04. More than 180 million of these were people below the poverty line. Given these trends, the study projects that by 2015, more than 630 million persons, or about half of the country's population, can be covered with some form of health insurance. In 2015, spending through health insurance is also likely to reach 8.4 percent of total health spending, up from 6.4 percent in 2009–10, the study says.

An illustrative table showing the incidence of poverty in India is shown in the tables over leaf:

Table 8.4 - Number and Percentage of Population below poverty line by states - 2011-12 (Tendulkar Methodology)

S. No.	States	Rural		Urban		Total	
		%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)
1	Andhra Pradesh	10.96	61.80	5.81	16.98	9.20	78.78
2	Arunachal Pradesh	38.93	4.25	20.33	0.66	34.67	4.91

S. No.	States	Rural		Urban		Total	
		%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)	%age of Persons	No. of Persons (lacs)
3	Assam	33.89	92.06	20.49	9.21	31.98	101.27
4	Bihar	34.06	320.40	31.23	37.75	33.74	358.15
5	Chhattisgarh	44.61	88.90	24.75	15.22	39.93	104.11
6	Delhi	12.92	0.50	9.84	16.46	9.91	16.96
7	Goa	6.81	0.37	4.09	0.38	5.09	0.75
8	Gujarat	21.54	75.35	10.14	26.88	16.63	102.23
9	Haryana	11.64	19.42	10.28	9.41	11.16	28.83
10	Himachal Pradesh	8.48	5.29	4.33	0.30	8.06	5.59
11	Jammu & Kashmir	11.54	10.73	7.20	2.53	10.35	13.27
12	Jharkhand	40.84	104.09	24.83	20.24	36.96	124.33
13	Karnataka	24.53	92.80	15.25	36.96	20.91	129.76
14	Kerala	9.14	15.48	4.97	8.46	7.05	23.95
15	Madhya Pradesh	35.74	190.95	21.00	43.10	31.65	234.06
16	Maharashtra	24.22	150.56	9.12	47.36	17.35	197.92
17	Manipur	38.80	7.45	32.59	2.78	36.89	10.22
18	Meghalaya	12.53	3.04	9.26	0.57	11.87	3.61
19	Mizoram	35.43	1.91	6.36	0.37	20.40	2.27
20	Nagaland	19.93	2.76	16.48	1.00	18.88	3.76
21	Odisha	35.69	126.14	17.29	12.39	32.59	138.53
22	Punjab	7.66	13.35	9.24	9.82	8.26	23.18
23	Rajasthan	16.05	84.19	10.69	18.73	14.71	102.92
24	Sikkim	9.85	0.45	3.66	0.06	8.19	0.51
25	Tamil Nadu	15.83	59.23	6.54	23.40	11.28	82.63
26	Tripura	16.53	4.49	7.42	0.75	14.05	5.24
27	Uttarakhand	11.62	8.25	10.48	3.35	11.26	11.60
28	Uttar Pradesh	30.40	479.35	26.06	118.84	29.43	598.19
29	West Bengal	22.52	141.14	14.66	43.83	19.98	184.98
30	Puducherry	17.06	0.69	6.30	0.55	9.69	1.24
31	Andaman & Nicobar Islands	1.57	0.04	0.00	0.00	1.00	0.04
32	Chandigarh	1.64	0.00	22.31	2.34	21.81	2.35
33	Dadra & Nagar Haveli	62.59	1.15	15.38	0.28	39.31	1.43
34	Daman & Diu	0.00	0.00	12.62	0.26	9.86	0.26
35	Lakshadweep	0.00	0.00	3.44	0.02	2.77	0.02
	All India	**25.70**	**2166.58**	**13.70**	**531.25**	**21.92**	**2697.83**

Source: Planning Commission of India

Notes:

1 Population as on 1st March 2012 has been used for estimating number of persons below poverty line. (2011 Census population extrapolated)
2 Poverty line of Tamil Nadu has been used for Andaman and Nicobar Island.
3 Urban Poverty Line of Punjab has been used for both rural and urban areas of Chandigarh.
4 Poverty Line of Maharashtra has been used for Dadra & Nagar Haveli.
5 Poverty line of Goa has been used for Daman & Diu.
6 Poverty Line of Kerala has been used for Lakshadweep.

For a country like India, with only 6.49 doctors per 10,000 people and private out-of-pocket healthcare expenditure estimated at 60% (*Source: FORBES India magazine, November 15, 2013 - http://forbesindia.com/article/world-watch/what-govts-spend-on-health-care/36443/1*), it is imperative to explore new

models such as Public Private Partnership (PPP) in order to improve the reach of medical services to the poor and those living in remote, rural/tribal communities. The added advantage of such a system can be the overall lowering of healthcare costs for the common citizen, through 'economies of scale' and optimal utilisation of available healthcare infrastructure in both the public and private sectors.

An essential consideration in the replication strategy would be to look states/regions with a large BPL population, low availability of doctors, high IMR and MMR, lower than average rural life expectancy and high incidence of indebtedness due to emergency medical expenses. Such states/regions can benefit immensely by institutionalising a publicly funded universal health insurance programme. The long term benefits would include not just lower IMR/MMR and higher average life expectancy, but increased competitiveness and prosperity of the target population groups.

Prime examples of states/UTs where a publicly funded health insurance scheme can be replicated, based on BPL criteria alone, are Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Chandigarh, Dadra & Nagar Haveli, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Tamil Nadu, Tripura, West Bengal and Uttar Pradesh. Even though some of the states such as Karnataka, Maharashtra, Rajasthan and Tamil Nadu have a relatively smaller proportion of BPL citizens vis-à-vis the national average, the absolute number of BPL residents makes it important for such states to make low cost public healthcare services widely available. Many states have adopted the RSBY route to provide health insurance to BPL families, in order to insure them against catastrophic healthcare costs.

State health administrators are strongly encouraged to review the key findings of this evaluation study and the recommendations in the following section, in order to arrive at their own optimal model of nature and quantum of public health insurance and healthcare services delivery mix.

8.11 Implementation Approach

Based on the 'Outcomes Achieved', 'Key Study Findings,' recommendations of Section 8.10 and the 'Suggested Corrective Actions' to fix shortfalls enumerated in earlier sections , the following guidelines are provided to help the reader size and plan a 'model' public health insurance scheme in his/her state.

Table 8.5 - Critical Success Factors for Replication of the Initiative

Factor	Strength/Benefit
Scheme Scope & Coverage, Enabling Policy Interventions	1) **Public-Private Partnership (PPP)**: The Aarogyasri Public Health Insurance Scheme Andhra Pradesh has exploited the Public-Private Partnership (PPP) model for maximum impact from limited resources. By enlisting private hospitals into the Aarogyasri Health Care Trust (AHCT) network, the state has effectively expanded the reach and availability of expert healthcare services to the door-steps of the poorest of the poor families. 2) **Simple Eligibility Criteria**: The eligibility criteria for availing benefits under the Aarogyasri Public Health Insurance Scheme have been fixed simply as "any individual or family enlisted in the BPL database of the Dept. of Civil Supplies, GoAP". Thus, an individual or family who holds a White (BPL) Ration Card of Andhra Pradesh is automatically eligible to avail cashless healthcare services for 938 medical procedures (medical treatment, surgeries, medicines etc.) under the Aarogyasri Public Health Insurance Scheme at 457 network hospitals (305

Factor	Strength/Benefit
	private hospitals + 152 government hospitals) across the 23 districts of the state. 3) **Cashless Medical Treatment Facilities**: Cashless treatment and medicines for up to 233 lac BPL families of Andhra Pradesh, up to a value of Rs. 1.50 lac + a buffer amount of Rs. 50,000 for food, transportation, medicines etc. per family.
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	1) **Monitoring of Network Hospital Operations**: The Aarogyasri Health Care Trust (AHCT) portal-cum-business intelligence solution allows for regular monitoring of all network hospitals, both in terms of the nature and type of treatment prescribed to patients, as well as the quality/effectiveness of treatment rendered.
Capacity Building and IEC Campaigns	**1) Training & Orientation**: Training is provided to all Aarogyamithras, Team Leaders and other field staff on joining the Aarogyasri Public Health Insurance Scheme network, to familiarise them with their duties and responsibilities towards BPL patients. This is important to ensure smooth flow of registration, pre-authorisation, treatment, discharge, follow-up and payment realisation by NWH and reimbursement to patient for additional expenses, if any. **2) IEC Campaigns**: By means of scheme posters, banners and public announcements in villages have been conducted from time to time, especially at the time of organising Health Camps.
Financial Viability	GoAP did away with the services of insurance companies and set up the Aarogyasri Health Care Trust (AHCT) to directly administer the Aarogyasri Public Health Insurance Scheme. Patient treatment expenses are reimbursed to network hospitals by AHCT in accordance with the approved tariff chart, and subject to defined rules of the scheme. **1) Restriction of Common Procedures to Govt. Hospitals**: Of the 938 procedures eligible for treatment under the Aarogyasri Public Health Insurance Scheme, 133 common procedures are reserved for examination/investigation and treatment at government-run hospitals alone. This is to prevent inflated/false claims on account of fraudulent activities/collusion between private network hospital staff and patients. **2) Standardisation of Common Elements covered under Medical Procedures**: AHCT is undertaking an exercise to standardise common elements across each type of treatment/medical procedure. The objective is to assign a cost/fee to each element. This will help AHCT to make payments to Network Hospitals only for the specific services provided to patients/treatments rendered. **3) Revolving Fund**: 20% of the fees payable to government hospitals are retained by AHCT in a 'revolving fund'. This fund is utilised to upgrade the infrastructure or medical equipment or provide and strengthen lab facilities.

Factor	Strength/Benefit
Organisational Structure and Stakeholder Participation	1) **State-level and District-level AHCT Teams**: The Aarogyasri Health Care Trust (AHCT) has appointed a well-staffed team of qualified doctors, IT professionals and managers at the Hyderabad HO as well as support teams in each of the 23 districts of the state to cater to the insurance, treatment, counselling and rehabilitation needs of BPL patients (please refer Annexure IV for details) who seek healthcare services under the Aarogyasri Public Health Insurance Scheme.
Technology Interventions	1) **Innovative use of Information and Communication Technologies (ICTs)**: This is one of the key factors that allows for efficient management of the Aarogyasri Public Health Insurance Scheme. The online portal-cum-reporting module available at www.aarogyasri.gov.in is one such innovation, developed and maintained by M/s Tata Consultancy Services Ltd. (TCS). It allows for online pre-authorisation and comprehensive reporting and follow-up modules aid in efficient management of AHCT operations. Other ICT interventions include a 24x7 AHCT helpline available on the number '104' from any telephone in the state, and biometric marking of attendance for AHCT team and staff – District Coordinators (DCs), District Managers (DMs), Team leaders (TLs) and Aarogyamithras. A mobile 'app' has also been developed for marking attendance by staff working in remote/upcountry locations. Text alerts are sent through an SMS gateway to patients and the concerned Aarogyamithras, post-discharge for follow-up treatment and monitoring.

Salient Features of a Robust Public Health Insurance Scheme: Replication Guidelines

Step 1: Adopt/Replicate Best Practices in Awareness Building, Patient Counselling, Registration, Treatment, Discharge and Follow-up

By adopting the best practices already in vogue in the Aarogyasri Public Health Insurance Scheme, Andhra Pradesh and incorporating changes/modifications as suggested above, any other large or mid-size state of the country could roll out a similar 'safety net' of a public health insurance scheme, especially where BPL families are a large proportion of the total population and government healthcare infrastructure plus trained resources insufficient to render quality medical care to the people. Prime examples could be states like Odisha, Chhattisgarh, Madhya Pradesh, Jharkhand, West Bengal, Bihar and Uttar Pradesh that are home to large BPL populations.

Step 2: Build a Holistic System of Empanelment of Network Hospitals, Standard Treatment Guidelines and Essential Drugs List for all-round, sustained functioning of scheme

The overarching need is to knit together a holistic system comprising:

a) **Service Delivery Institutions** – at primary, secondary and tertiary levels throughout the state/region;
b) **Committed Cadre of Expert, Healthcare Professionals** – at both government-run/public as well as private hospitals;
c) **Free or Affordable, Quality Essential and Generic Drugs** – made available to poor patients at govt. hospitals/dispensaries or at "Jeevan Dhara" stores/"Jan Aushadhi" stores at a convenient distance from the normal place of residence.

Step 3: Account for Changing Socio-Economic Trends, Changing Norms of Medical Treatment, Availability of 'New Age' Drugs and Technological Advancements

Planners would do well to take into changing trends in demographics and socio-economic conditions of the population in the target state(s), especially the BPL population. New developments and changes in prescribed norms for medical treatment, availability of 'new age' drugs and technological advancements in patient screening, testing and diagnosis must be duly factored into the scheme plan. This will allow for development of a comprehensive publicly insured, mass healthcare model. It will help planners to ensure that the emergent 'PPP' system is well-calibrated to the changing 'ethical' guidelines and rules of the healthcare and pharmaceutical sectors.

Step 4: Incorporate a Robust Governance, Quality Assurance and Grievance Redressal System

A robust quality assurance/governance structure must be in place from "Day One" to ensure timely, transparent and fair redressal of complaints and queries at both the institutional as well as individual levels.

For example, the Aarogyasri Public Health Insurance Scheme/Aarogyasri Healthcare Trust defines the following criteria for empanelment of network hospitals:

a) **Definition of Hospital**: A Hospital/Nursing Home means any functioning speciality hospital established for indoor medical care and treatment of disease and injuries, Hospital should have minimum of 50 inpatient beds with adequate spacing and supporting staff as per norms

b) **Mandatory Certificates for a Hospital**: These are detailed in the table below for quick reference of the reader:

Table 8.6 - Mandatory Certificates for a Hospital

Name of Approval/Certificate	Issuing Authority
Building Plan approval & Occupancy Certificate	Municipal Commissioner or Executive Officer Panchayat
D & O Trade Licence	Municipal Commissioner or Executive Officer Panchayat
Fire Dept. Clearance Certificate	Fire Services Authority
State Medical Council Registration	District Medical and Health Officer (DM&HO)
PC & PNDT Act Registration	District Medical and Health Officer (DM&HO)
Blood Bank Licence	Director, Drug Control Administration (DCA)
Pharmacy Licence	Director, Drug Control Administration (DCA)
Transplantation of Human Organs Registration Certification	Director of Medical Education Committee
Pollution Control Board Certificate	State Pollution Control Board
Registration Certificate of Ambulance	Regional Transport Authority
Licence for Surgical Spirits	Excise Tax Authority
Licence for Morphine	Excise Tax Authority
Licence for Opium	Excise Tax Authority

Source: AHCT

c) **Specialities for Empanelment**: These are listed out in the table below:

Table 8.7 - Specialities for Empanelment

Surgical Specialities	Medical Specialities
S1-General Surgery	M1-Critical Care
S2-ENT	M2-General Medicine
S3-Ophthalomology	M3-Infectious diseases

Surgical Specialities	Medical Specialities
S4-Gyneacology & Obstetrics	M4-Pediatrics
S5-Orthopedics	M5-Cardiology
S6-Surgical Gastroenterology	M6-Nephrology
S7-Cardio Thoracic Surgery	M7-Neurology
S8-Pediatric Surgery	M8-Pulmnology
S9-Genito Urinary Surgery	M9-Dermatology
S10-Neuro Surgery	M10-Rheumatology
S11-Surgical Oncology	M11-Endocrinology
S12-Medical Oncology	M12-Medical Gastroenterology
S13-Radiation Oncology	
S14-Plastic Surgery	
S15-Polytrauma	
S16-Cochlear Implant Surgery	
S17-Prothesis	

Source: AHCT

Detailed guidelines and an exhaustive list of requirements for registration – in terms of **Infrastructure, Equipment, Manpower** and **Services** - should be posted on the state public health insurance portal. For example, the state of Andhra Pradesh has posted detailed guidelines on the AHCT portal www.aarogyasri.gov.in.

Step 5: Institutionalise a Periodic Review of Core Mission & Scheme Goals; Strengthen Market Linkages for Long-term Scheme Sustenance and Viability

A formal mechanism of review of the scheme goals and objectives vis-à-vis changing ground realities and stakeholder expectations must be institutionalised, so that the scheme does not 'lose steam' in the absence of a visionary individual or change of priorities on the part of the political executive.

Appropriate market linkages must be established to ultimately make the scheme self-sustaining and adaptable to meet the emerging needs of the target population.

Case Study: Rashtriya Swasthya Bima Yojana (RSBY); Comparison with Aarogyasri Public Health Insurance Scheme, Andhra Pradesh

Rashtriya Swasthya Bima Yojana (RSBY, literally "National Health Insurance Programme") is a government-run health insurance scheme for India's poor. It provides for cashless insurance for hospitalisation in public as well private hospitals. The scheme started enrolling on April 1, 2008 and has been implemented in 25 states of India. A total of 23 million families have been enrolled as of February 2011. The RSBY is a project under the Ministry of Labour and Employment, Govt. of India.

Every "below poverty line" (BPL) family holding a yellow/white ration card pays Rs. 30 registration fee to get a biometric-enabled smart card containing their fingerprints and photographs. This enables them to receive inpatient medical care of up to Rs. 30,000 per family per year in any of the empanelled hospitals. Pre-existing illnesses are covered from "day one", for head of household, spouse and up to three dependent children or parents.

In the Union Budget for 2012-13, the Govt. of India made a total allocation of Rs. 1,096.7 crore towards RSBY. Although meant to cover the entire BPL population (about 37.2 per cent of the total Indian population according to the Tendulkar Committee estimates), it had enrolled only around 10 per cent of the Indian population by March 31, 2011. Also, it is expected to cost the exchequer at least Rs. 3,350 crore a year to cover the entire BPL population.

The scheme has won praise from the World Bank, the UN and the ILO as one of the world's best health insurance schemes. In fact, Germany

has shown interest in adopting the smart card based model for revamping its own social security system, the oldest in the world, by replacing its current, expensive, system of voucher based benefits

One of the big changes this scheme is bringing investments to unserved areas. Most of private investments in healthcare in India have been focused on tertiary or specialised care in urban areas. However, with RSBY coming in, the scenario is changing. New age companies like Glocal Healthcare Systems, a company based out of Kolkata and funded by Tier I Capital Funds like Sequoia Capital and Elevar Equity are setting up state-of-the-art hospitals in semi-urban - rural settings. This trend can help to create the infrastructure that India's healthcare system needs urgently.

How RSBY Works

The broad activities that are part of the RSBY Project may be summed up as follows:

a) **Financing for RSBY:** RSBY is a Government sponsored scheme for the BPL population of India. The majority of the financing, about 75 percent, is provided by the Government of India (GoI), while the remainder is paid by the respective state government. Government of India's contribution is 90 percent in case of North-eastern states and Jammu and Kashmir and respective state Governments need to pay only 10% of the premium. Beneficiaries need to pay only Rs. 30 as the registration fee. This amount is to be used for incurring administrative expenses under the scheme.

b) **Selection of Insurance Company**: State governments engage in a competitive public bidding process and select a public or private insurance company licenced to provide health insurance by the Insurance Regulatory Development Authority (IRDA) or enabled by a Central legislation. The technical bids submitted must conform to a number of requirements as per GoI norms. All bids which are technically qualified go to the financial evaluation stage. The insurer with the lowest financial bid is then selected for providing health insurance in the state for a particular district/set of districts. The financial bid is essentially an annual premium per enrolled household. The insurer must agree to cover the benefit package prescribed by GoI through a cashless facility that in turn requires the use of smart cards which conform to certain specifications and must be issued to all members.

   Each contract is specified on the basis of an individual district in a state and the insurer is required to set up an office in each district. While more than one insurer can operate in a particular state, only one insurer can operate in a single district at any given time.

c) **Preparation of BPL Data:** RSBY provides health insurance for the enrolled BPL families from each district up to a maximum number of households based on the definition and the figures provided for each state by the Planning Commission of India. The concerned state government must prepare and submit the BPL data in an electronic format specified by Government of India. The format requires details of all the family members including name, father's or husband's name for the head of household, age, gender and relationship with the head of household. Respective state governments need to convert their existing BPL data in this format for each district and send these to Ministry of Labour and Employment, Government of India which in turn checks the compatibility of this data with the standard format. However, state governments alone are responsible for the accuracy of their BPL lists. Preparation of BPL data in the specified format is necessary for implementing the scheme in the district.

d) **Enrolment of Beneficiaries**: An electronic list of eligible BPL households is provided to the insurer using a pre-specified data format. An enrolment schedule for each village, along with dates, is prepared by the insurance company with the help of the district level officials. As per the schedule, the BPL list is posted in each village at enrolment station and prominent places prior to the enrolment

and the date and high location of the enrolment in the village is publicised in advance. Mobile enrolment stations are set up at local centres (e.g., public schools) at each village. These stations are equipped by the insurer with the hardware required to collect biometric information (fingerprints) and photographs of the members of the household covered and a printer to print smart cards with a photo. The smart card, along with an information pamphlet describing the scheme and the list of hospitals, is provided on the spot once the beneficiary has paid the Rs. 30 fee. The process normally takes less than ten minutes. The cards are handed over in a plastic cover.

A government officer (called Field Key Officer – FKO) needs to be present and must insert his/ her own, government-issued smart card to verify the legitimacy of the enrolment. (In this way, each person enrolled can be tracked to a particular state government official). In addition to the FKO, an insurance company representative/smart card agency representative must be present. At the end of the each day of enrolment, the list of households which have been issued smart cards is sent to the state nodal agency. This list of enrolled households is maintained centrally and is the basis for financial transfers from the Government of India to the state governments. RSBY has a provision whereby an insurer can hire intermediaries (e.g. NGOs, MFIs etc.) to provide grassroots outreach and assist members in utilising the healthcare and medical services after enrolment.

e) **Empanelment of Health Care Providers**: After the insurance company is selected, they need to empanel both public and private health care providers in the project and nearby districts. The empanelment of the hospitals is done based on prescribed criteria. Empanelment of hospitals is to be done as soon as the insurer signs the contract with the state nodal agency and it can continue simultaneously with the enrolment of beneficiaries. The insurer is required to empanel enough hospitals in the district so that beneficiaries need not travel very far to obtain treatment. For empanelment of public hospitals, the insurer needs to coordinate with respective health department of the state.

The empanelled hospitals are required to install necessary hardware and software so that RSBY smart card transactions can be processed. They also need to set up a special RSBY helpdesk with trained staff. The hospital list should allow for both public and private hospitals who agree to participate. The insurer must also provide a list of RSBY empanelled hospitals, to the beneficiaries at the time of enrolment. This list can be revised at periodic intervals as more hospitals are added to the list. When empanelment takes place, a nationally unique hospital ID number is generated so that transactions can be tracked at each hospital.

f) **Utilisation of Services by Beneficiaries**: The transaction process begins when the member visits the participating hospital. After reaching the hospital, beneficiary is required to visit the RSBY helpdesk at the hospital where his/her identity is verified by his/her photograph and fingerprints which are stored on his/her smart card.

If a diagnosis leads to hospitalisation, the assistant at the help desk checks whether the procedure is covered in the list of pre-specified packages. If the procedure is covered, the appropriate prescribed package is selected from the menu. If the procedure is not in the package list, the help desk assistant checks with the insurer regarding the price for that procedure. Upon release of the beneficiary from the hospital, the card is again swiped along with finger print verification and the pre-specified cost of the procedure is deducted from the amount available on the card. The beneficiary is also paid by the hospital Rs. 100 as transportation expense at the time of the discharge. However, total transportation assistance cannot exceed Rs. 1,000 per year and it is part of the Rs. 30,000 per annum coverage. No

proof is required to be submitted by the beneficiary to get the transportation assistance.

g) **Claim Settlement**: After rendering service to the patient, the empanelled hospital needs to send an electronic report to the Insurer/Third Party Administrator (TPA). The Insurer/ TPA after going through the records information make the payment to the hospital within a specified time period, which has been agreed between the Insurer and the hospital.

h) **Portability of Smart Card**: On receipt of the smart card and consequent to the commencement of the policy, the beneficiary can avail of health service facilities in any of the RSBY empanelled hospital across India. Any hospital which is empanelled under RSBY by any insurance company is required to provide cashless treatment to the beneficiary.

i) **Monitoring and Evaluation**: Information relating to transactions that take place each day at each hospital is sent through a phone line to a district server. A separate set of pre-formatted tables are generated for the insurer and for the government nodal agency, respectively. This allows the insurer to track claims, transfer funds to the hospitals and investigate in the case of suspicious claim patterns through on-site audits.

Pros and Cons of RSBY vs. Aarogyasri Public Health Insurance Scheme, Andhra Pradesh

In a nutshell, while the RSBY provides insurance up to a value of Rs. 30,000 per BPL family per year, Aarogyasri Public Health Insurance Scheme in Andhra Pradesh provides five times the insurance limit of the former. While the RSBY issues a smart card with the photos and fingerprints data of family members embedded in the chip, the Aarogyasri Public Health Insurance Scheme accepts the bar coded, white ration card issued by the state's Civil Supplies department as sufficient proof of identity of BPL status (eligibility condition). However, while the RSBY card is portable and can be used anywhere across India, Aarogyasri Public Health Insurance Scheme patients may only avail treatment within the state of Andhra Pradesh.

Hence, the comparative assessment of RSBY and Aarogyasri Public Health Insurance Scheme throws up a big question for healthcare planners – "What is the optimal coverage per capita under a public health insurance scheme that is viable and sustainable for a state, and what proportion of a state's population should receive the benefits under a publicly financed healthcare scheme?". If the goal is to strictly limit the coverage of publicly funded health insurance schemes to the deserving poor segment of the population, the RSBY seems to offer a more sustainable solution. If, however, the goal of the government is to provide universal health coverage to a state's residents, then the Rajiv Aarogyasri Public Health Insurance Scheme of Andhra Pradesh seems more suitable.

A brief comparison of the RSBY, MoLE and Rajiv Aarogyasri Health Insurance Scheme, Andhra Pradesh is provided in the table below:

Table 8.8 – RSBY vs Aarogyasri

RSBY, Ministry of Labour and Employment, Govt. of India			Rajiv Aarogyasri Health Insurance Scheme, Govt. of Andhra Pradesh		
No. of Procedures Covered	**Insurance Coverage (Rs. per family per annum)**	**Maximum Premium (Rs. per family per annum)**	**No. of Procedures Covered**	**Insurance Coverage (Rs. per family per annum)**	**Expenditure Incurred (Rs. per Therapy)**
727 in-patient surgical procedures, including maternity and new-born care, but excluding abortion and other defined exclusions	30,000	750	938	1,50,000 on floater basis + 50,000 buffer amount	26,798

Source: RSBY, MoLE

Special Notes

1) **Moral Hazard:** "Moral hazard" is the term economists use to describe the fact that insurance can change the behaviour of the person being insured. For example, if your office gives you and your co-workers all the free Pepsi you want—if your employer, in effect, offers universal Pepsi insurance—you will drink more Pepsi than you would have otherwise. If you have a no-deductible fire-insurance policy, you may be a little less diligent in clearing the brush away from your house. The savings-and-loan crisis of the 1980s was created, in large part, by the fact that the US federal government insured savings deposits of up to a hundred thousand dollars, and so the newly deregulated S&L's made far riskier investments than they would have otherwise. Insurance can have the paradoxical effect of producing risky and wasteful behaviour. Economists spend a great deal of time thinking about such moral hazard for good reason. Insurance is an attempt to make human life safer and more secure. But, if those efforts can backfire and produce riskier behaviour, providing insurance and fixing the optimal level of benefits becomes a much more complicated and problematic endeavour.

2) **Performance of Government versus Private Hospitals under Rajiv Aarogyasri Public health Insurance Scheme:** As shown in the chart below, private network hospitals account for 66.7% of the AHCT network of healthcare institutions and 59.4% of all Aarogyasri patient beds.

Table 8.9 - Empanelment Status As on 18-Dec-2013

Hospital Type	Number of Hospitals	Total Number of Beds	Aarogyasri Beds
Corporate	305	43,493	10,873
Government	152	29,778	7,445
Total	457	73,271	18,318

Source: AHCT

Further, the second chart (below) shows that private network hospitals have accounted for 73.3% of all cases of pre-authorisation and 75.9% of the total amount sanctioned for treatment since inception of the scheme on 1st April 2007.

The brief analysis gives rise to two interesting inferences:

a) The average number of patient beds per hospital is higher in government hospitals, as is expected, due to the relatively large scale, public nature of their operations;
b) Private network hospitals have recorded a larger than proportionate number of pre-authorisation cases and have received a larger amount sanctioned to them for treatment of patients, as compared to either their number or the number of Aarogyasri beds they provide.

This could mean that –

i) Patients prefer to approach private network hospitals for treatment, owing to their relatively modern infrastructure, cleanliness and personalised service;
ii) Patients are approaching private network hospitals for treatment of relatively more complex or more expensive medical procedures and surgeries.

Table 8.10 - Vital Statistics as on 18-Dec-2013

Registrations			Health Camps		
Total	In Patients	Out Patients	Conducted	Patients Screened	Patients Referred
77,40,440	24,54,434	47,88,349	36,652	73,00,985	3,13,055

Pre-authorisations		
Total	Government	Private
22,28,092	5,94,707	16,33,385

Pre-authoriaed Amount (in Rs. crore)		
Total	Government	Private
5,971.86	1,437.45	4,534.41

Grievances		
Registered	Resolved	Pending
19,115	18,584	531

Source: AHCT

Key Replication Processes: Indicative Timelines

These timelines are indicative timelines based on the interactions with the stakeholders involved in the initiative and secondary researches; the actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city. The indicative timeline may also vary depending on political and administrative will of policy makers and implementers.

Table 8.11 – Indicative Timelines

S. No.	Key Phase/Implementation Step	Indicative Timeline
1.	**Planning of State Comprehensive Health Insurance Programme:** Formulation of programme scope and coverage (value of insurance per BPL family per annum, number of procedures); Appointment of State Nodal Agency, framing of hospital empanelment guidelines, insurance company role (if required); Development/customisation of central monitoring & evaluation software, establishment of district offices (including ICT infrastructure, PoS handheld devices), appointment of district health insurance programme coordinators, hospital-level coordinators (medical officers), database managers and aarogyamithras; Empanelment of hospitals, training of district health insurance programme coordinators, database managers and aarogyamithras.	6 to 12 months
2.	**Execution, Monitoring & Evaluation of State Comprehensive Health Insurance Programme activities**: Appointment of district- and block-level Field Key Officers (FKOs), enrolment of beneficiaries (BPL families) in every village, issue of state health insurance programme smart cards;	6 to 12 months, thereafter on an ongoing basis

S. No.	Key Phase/Implementation Step	Indicative Timeline
	Set up of Help Desks at network hospitals, facilitation of BPL patients for registration, pre-authorisations, treatment, payment, counselling, discharge and follow-up medication (if any); Daily, weekly, monthly and annual online monitoring of hospital-wise programme performance through programme web portal.	
3.	**IEC Campaigns, Health Camps**: Build awareness about 'State Comprehensive Health Insurance Programme' through hoardings & billboards at hospitals/clinics, bus stands, bus shelters, community halls/panchayat bhawans, collector's offices, public announcements etc.; Conduct Health Camps in each district, once every month with the participation of five network hospitals of the area – two govt. hospitals and three private hospitals.	Ongoing activity

Overview of Proposed Comprehensive Health Insurance Programme

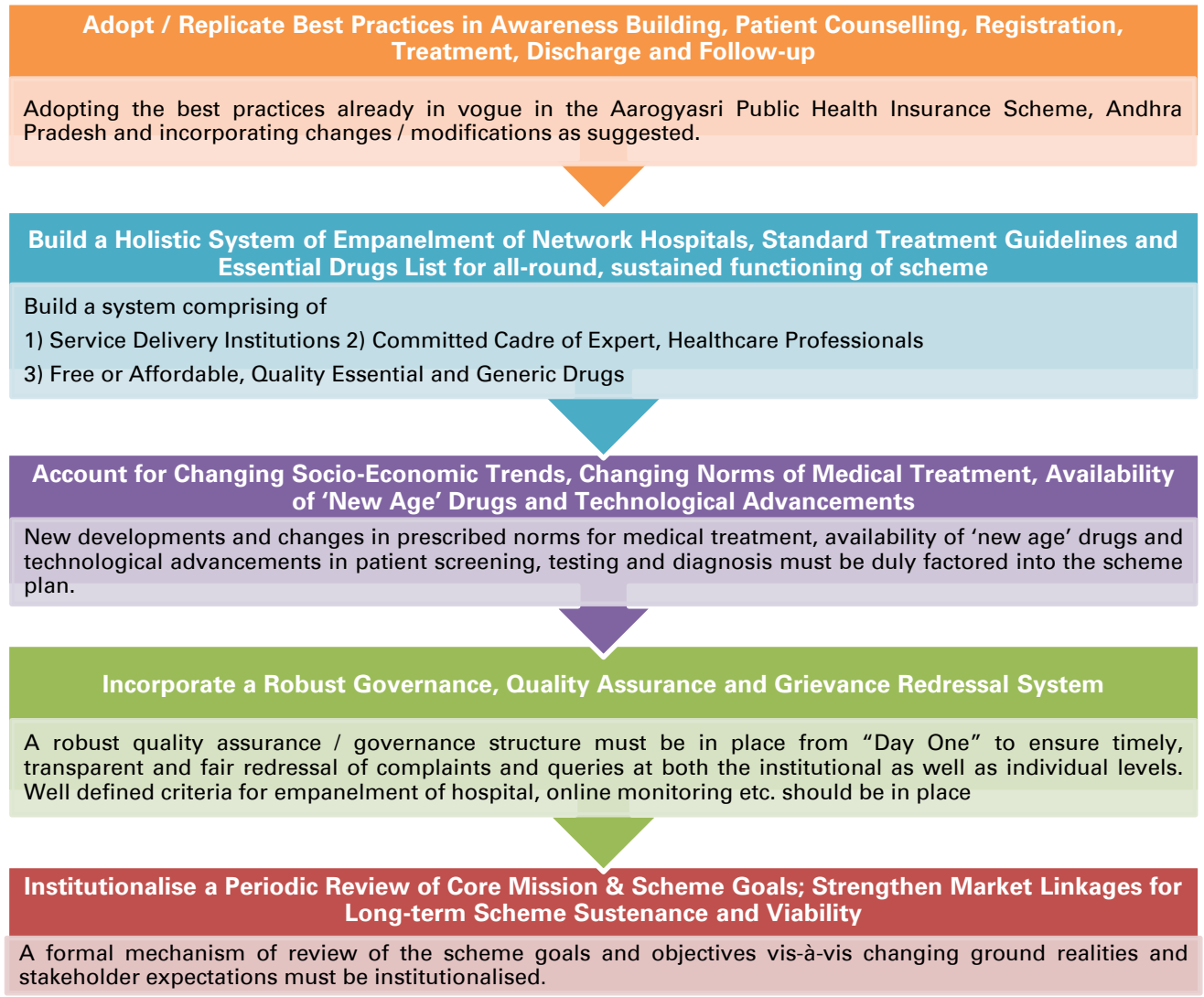


Figure 8.15 - Overview of proposed replication guidelines

9 – Beti Bachao Abhiyan: Save the Girl Child, Gujarat

Practice of sex selective abortion is a key factor responsible for decline in the sex ratio. In India it has been termed illegal. This decline can be attributed primarily to factors like strong socio-cultural and religious biases, preference for sons in some communities and dowry practice which increases financial burden on the bride's family during and after marriage leads to the female feticide activities in the region.

Gujarat has in place a Pre-natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994 since 1994, with well-established network of PC & PNDT Cells at the State and Districts level. These cells are responsible for strict implementation of the PC & PNDT Act across the state, however practice of female foeticide has continued owing to factors like preference for sons in certain communities, prevalence of dowry practice and other socio-cultural biases in some areas of Gujarat. Thus, in order to improve the sex ratio in the state, Department of Health and Family Welfare, Government of Gujarat started "Beti Bachao Abhiyan" in 2005, which was renamed as "Beti Vadhaao Abhiyan" in 2008.

9.1 Initiative Objectives

Some of the main objectives which led to the implementation of the initiative were

- To increase the sex ratio in all parts of Gujarat state, as per Civil Registration System (CRS) data in 2004 and Census 2001, Gujarat was among the worst states in the country in terms of sex ratio.
- To stop female foeticide activities in all regions of Gujarat. The urban centres of Ahmedabad, Vadodara, Surat, Kutch, Rajkot and Jamnagar districts had emerged as centres of female foeticide. The girl child seemed to be disappearing from the progressive and urban areas of Gujarat.
- Reduce female mortality, save girl child and increase the child sex ratio in the state.
- To reduce pre-conception and prenatal mortality of girl child and hence improve sex ratio at birth

9.2 Background: Rationale behind the Initiative

Women with male children are admired in the community and a son is considered as a security for old age and furthering the legacy of parents. It is evident from Child Sex Ratio (CSR) data in 1991, CSR was 928 and in 2001 it had declined to an alarming level of 883. In the year 2004, as per the Civil Registration System (CRS) these data gave Gujarat the dubious rank of third worst state in the country in terms of sex ratio. Mehsana, which is one of the most prosperous districts of the state, had the lowest child sex ratio of 798 as per census 2001 data. The technological assistance Pre-natal Diagnostic – from the mid-1980s onwards created powerful opportunity for people who wanted to somehow not have a baby girl. Due to this negative impact, decline in the child sex ratio has been observed in some parts of Gujarat also.

9.3 Key Factors leading to Initiative

The major factors that led to the initiative have been related to the concerns been created w.r.t. decline in Child Sex Ratio in Gujarat State.

During our survey findings, it had been corroborated with the viewpoints of stakeholders including Govt. officials, Citizens and NGOs that there was a high risk of gender inequality in the region and data which was gathered from various sources depicted the same situation. Therefore, Government of Gujarat launched "Beti Bachao Abhiyan" in 2005. It is well known that socio-cultural factors and practices, such as the status of women, patriarchal structure of the society, preference for a son, fear of dowry, fear of loss of face in local community, desire to keep wealth within the family through sons as progeny, fear of dependence of the girl on the family, for life and the belief that it is the son who can look after the old parents and so on are the main reasons for adverse sex ratio.

9.4 Project Initiation: When and Where?

The Chief Minister of Gujarat Shri Narendra Modi kicked off the "Beti Bachao Abhiyan" in 2005 on the occasion of the International Women's Day. He took the initiative in establishing personal contact with people from all walks of life; particularly the ones belonging to the prosperous class and motivated them to stop the monstrous practice of sex selection and female foeticide.

9.5 Implementation Strategy Adopted

1. **Identifying the problem**
   - The state updated the village wise data on sex ratio in different parts of the state. Based on the Census 2001 data, 43 most adversely affected talukas having a low sex ratio(0-6 year's age group) were identified for focused attention
   - A drive had been undertaken for registration of diagnostic centres and other institutions involved in the pre natal diagnostic activities which resulted in registration of 3,244 institutions which were conducting the pre natal diagnostic and consulting services, including genetic counselling centres, genetic laboratories, genetic clinics, ultrasound clinics/imaging centres and mobile clinics, under the PC & PNDT Act.
   - Collectors, District Magistrates and Chief District Health Officer were appointed as District Appropriate Authorities for monitoring and administration of the activities.

2. **Creating awareness among the people**
   - An intensive awareness campaign was launched in the talukas where CSR was low and they have been identified for the initial rollout of the project. Ministers and MLAs toured these 43 talukas extensively to create mass public awareness regarding declining sex ratio in the region. It was also supported by civil society organisations.
   - Religious leaders also joined hands in these awareness activities for a continual impact.
   - Conference was organised with the judiciary to create greater awareness amongst the judiciary, which was attended by two Honourable Judges of The Supreme Court, Chief Justice and sitting judges of the Gujarat High Court and the senior members of the judicial fraternity in Gujarat.
   - Regular mass rallies from village level to mega cities like Ahmedabad and State Capital Gandhinagar were organised to create awareness among citizens and other stakeholders.
   - Essay competitions and debates were also organised all over the state for the young people to bring their involvement into the initiative.
   - An exercise to monitor all private maternity home births, sex wise for the last 4 years was undertaken. From the received data regarding these maternity homes, district authorities were asked to take appropriate actions under PC and PNDT Act wherever necessary.
   - Several rallies and signature campaigns for 'Beti Bachao Abhiyan' was organised across the state.

- Involvement of community radio, mass media and internet for information distribution was main mediums of the awareness campaign.
- Awareness program in the rural as well as in urban areas of the state with the help of NGOs/ MNGOs were conducted like Public melas, public meetings, Jan Samvads etc.
- Publicity and information material developed in regional and easy language for better understanding and wider reach of the message.
- Public messages/announcements were made at public places like bus stands, railway stations, airports, metro stations etc.
- Involvement of print and electronic media to give wider publicity to the campaign like advertisements on TV relating to PNDT Act and promotion of Girl Child Schemes in the State.
- Youth campaigns at various schools and colleges were organised for encouraging people not to go for pre natal sex determination test and abortion of female foetuses.
- Various local awareness activities were also organised through nukkad nataks, dramas, folk art etc. for creating awareness.
- Mobile vans with information material e.g. brochures and booklets were sent to the remote areas.
- Interactions and dialogues with medical professionals for seeking their support and discouraging the parents for pre natal tests were done.
- Coordination with women and child development department/or social welfare department for the promotion of schemes for the Girl Child ware also made.

3. Targeting the right audience

It is important for any successful campaign that the focus or targeting of the right people should be there for effective and timely implementation of the project. The main focus groups were newly married couples and the pregnant ladies for the initial phase of the initiative.

- Stakeholders were identified for involvement in the activities and a clear allocation of roles and responsibilities was done. Some of the identified stakeholders were Mother, Father, Elders in family, Society, Doctors, Ultra-Sound Technicians, Mid-wives, Government, NGOs and Sarpanch
- Girl's schools and colleges were also identified for the initial activities to start with.

4. Strengthening the implementation of Governance Acts. (PNDT Act)

- Strengthening and implementation of PNDT Act has been taken care off towards making the act effective to prevent the illegal activities.
- Every institution was required to get itself registered. Purchase, installation or use of Ultrasonography machines for antenatal sonography was not allowed, unless both the centre and the machine were registered.
- The system maintained the details about such institutions and ultrasound/sonography machines. Renewal of registrations, the PNDT-certified Clinics was done on the basis of regularity in terms of record keeping and reporting.
- Mapping of Mobile ultrasound machines in the States was done to control and curb illicit diagnostic services.
- Several 'sting' operations were also carried out by govt. officials for identification of the illegal activities at various institutions. The impact of these sting operations was strong. Also an inspection team was put in place to ensure regular survey of USG clinics.
- During raids conducted in the Talukas, many ultra-sonography machines were sealed, and cases were filed in the courts against these centres.

- Government officials have also lodged legal proceedings against institutions and persons involved in illegal activities under the PNDT Act in the district level courts, High Court and Supreme Court. Follow-up of cases in the court was also done by hiring advocates at the district level.

Steps taken for implementation of PC & PNDT Act

A State Supervisory Board under the Chairpersonship of Hon'ble Health Minister Gujarat had been constituted. Various authorities, committees, associations were formed and involved for effective implementation of this Act. Some of the major activities are listed below:

- State Appropriate Authority was constituted
- District Advisory Committees were constituted
- Nodal Officer was appointed at state level
- Participation of IMA, FOGSI, Radiologists' Association
- Important provisions of the PC & PNDT Act to be followed by the ultrasonologists were published in local newspapers
- Ultrasound /genetic centres were registered under this Act.
- All the Appropriate Authorities in the state were repeatedly sensitised to various provisions of the PC & PNDT Act and its enforcement.
- Inter district inspections by the CDHOs were undertaken to nab the violators of the PC-PNDT Act.
- Surprise inspections were initiated by the State Officers so as to cross check the enforcement of the Act in various parts of the State.

5. Monitoring and Evaluation

- For the monitoring the project online system is in place and has helped notably in supervising the implementation and monitoring progress of project. URL for access is http://betivadhaao.gujarat.gov.in/. The online monitoring system is quite robust and it maintains details about the institutions and ultrasound/sonography machines and all the data required for effective monitoring and evaluation.
- At the district level for monitoring and review activities, the administration formed district advisory committees in respective districts. These committees held regular meetings once in two months and reviews the situation regarding child sex ratio, district and block wise then take follow up action accordingly.
- Ensuring Regular meetings of State supervisory board, state appropriate authority, state advisory committee and district advisory committee to review the progress of implementation at different levels.
- Registration of USG machines have been made mandatory for antenatal sonography.
- Feeding of patient data of pregnant women is maintained in various forms for each USG clinic (in Form 'F'). Based on these data, various kinds of reports were also generated.
- Monitoring of PNDT clinics by MNGOs, shared the responsibility of inspection and monitoring.
- Identification of unregistered machines in the district by community workers.
- Monitoring of pregnancies, MTPs, live births and Birth registrations by community workers.
- Appointment of senior officer for medical audit of records of Form F kept by PNDT clinics.
- Regular review and monitoring of meetings at the State level and district level by concerned officer for implementation of Beti Bachao Abhiyan involving strict implementation of PNDT Act.

- In various parts of the districts controlling and monitoring was done by district health department.

9.6 Challenges Faced

Some of the challenges to the initiative:

- To spread awareness among citizens was the biggest challenge for the Scheme; till today some of the stakeholders, especially women from urban areas are unaware of the initiative
- One of the major hurdles was pressure faced by expectant mothers from their in-laws and husband, to have a son. In cases where mothers did not have a preference for son in particular, they were afraid to come forward because of family/societal pressure.
- Initially, the initiative faced little resistance/lack of cooperation from citizens.
- One of the major challenges was spreading of misinformation by doctors regarding sex determination, stating it will requires money to be spent upfront, but would save much more later e.g. dowry, education and wedding arrangements for the girl child.
- Family/social pressure on mothers to undergo sonography and pressure for abortion if a girl foetus was discovered in the sonography report.
- In some of the remote places in the state, the information and awareness about Beti Bachao Abhiyan reached lately.
- Initially husband and mother-in-laws of the family were not very co-operative due to desire of having a son in the family.
- Some of the government officials were threatened by the locals and some political leaders for inspecting their area, also in some cases they tried to influence implementing agencies by offering them money for not to visit in their areas.
- People were not very co-operative initially. they didn't have confidence when sharing info about clinics doing illegal sex determination
- At the time of initial stages, implementation of PNDT act was challenged in the court by different stakeholders. The legal processes enabled to overcome this hindrance.
- Automation of Form F in electronic format was done with multiple meetings with NIC & experts.
- Automation and digitisation of legacy data into the current system and also its collection from various departments was very time taking and tedious work.

9.7 Outcomes Achieved

Outcomes of the initiative were:

- The main measurable outcome which was expected was an increase in the sex ratio of Gujarat
- It is clear from census 2011 data that Gujarat was successful in not only arresting the decline of Child Sex Ratio (CSR) in the previous decade (1991 – 2001) but also was able to improve the CSR by 7 points in the last decade (2001-2011).
- Out of 28 states of India, Gujarat is one of the 10 States which have shown increasing/improving trend of Child Sex Ratio (CSR) as per Census 2011. Gujarat improvement from 883 (2001) to 890 (2011).
- While the Child Sex Ratio in Gujarat showed positive trend in the last decade in several districts, but the CSR at the National level declined by 8 points from 927 to 919 in the last decade.

Table 9.1 - Ranking of Districts by Child Sex-Ratio (0-6 yrs.), Number of Females per 1000 Males

Rank in 2011	Sex Ratio (2011)	District Name	Sex Ratio (2001)	Rank in 2001
	914	**India**	**927**	
	890	**Gujarat**	**883**	
1	964	DANGS	974	1
2	953	TAPI	951	3
3	948	DAHOD	967	2
4	941	NARMADA	945	4
5	925	VALSAD	933	6

Rank in 2011	Sex Ratio (2011)	District Name	Sex Ratio (2001)	Rank in 2001
6	932	PANCHMAHALS	935	5
7	923	NAVSARI	915	9
8	920	BHARUCH	918	8
9	921	KACHCHH	922	7
10	907	JUNAGADH	903	11
11	903	SABARKANTHA	879	18
12	904	JAMNAGAR	898	12
13	903	PORBANDAR	898	13
14	897	VADODARA	886	16
15	898	BANASKANTHA	907	10
16	896	SURENDRANAGAR	886	15
17	896	KHEDA	876	19
18	891	BHAVNAGAR	881	17
19	890	PATAN	865	20
20	886	AMRELI	892	14
21	884	ANAND	849	23
22	857	AHMADABAD	835	24
23	862	RAJKOT	854	22
24	847	GANDHINAGAR	816	25
25	842	MAHESANA	801	26
26	835	SURAT	859	21

Source: http://betivadhaao.gujarat.gov.in/SexRatio_Detail.aspx

There are positive changes in the health Indicators for Gujarat in the period before and after the Beti Bachao Abhiyan some of the indicators are listed below

Table 9.2 – Health Indicators for Gujarat

State	Crude Birth Rate		IMR		Crude Death Rate		MMR		Sex Ratio		Child Sex Ratio	
	2005	2010	2003	2010	2003	2010	2001-03	2007-09	2001	2011	2001	2011
India	23.8	22.1	60	47	8.0	7.2	27.4	16.3	933	940	927	914
Gujarat	23.7	21.8	57	44	7.6	6.7	16.6	12.8	920	918	883	886

Source: https://nrhmis.nic.in/ and Ministry of Health and Family Welfare

- It is pertinent to mention that Sex Ratio at Birth (SRB) in Gujarat State (837) was significantly lower than the National average (894) in 2001 while the current Sex Ratio at Birth (SRB) of Gujarat (909) is higher than the National average (906) in 2011.

9.8 Key Study Findings

Beti Bachao Abhiyan (Now Beti Vadhaao Abhiyan) is a high impact program where government was stringent with PNDT act. The awareness was generated with Intensive focused activities in different parts of the state enhancing the worth of the girl-child, sensitizing people about illegal sex determination and abortion and important provisions of the PNDT Act. Different TV and radio advertisement, hoardings on villages and cities depicting important clauses of the PC & PNDT Act and how girl are future of this country. Different schemes were launched as parallel activities to support the BBA program which helped people come out from the restricted zone of believing girls as a burden to family.

The people of Gujarat have welcomed this initiative and as a part of this around 10 lac people from Patel community gathered in Surat to take an oath to stop the female feticide. In Gujarat during social meetings and in group marriages, people take oath to not indulge in sex selection and stop female foeticide.

Table 9.3 - Sex Ratio at Birth (SRB) ^

	2005-07	2009-11
Gujarat	891	909
India	901	906

Source: http://planningcommission.nic.in/data/datatable/1612/table_193.pdf

During the period from 2005 to 2011 Gujarat has been successful registered the positive change in Child Sex Ratio (CSR) as compared to the overall positive change registered for the country was 5. The conditions of Gujarat is still worrying because while most recent statistics of Census 2011 showed positive change in CSR by 7 points vis-à-vis Census 2001 figures, the overall result was not as good as it could have been.

9.8.1 Impact Assessment

- There has been an evident change in the mind-set and outlook of people, some of whom themselves bring forth cases of malpractice by doctors and subsequently, with support of Asha Workers/Health Officers/Police Officers help in decoy/sting and raid operations.
- Registration under PC&PNDT Act for the institutions like Genetic Counselling Centres/Laboratories, Ultrasound Clinics, Imaging Centres, IVF Centres, etc. was mandatory. These institutions are required to register themselves under PC&PNDT Act to do the diagnostic services.
- The main impact of the PC&PNDT Act was quite well as far as implementation and enforcement of the act is concerned, most of the diagnostic machines are registered. Court cases and Police FIRs have been registered in some Clinics where sonography machines have been found with these illegal activities also these machines have been sealed.
- Several sting operations across the state over the course of last 6-7 years have been done in which doctors were found to be in the involved in the sex determination act. Due to Government actions non-bailable, Non-compoundable warrant have been issued against them and also some practitioners were remanded.
- Sensitisation workshops and awareness campaigns organised by NGOs and Govt. organisation in which all stake holders including pregnant women themselves come forward to convey the message, and they helped in the conducting trap operations.
- Due to significant improvement in citizen participation, information about private clinics doing illegal sex determination of foetus from other doctors, RTI activists, NGOs, and People/informers was available for the action.
- The most critical aspect of Beti Bachao Abhiyan was creating as much awareness about this issue as possible in communities, neighbourhoods and organisations. Also, encouraging public debates and bringing the issues out in open by raising it at every possible forum and encouraging the media to undertake in-depth reporting helps in reaching out to wider audience.
- Initiative has made an impact on the citizens. People of Gujarat are much more socially conscious and aware about the issue of female feticide. They feel that saving the girl child is the need of the present time and it will bring negative impact on gender imbalance in the society. People willingly come forward and support the cause by taking part in rallies/events/forums organised by the NGOs and govt. organisations.
- There is definite improvement in citizen participation, from youth/young people in particular. Workshops have been conducted utilizing the platform of schemes of Ministry of Youth Affairs & Sports viz. National Service Scheme (NSS) to train students in colleges and Nehru Yuva Kendra Sangathan (NYKS) scheme for rural youth. Training records are maintained by the NGO and a detailed report is prepared at the end of the workshop.
- The mindsets of new generation parents are changing with education and awareness. They prefer girls as girls might take care of them in old-age. Boys abandon their old parents in old-age-homes. Some of the Govt

policies also encourage them to prefer girls. Govt is paying Rs 500 per month to Girl child parents under BPL. This amount is given to them only when the Girl attains age of 18 and is not married. If the girl gets married before 18 years, they forfeit the amount. This encourages parents to delay the marriage of girl child till she attains 18 yrs. of age and they encourage her to complete her education also.

- Also the political leaders are very pro-active for this initiative. They discuss at least for few minutes on each meeting explaining the importance of Girl child and decreasing sex ratio to create awareness in public.

9.8.2 Utility Assessment

- As compared to the other states, Gujarat has done quite well but it is a continuous process which takes time and there is no way to gauge the progress and success of the campaign as outcomes cannot be measured in tangible terms because the activity mostly involves training, workshops, campaigns, etc.
- In one of the maternity hospitals, five expectant mothers were admitted for delivery in the last three months; of these, three gave birth to a female child and they accepted this gladly. One of these three mothers had her first female child while the other two already had female children, and this was their second girl child. Due to awareness about the initiative, acceptance of the girl child has increased.

9.8.3 User Satisfaction

- Beti Bachao Abhiyan was supported and appreciated by the people of Gujarat. Initiative's process was well defined and adoption among stakeholders was also very effective.
- Not all the stakeholders were happy the way it has been executed in the state, Participation of religious leaders was the challenge; also awareness campaign was not so effective in the initial phase of the program.
- At one of the places in our conversation the head of the maternity hospital informed that there are some cases where the family wants son or prefers male child over girl child, he also informed that as the law prohibits they do not come out in the open. Such a preference not only happens among poor people but happens in upper class also.

9.8.4 Sustainability Assessment

- The initiative was started with Beti Bachao and when the results were seen, the campaign was transformed to Beti Vadhaao.
- The Department of Health must issue pregnant women a 'Mamta card' (A mother and child care booklet designed for providing information to caregivers about care for pregnant, lactating women and 0-3 years of Children. It provides basic information about Ante-natal check-up, new born care, post natal check-up etc.) without which diagnostic sonography would not be conducted
- Online filling of FORM F by medical practitioners and match it with physical forms sent monthly to district office
- Continuously reminding public while addressing rallies, conferences and social events
- To make it sustainable other Govt. schemes were also designed to support "Beti Bachao Abhiyaan' like Kanya Kedayuni Abhiyan to encourage girls' education, Kishori Yojana a type of food security for adolescent girls, Bal Bhog which is food for children.
- There is a scheme of providing NSC to women who undergoes family planning operation after delivering 2 baby girls, with NSC getting matured when girl becomes 18 years of age.
- The easy/immediate availability of 108-ambulance service has also contributed significantly to encourage women to go to hospitals for delivery at right time and not at home.
- In some cases prior training was not given to the health workers by NGOs for the initiative, however training material and Nutrition

material was already distributed by the District Health office to the NGO.

- To sustain this initiative a regular capacity building program should be there.

9.8.5 Scalability Assessment

- Making initiative scalable was the one of the major key factor at the time of project conceptualisation; they had rolled out this plan in the phases like worst hit areas in the Phase I then Phase II and rest.
- For an initiative which is already in place and has helped significantly in supervising the implementation and monitoring the progress, is online system accessible at http://betivadhaao.gujarat.gov.in/. The system maintains details about the institutions and ultrasound/sonography machines. Every institution has to get itself registered through the system and one cannot buy, install or use USG machine for antenatal sonography unless the centre and machine is registered.
- Complete patient history/record of pregnant woman is maintained in 19-column form to be filled by Genetic Clinic/Ultrasound and Imaging Centre.
- Through sensitisation workshops for doctors and strict enforcement of PC&PNDT Act, 100% reporting is being done in the system. 11 types of reports can be generated of which the most crucial and useful one is "Medical Termination of Pregnancy (MTP) - Not Advised & Conducted" report. This report not only helps in identifying women who went for abortion but also the clinics who conducted the procedure.

9.8.6 Replicability Assessment

- Emphasis should be on spreading awareness through as many avenues as possible like religious leaders, fairs/melas, rallies, workshops, etc. The information should be about saving the girl child, how to tackle social/family pressure, how to reach out to appropriate authorities.
- For the cities like Mehsana current situation is quite well they have come up with increase in the sex ratio and now they are above Surat as per census 2011 data. The participation of anganwadi workers and NGO are remarkable.
- To roll out the initiative they have created a Plan for a Village where the sex ratio has dropped. To start the campaign they first involved the sarpanch and briefed him about the initiative and outcome of the project.
- Identification of the persons, community and groups having unfavourable view were convinced and sensitised. Involvement of these groups was on the regular basis. Analysis of the effort and result where discussed with the locals to get their involvement.
- Appreciation of the sarpanch and citizens with positive and cooperative approach were done by the Govt officials by giving them prizes and certificates in the functions organised.
- Awareness Spread through various media cannels.
- They started 'Beti Bachao Rath' in the remote areas as well as in the urban areas and met people, road shows were also organised and meetings were conducted in the schools and colleges to spread awareness.
- Different festivals like 15th august and 26th January were selected for awareness campaign in different places.
- Various workshops were organised on PNDT with doctors and locals to make them understand the consequences of violating the law. Private organisation were involved, with the objective of Beti Bachao Abhiyan has been shared and discussed in the groups and also Implementation of PNDT act.

Figure 9.1 - 'Beti Vadhaao Posters'; 'Beti Vadhaao Abhiyaan Workshop', 'Beti Vadhaao Abhiyaan Mobile Publicity Van' etc.

- Coordination between Government health facilities and public has been encouraged for achieving this social cause.
- A huge effort was put in for organizing workshops, rallies, forums and preparation of training material and booklets for the same.
- Political leaders and MLAs were sensitised and leaflets containing information about the Abhiyan and bookmarks with oath were given to MLAs for conducting speeches.
- Raised awareness to discourage female foeticide by organizing rallies in slums, encouraging pregnant women to deliver in hospital.
- Identification of pregnant women in slums and other remote areas, registration for the "Mamta Card" to keep track of details related to their pregnancy related health check-ups were done.

9.9 Shortfalls and Suggested Corrective Actions

Table 9.4 – Initiative shortfalls and suggested corrective actions

Weaknesses/Shortfalls	Suggested Action
1. Need for push factor (Census survey dependency) There is lack of self-driven mechanism to find the sex ratio the dependency is also on the census data which comes in 10 years. There is no live data to get the status of sex ratio in the state	I. Independent survey for the finding of sex ratio. II. Various mediums can be used for getting the right and effective data III. To get the status there should be a mechanism at the centre or state level to get the desired data and reports based on the various parameters.
2. Limited Reach of awareness programmes At many places stakeholders acknowledged that awareness among pregnant	A new version with new approach of awareness campaign should be designed and implemented with wider reach and deep penetration among all types of stakeholders.

Weaknesses/Shortfalls	Suggested Action
women, especially in rural areas, is less than the older and college going girls, possibly due to limitation in the reach of the awareness programme. Our survey team encountered that some of the families were not aware of the initiative and its goals.	Showcasing various women achievers form different filed as the role model and small documentary and story should be highlighted. **Suggested Media Plans for the awareness campaign** • **Pre-Launch** Provoke curiosity and get attention for the campaign that follows. Grab interest so that people want more information later. To bring about a "domino" effect by making people talk about the teaser campaign. Introduce the character of "Any Name with Female connect like Ladli, Meri Beti, Bitia etc." and make her the talk of the town - Teaser campaign to generate curiosity - Newspapers(front page) - Hoardings - Local trains & buses - Building Wraps - Television (Local & National) - Radio channels - Social Media • **Launch Period** To shape the lines between 'tradition' and 'modern' such that positive behavioural attributes of empowered modern women do not lead to a fear of greater vulgarity, sexual promiscuity, loss of chastity, loss of tradition and loss of family honour. To take on-board the fears generated in the minds of parents and encourage and affirm the quest for greater gender equality. Airing of TV ads across all major channels and coverage of the campaign via all major medias including Social Media • **Post Launch Period** To create a state-wide movement (as well as, nation-wide) to fight for the cause, to involve as many people as possible to pledge their support towards the cause and Create forum to act as a channel between families/people having girl child to soothe the fear of prospective parents Taking the campaign online (SMS/social media); Create a platform for connecting people to join in for the cause Dedicated "micro-site", page for user generated content, Merchandising of various products related to women, children , Girl **Communication Objectives** • **Attitudinal**: Bring about attitudinal change towards girl child • **Behavioural**: Parents should not attempt to know the sex

Weaknesses/Shortfalls	Suggested Action
	• **Social**: Spread awareness about present reality about female foeticide and infanticide resulting in the skewed sex ratio **Television Chat Show**: Television chat show '*Satyamev Jayate*' which is being hosted by actor Amir Khan has helped in generation of widely increased consciousness about the ill practice of female foeticide and infanticide in Indian society. These shows can be telecast across private and govt. run television channels.
3. Use of IEC To provide additional geographic coverage to the remote areas of the state, new technology based monitoring system should be introduced. Use of 'silent observer' in the Ultrasonography machine was an innovative idea but its expected outcome was not as much as it should be.	More use of Mobile based applications are suggested in addition to the current web best monitoring tools. Improved and well-connected 'Silent Observer' or 'Active Tracker' should be made mandatory for all Ultrasonography machines. The data given by this should be reconciled automatically with the data of 'Form F' filled by sonography centres.
4. Human Resource issue: Delay in the staffing and deployment of the government officials negatively impacted the initial phase of implementation. Proper deployment schedule was also not there at some places.	Proper staffing and on-boarding schedule should be in place and for officials and medical officers who are being deployed for monitoring the Scheme; designated officials should be deployed for a period not less than three years, so that their involvement and experience with the programme can be utilised to achieve greater effectiveness in monitoring and administration activities and IEC campaigns.
5. High new-born child and maternal mortality are still a major challenge in Gujarat and a point of concern for other states also.	Specific focus should be accorded to good nutrition for expectant mothers, vaccinations, at least three pre-natal checks during pregnancy, achieving 100% institutional/monitored deliveries, feeding mother's milk to the new-born child within 24 hours etc. These measures and any other steps being carried out under programmes like the Janani Suraksha Yojana/ICDS etc. should be closely integrated with 'Save the Girl Child' initiatives in all states. Stringent regulation and anticipation of abuse of PNDT Act that bans sex determination should be pushed. All organisations that conduct ultrasound tests should strictly follow the PNDT act.

9.10 Indicative Factors for Identification of Target States

Post-independence the sex ratio (Number of females per 1000 males) in India had recorded a steady decline up to 1991. Sex ratio in India has since shown some improvement. It has gone up from 927 females per 1000 males in 1991 census to 933 females per 1000 males in 2001 census

and to 940 females per 1000 males in 2011 Census of India.

Based on the census data 2011 there is a need of initiatives such as Beti Bachao Abhiyan and Beti Vadhaao Abhiyan in some states where sex ratio is below 900, or if they have already started a similar initiative, some benchmarking and midterm assessment would be required to make the initiative more productive. The sex ratio among children less than 6 years of age was not good in the last decade to 914 per 1000 males. Haryana with 830 girls per 1000 boys, Punjab with 846 girls per 1000 boys and Jammu & Kashmir with 859 girls per 1000 boys are the states with most adverse child sex ratios in the country:

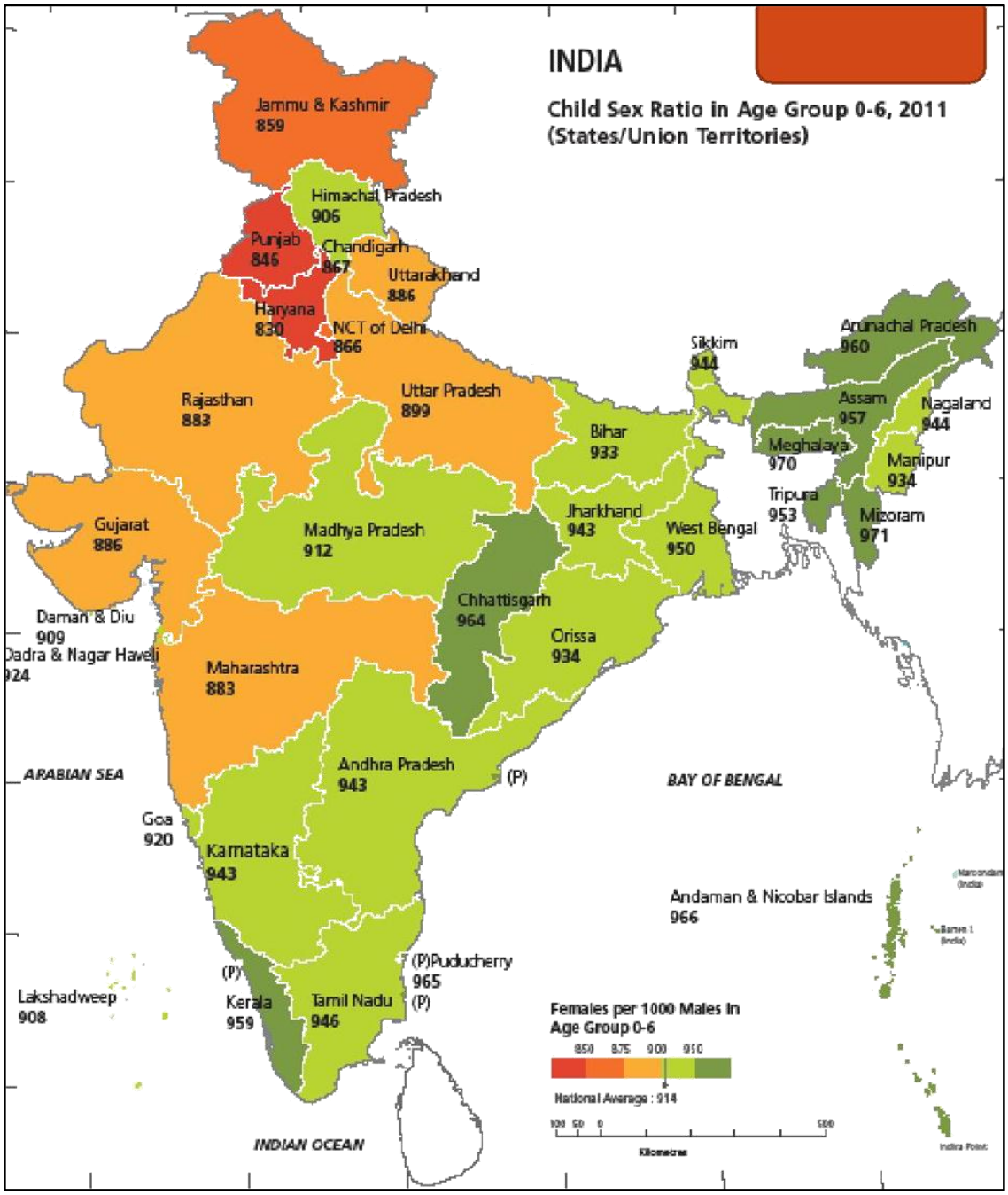


Figure 9.2 - Child Sex Ratio

*Source: Child Sex Ratio presentation (based on *: Provisional Population Totals-Census 2011)*

Negative Trends should also be an area of concern for CSR, as the provisional report generated by the Census of India on 2011 year data, the States and Union Territories showing a negative trend are listed below:

Table 9.5 – Child Sex Ratio

State	Child Sex Ratio (0-6 yrs.) in 2001*	Child Sex Ratio (0-6 yrs.) in 2011*	Change in CSR (0-6 yrs.) 2001 to 2011
India	**927**	**914**	**-13**
J & K	941	859	-82
Rajasthan	909	883	-26
Uttarakhand	908	886	-22
Uttar Pradesh	916	899	-17
Jharkhand	965	943	-22
Madhya Pradesh	932	912	-20
Maharashtra	913	883	-30
Andhra Pradesh	961	943	-18

*Source: *: Provisional Population Total-Census 2011*

These states/UTs with the negative trends should be targeted on priority for the rollout of the initiative to arrest the decline in CSR.

9.11 Implementation Approach

Based on the current evaluation study, a set of guidelines to implement a 'model' practice are presented below. These should necessarily be read along with the 'Implementation Strategy', 'Outcomes' and 'Study Findings' discussed in this chapter. In this manner it is hoped that the reader would be able to gain a comprehensive understanding of the needs, challenges faced and best practices that can be employed for rolling out an efficient, scalable and sustainable Beti Bachao Abhiyan (save the girl child Initiative).

Table 9.6 - Critical Success Factors for Replication of the Initiative

Factors	Strength/Benefit
Scheme Scope & Coverage, Enabling Policy Interventions	**1) Efficient implementation of PNDT Act** Appropriate Authorities have been appointed for the implementation of this Act. Starting from State up to block level. • A State Supervisory Board under the Chairpersonship of Hon'ble Health Minister has been constituted also State Appropriate Authority and District Advisory Committees have been constituted • Nodal Officer has been appointed at state level. • Participation of IMA, FOGSI, Radiologists' Association in the forums and meeting to discuss the issue and PNDT Act. • Registration of ultrasound /genetic centres under this Act. And all the appropriate authorities in the state have been repeatedly sensitised to various provisions of the PC-PNDT Act and its enforcement. • Inter district inspections by the CDHOs are undertaken to nab the violators of the PC-PNDT Act. Also surprise inspections have been initiated by the State Officers so as to cross check the enforcement of the Act in various parts of the State. **2) Effective awareness programs & Selecting the right target group** For the awareness campaign well defined strategy has been chosen, Chief Minister Mr. Narendra Modi himself has launched the program on Women's day. All the MLAs and local leaders have been given clear instructions that they will discuss these issues in their upcoming meetings with citizens and officials.

Factors	Strength/Benefit
	In this initiative segmentation has been done for the campaign initiation like in the start of the project NGOs and Govt. organisations involved in the awareness campaign targeted the Newlywed couples and pregnant women. Also priority was given to the pregnant women who already have one girl child. **3) Realizing the issue at the right time & Willingness of Government** After getting the result in the census 2001, other reports and researches by various organisation Gujarat government acknowledged the issues at the right time and started working towards the conceptualizing the project. In a very short time they have planned and executed the initiative in all the places. Results are also showing their good efforts. All the leaders and MLAs were involved and leaflets containing information about the Abhiyan and bookmarks with oath were given. Instruction was also given to the MLAs by the Ministers for conveying these messages in their speeches. Various other schemes on women were planned and rolled out for the support of the Abhiyan. **4) Programme Management and Monitoring** • Beti Bachao Abhiyan (Now Beti Vadhaao Abhiyan) has online monitoring system in place for supervision, implementation and monitoring the progress of project (http://betivadhaao.gujarat.gov.in/). It captures all the data desired for the reports. It has data of Institutions, ultrasound/sonography machines and pregnant women for effective monitoring and evaluation. • Registration is mandatory for every institution for installation of ultra sound machines for antenatal sonography. • Also, complete patient history/record of pregnant woman is maintained in 19-column form to be filled by Genetic Clinic/Ultrasound and Imaging Centre. • Through sensitisation workshops for doctors and strict enforcement of PC&PNDT Act, 100% reporting is being done in the system. • Around 11 types of reports can be generated of which the most crucial and useful one is "Medical Termination of Pregnancy (MTP) - Not Advised & Conducted" report. These reports help in identifying women who went for abortion but also the clinics who conducted the procedure. **5) Stakeholders involvement** The involvement of all types of stake holders was the one of the main reason for its success, Chief Minister, Ministers, Govt officials, religious leaders, NGOs and citizen all are actively involved in the Abhiyan. Everyone has its role in the initiative.
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	**1) Monitoring and Evaluation** • Monitoring of the birth registration and Sex Ratio at birth through various forms was done initially; later online MIS has taken place. • Monitoring of clinics by MNGOs they share the reports to the govt. authorities, identification of unregistered machines in the district by community workers.

Factors	Strength/Benefit
	• Monitoring of pregnancies, births and birth registrations was done by community workers. • Audit department was responsible for medical audit of records basically of Form F kept by PNDT clinics. • Regular review of the data and monitoring meetings at the various levels and involvement of state health departments for the implementation of PNDT Act.
Capacity Building and ICE Campaigns	**1) Capacity Building** • Training of state level officers for the administration of the project was given also they have conducted trainings for the NGOs to educate them on the issues and how to capture the sensitive activities running at various maternity centres and hospitals. • Training was also given to the IT people for the data collection and reporting • Training of community workers were also conducted with the effective training modules **2) Effective use of communication media:** • Media workshops were conducted • An intensive media campaign was launched at the time of its initiation. • They have used various mediums for the effectiveness of the campaign like TV, Print, Websites, brochures etc. • Now they are using Beti Vadhaao Rath (Yatra) for the rural as well as for urban areas to connect and share the information about the Abhiyan.
Organisational Structure and Stakeholder Participation	**1) Strong leadership for coordinating and carrying out the initiative:** Beti Bachao Abhiyan was introduced by Chief Minister of Gujarat; his involvement in the project was from "day one". This has done remarkable motivational factor for the other officials and organisations involved.
Technology Interventions	• Use of online media for complaint registration • Important provisions of the PC-PNDT Act to be followed by ultrasonologists were published in popular newspapers. • "Betivadhaao.com" and "Betivadhaao.org", a website is launched for PC & PNDT Act and for online submission of form "F" • Use of 'silent observer' in the Ultrasonography machine is also an innovative idea.

Salient Features of Beti Bachao Abhiyan: Replication Guidelines

The following step-wise approach may be followed for replication of the programme by any state/city, along with the recommendations made in the earlier sections:

Step 1: Analysis of Gender Gap and Trends in Target States/Districts

- Recognition of problem and its level at the state and district levels
- Assessment of the external and internal influencing factors
- Demographic assessment of the state and selection of the areas for pilot phase
- Analysis of current projects features (if already has this initiative) and scope it with the current need.
- Identification of potential stakeholders

Step 2: Stakeholder's identification & Setting up Roles and Responsibilities

- Stakeholder's identification and setting up the roles & responsibilities for each of those tasks. Additionally, these responsibilities should be clearly outlined so that the project's

participants understand which person is responsible for which task. The suggestive list of the stakeholder and their roles and responsibilities are given below

Table 9.7 – Stakeholders and their roles

Sr. No	Who? (Group/People/ Stake Holders)	What? (Desired Action)	Why? (Motivation)
1	Mother (Guilty)	To value the birth of a girl child and thus no bias against girl child	Realise the severity of the act and feel regret, guilt
2	Mother (Not Guilty but doesn't have a say)	To refuse to go for Female foeticide	Motivated to stand for the and infanticide safety of her child
3	Father	Not force for female foeticide and infanticide, Fight against any opposition to the birth of a girl child	Repentant, Feel like a culprit
4	Elders in family	No discrimination against girl child And thus not force for female infanticide	Regretful, Sense of aiding
5	Society	Change in mindset the that having a girl is not a liability	Understand value of a girl child; realise the harshness of the issue
6	Doctors	To not do "sex-selective abortion" even for any favour in return	Fear of prosecution, motivation to uphold Hippocratic Oath
7	Ultra-Sound Technicians	Not reveal the gender of the child to the doctors or the family members	Fear of prosecution, strict orders from the doctor
8	Mid-wives	To not do "sex-selective abortion" even for any favour in return	Fear of prosecution
9	Government	Ground-level implementation of laws and incentive schemes	Willingness
10	NGOs	Support the Cause and get support	Societal awakening will boost morale, Opportunity to be seen as Hero, gain goodwill and recognition
11	Sarpanch	Enforce rules and disparage any sex- based discrimination	

- **Social 'Counter-Pressure Groups' and IEC Activities to Build Stakeholder Involvement, Change Attitudes - Yatras, Rallies and Workshops**

  Ministers, elected representatives and spiritual leaders form all communities should organise and participate in yatras, rallies etc. in the all the priority districts and blocks in order to sensitise citizens about the negative impacts of declining child sex ratio and the necessity to improve the sex ratio for social peace and harmony, and for the overall progress of the country. Stress could be laid on the importance of demonstrating each block/district /state as a 'model community'.

  Seminars and workshops can also be organised by the different organisations and citizens in schools, colleges and universities to promote the initiative.

  In Gujarat during social meetings and in group marriages, people take oath to not indulge in sex selection and stop female feticide. Even in school and colleges the teachers used to

sensitise the youths about the sex ratio and female feticide as these youths are future parents.

A word of caution here to planners – changing habits and behaviours may be achieved in 4-5 years, but change in societal attitudes towards girls and women, in general is for the long haul and likely to require a dedicated effort over 25-30 years or more.

Step 3: Effective Implementation of PNDT Act

- Uniformity of the PC & PNDT Act throughout India
- Common Format of Form 'F' for all states
- An online grievance registration system
- District Collectors & CDHOs as a District Appropriate Authority under PC & PNDT Act
- Constitution of a State Supervisory Board (under the Chairpersonship of Hon'ble Health Minister of State/UT)
- Constitution of a State Appropriate Authority

Constitution of District Advisory Committees

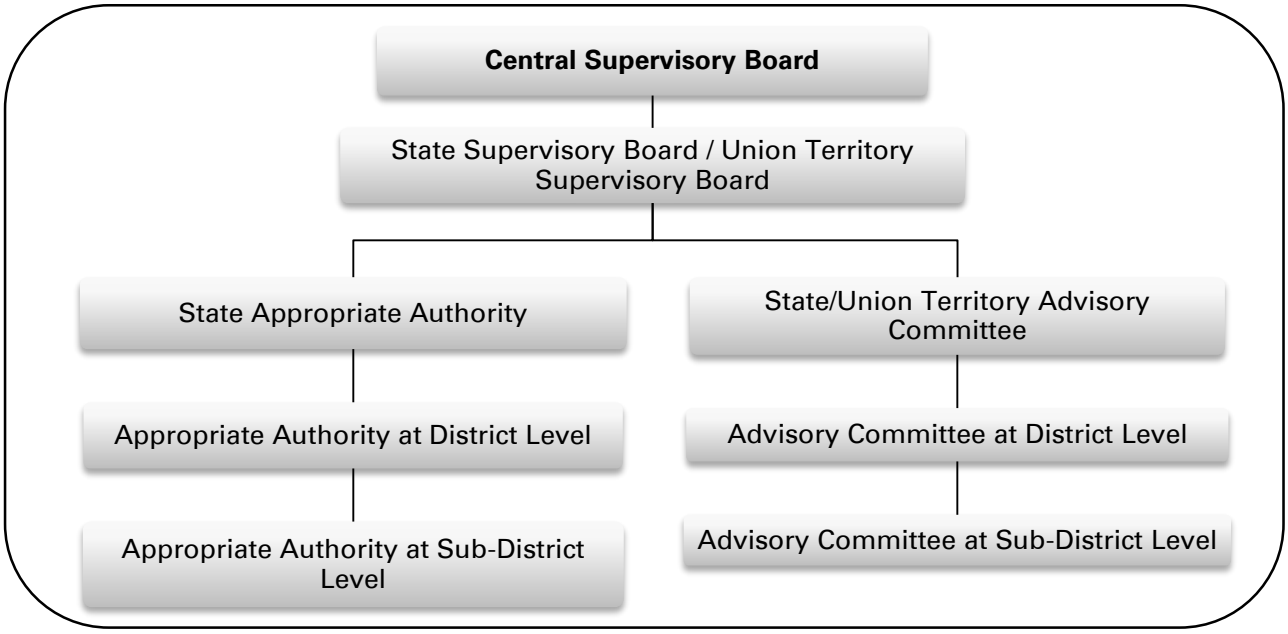


Figure 9.3 - Structure of the Implementing Machinery [4]

- Appointment of Nodal Officer at state level
- Appointment of Appropriate Authorities (from State level to Block level for implementation of the PC & PNDT Act)
- Advisory Committees at block level
- Association with IMA, FOGSI, Radiologists' Association for strengthening of PC & PNDT Cell at State & District levels

Step 4: Preparing Model Initiative & establishing the desired outcome

- Based on the analysis of gender gap at state and district levels, the programme may require several amendments and innovations to address gaps and change attitudes towards the girl child.

- Gaurav Nari Niti - Women's Pride, Gender Equality
- Balika Samruddhi Yojna – Girl Child Development
- Swayamsidh Yojna – Self Reliance and empowerment
- Vidhva Sahay & Talim Yojna – To help the widow and education
- Saraswati Sadhna Yojna – to provide bicycles to Scheduled Castes students
- Kunverbai nu Mameru scheme - help to SC / ST for their daughter's marriage
- Saat Phera Samuh Vivah Yojna
- Mahila Vrudh Ashram- special arrangements for uncared women
- Chiranjeevi Yojna - encourage the BPL families to improve access to Institutional delivery
- Nari Adalat - Set up for women empowerment and gender justice
- Sakhi Mandal Yojna- Women self help groups
- Gaurav Nari Niti - Women's Pride, Gender Equality
- Kishori Shakti Yojna – Adolscents, Strenth and Awareness
- Swayamsidh Yojna – Self Reliance and empowerment of women
- Mahila Vrudh Ashram - Old age Home
- Janani Suraksha Yojana (JSY) - To reduce maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women

Figure 9.4 - Other Initiatives and Schemes for Women and Child Welfare in Gujarat
Source: http.www.gujhealth.gov.in/beti-bachavo-1.htm

Step 5: Phased Roll-out of Scheme

- Phasing of the programme and expected outcomes of the particular phase.
- Establish a timeline: The project's major components can be broken into stages, and each stage might have its own time frame with clearly defined expected outcomes. For example, bringing about an improvement in child sex ratio (0-6 years) by 5 points within the first 5 years, increasing percentage of institutional deliveries in district/state by 5 points with the first three years etc.
- Detailed Media Plan/Awareness campaign with objectives
  - ✓ **Attitudinal**: Bring about attitudinal change towards girl child
  - ✓ **Behavioural**: Parents should not go for sex determination test
  - ✓ **Social**: Spread awareness about present reality about female foeticide and infanticide resulting into skewed sex ratio

Step 6: Capacity Building

- A state-wide capacity building programme for training of District-level authorities, junior officials and health workers.
- Training of NGOs or MNGOs etc. with the latest training manuals
- Training of community workers ANMs etc.
- Media Workshops for all stakeholders
- Coordination with women and child development department/or social welfare departments for publicising government promotional schemes for the girl child in nursing homes and clinics etc.

Step 7: Monitoring of Activities & Surveillance

- Target population inputs on 'last mile' service delivery infrastructure must be sought and implemented in a transparent and fair manner, e.g., "dos and don'ts" for undergoing USG must be clearly spelt out (3 tests per pregnancy), unnecessary tests and medications must be avoided, obstetricians/gynaecologists must be discouraged from prescribing expensive procedures such as Caesarean section for delivery, unless absolutely necessary.
- Monitoring and evaluation of implementation of PNDT Act through community participation.
- Monthly/weekly reviews of initiative based on predefined milestones by district/block level

'Silent Observer' and Active Tracker in Ultrasonography Machines

The 'silent observer' device embedded in an ultrasound machine generates a log of all pregnancy tests done over a year. It feeds the personal data of patients and radio images to the main server installed at the district collector's office. The district administration uses this data to verify whether the women who underwent ultrasound tests continued with their pregnancies or opted for an abortion. Such a surveillance mechanism is important in the case of women who have a history of delivering girl babies. [8]

Government can also consider reimbursing the device cost to private clinics and hospitals, because it is additionally embedded into the Ultrasound machine.

Active tracker enables online monitoring of sonography and if it is detached, based on the GPS and mobile technology, SMS system is there for defined alerts to the main centres. Some devices had already been installed in Kolhapur for the monitoring purpose. Health officials believe that the new device will be less controversial and can't be tampered with as all the data can be tracked through GPS/GPRS.

- Scheme Assessment based on monthly, half-yearly and annual reviews and revise scheme scope, plan and resource allocation based on review findings.
- Dynamic Web based application with central server and fast and real time data for state administration to monitor.
- Local level administration meetings should be conducted to assess the resources required at the ground level.

Replication Guidelines: Indicative timelines

These timelines are indicative timelines based on the interactions with the stakeholders involved in the initiative and secondary researches; the actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city. The indicative timeline may also vary depending on political and administrative will of policy makers and implementers.

Table 9.8 – Indicative Timelines

#	Activity	Time frame	Remarks
1	Analysis of Gender Gap and Trends in Target States/Districts	1-3 Months	Data from Census of India, Ministry of Health and Family welfare and other organisations can also be used for assessment of the gender gap and trends other than same states/ district specific data
2	Stakeholder's identification & Setting up Roles and Responsibilities	1-2 Months	Stakeholder's identification and setting up the roles & responsibilities for each of those tasks.
3	Effective Implementation of PNDT Act	On going	Depending on the status of the PC & PNDT act in the state, State Appropriate Authority, District Advisory Committees, Nodal Officer at state level and appropriate Authorities can be placed in first 1-3 Months
4	Preparing Model Initiative & establishing the desired outcome and Roll-out of Scheme in phases	2-3 Months	Establish a timeline, Detailed Media Plan/Awareness campaign with objectives

#	Activity	Time frame	Remarks
5	Capacity Building	On going	A state-wide capacity building programme, Trainings, Media Workshops and other activities will require different time frame based on the current situation of the state.
6	Monitoring of Activities & Surveillance	On going	Weekly and Monthly status meetings at the district and block level and annual and half yearly review meeting with state heads. Continuous monitoring through web & mobile based application

Other Initiatives/Activities to Support the case for the girl child in society

Long term policy measures must be initiated to improve the overall socio–economic conditions of women in society. For example, girls'/women's education, health and status as professionals in private and public sector organisations must be encouraged through appropriate interventions. Some suggested measures are illustrated in the diagram below:

Figure 9.5 – Other initiatives

Villages with maximum no of girls should be awarded and also may be named 'Unnat *Balika Gram*'. Their recognition should be recognised in the national/state-level conferences, meetings and seminars.

More awareness activities with new ideas should be implemented for the involvement of key stakeholders – husbands, in-laws, doctors and ultrasonologists. SMS, social media and use of mobile applications can play an important role in spreading awareness about the importance and

necessity to encourage couples to have girl babies. Additionally, participation of influential members of society/women in high positions must be sought to encourage the overall betterment of the socio-economic condition of girls in particular, and women in general. Govt. of Gujarat has done some remarkable planning in this sphere, with several programmes aimed at improving the condition of the girl child and betterment of women. These programmes have supported and supplemented the efforts of the Beti Bachao Abhiyan by acting on a wide range of women's issues. Some of the major activities of the initiative are listed below.

Overview of Proposed Beti Bachao Abhiyan (Save the Girl Child) Programme

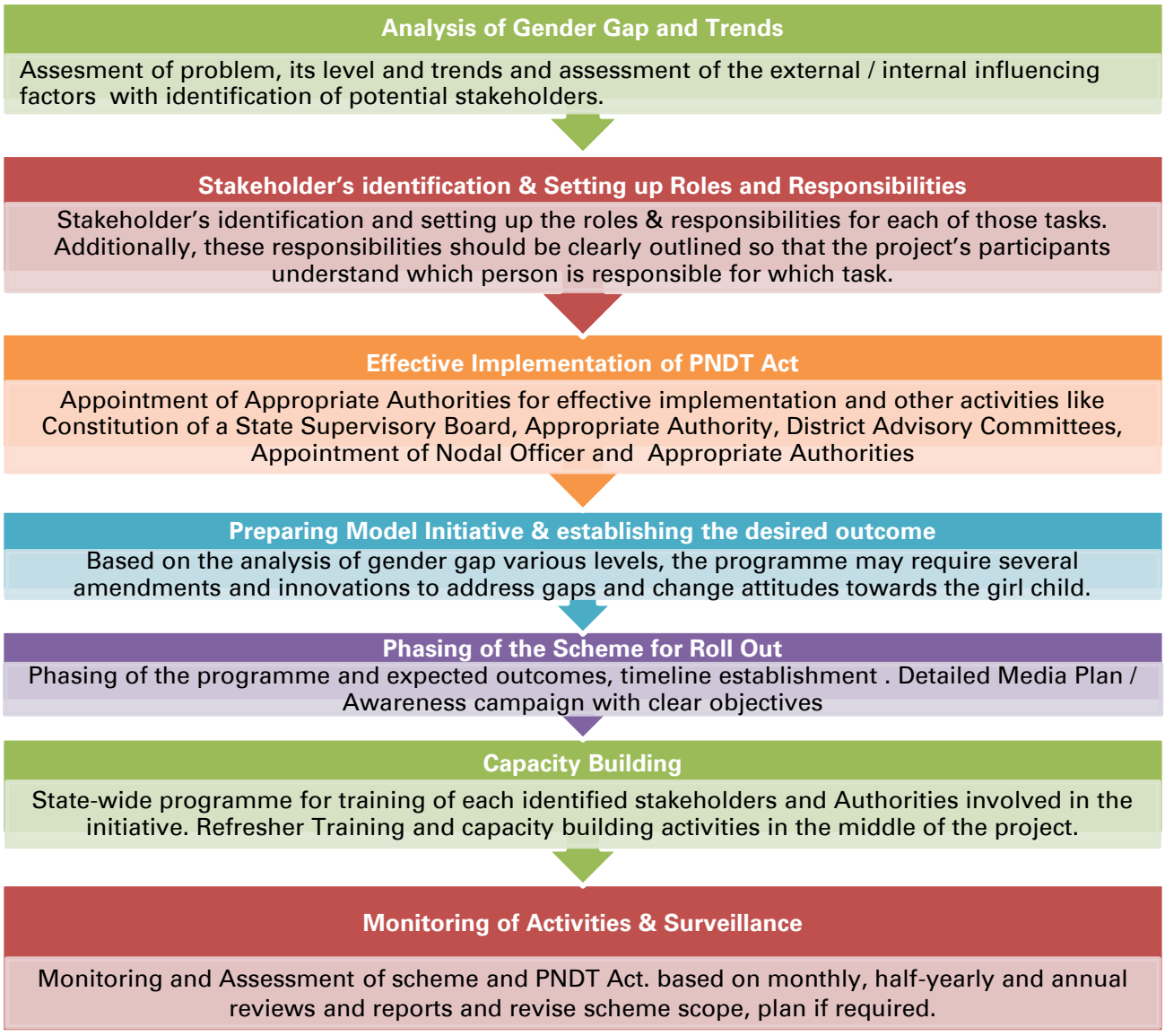


Figure 9.6 - Overview of proposed replication guidelines

10 – Cervical Cancer Screening: Evolving a New Methodology – A Life Saving Initiative of Chennai Corporation, Tamil Nadu

The project was introduced to promote Preventive Healthcare in women, and to detect precancerous lesions in the cervix of women between 18 to 60 years of age.

10.1 Initiative Objectives

The project aims to:

- Identify and treat cervical cancer at the pre-cancerous stage among women in the slums of Chennai.
- Use less expensive and less time-consuming screening methods for accurate diagnosis.

10.2 Background: Rationale behind the Initiative

Cancer of the cervix uteri is the second most common cancer among women worldwide, with an estimated 529,409 new cases and 274,883 deaths globally in 2008. About 86% of the cases occur in developing countries, representing 13% of female cancers. Worldwide, mortality rates of cervical cancer are substantially lower than incidence with a ratio of mortality to incidence to 52% (IARC, GLOBOCAN 2008).

India has a population of 366.58 million women aged 15 years and older who are at risk of developing cervical cancer. Cervical cancer ranks as the 1st most frequent cancer among women in India, and the first most frequent cancer among women between 15 and 44 years of age. About 7.9% of women in the general population are estimated to harbour cervical Human Papilloma Virus (HPV) infection at a given time, and 82.5% of invasive cervical cancers are attributed to HPVs 16 or 18. With a Crude Incidence Rate of 23.5, current estimates indicate that every year 134,420 Indian women are diagnosed with cervical cancer with the figure for new cervical cases projected to reach 203,757 by 2025. It is estimated that at present approximately 72,825 Indian women die due to cancer of the cervix. By 2025, this number is projected to rise to 115,171.

While HPV is a necessary cause of cervical cancer, it is not a sufficient cause. Other cofactors which have been established as necessary for progression from cervical HPV infection to cancer are tobacco smoking, high parity, long-term hormonal contraceptive use, and co-infection with HIV. It is also established that well-organised cervical screening programs or widespread good quality cytology can reduce cervical cancer incidence and mortality. It is increasingly evident that information about sexual and reproductive health behaviours is essential to the design of effective preventive strategies against cancer cervix.

10.3 Key Factors leading to Initiative

In Tamil Nadu, Cervical Cancer is the second most common cancer to affect women, especially those in rural areas. Eighty per cent of women in the low socio-economic strata are at risk owing to the lack of awareness regarding the disease and the services available to combat the disease. As Cervical Cancer has a very long precancerous period, generally 10 to 15 years, it provides a considerable window of opportunity to detect it and treat it completely. Thus, early detection of the pre-malignant conditions allows the disease to be cured completely. If regular screening is made part of the routine check-up of all women who are susceptible, the onset of

cancer can be detected and combated effectively. As Cervical Cancer is the second most common cancer to affect women in Tamil Nadu, a project to combat the disease was conceptualised. As per Govt. of Tamil Nadu estimates, the state has brought about a 50% reduction in reported cervical cancer cases. However the incidence of the disease remains high amongst rural women.

10.4 Project Initiation: When and Where?

The project was launched in April 2008, and covered all 93 posts of Chennai Corporation.

The project implementers include Corporation of Chennai Health Department, Healthcare Providers (Hospitals), Primary Health Workers (at Health Posts) and NGOs (active in the slums).

The State Government has been looking to scale up the project at State Level and doing an effective roll-out of health check-ups targeted at cervical cancer and breast cancer amongst rural women.

10.5 Implementation Strategy Adopted

Screening with the conventional 'pap' smear is often uncomfortable, time-consuming and calls for a lot of expertise. That's why an inexpensive alternative VIA/VILI (Visual Inspection with Acetic Acid/Visual Inspection with Lugol's Iodine) is being rolled out in the first ever large-scale programme, in Tamil Nadu.

The VIA/VILI technique can be performed by any trained healthcare-provider. In VIA, acetic acid is splashed or dabbed onto the area after a vaginal examination; pearl-white uniform coloration indicates cancer. In VILI, a similar technique is adopted using Lugol's iodine. Here, a mustard colour indicates the presence of cancerous cells. This method can detect both pre-cancerous as well as cancerous cells. In advanced stages of cancer, bleeding is likely to occur during the procedure.

It is evident on the table whether the patient has a cancer risk, therefore she can be advised further investigations right away. A colposcopy and biopsy are done to confirm cancer, leading to appropriate treatment. Early detection goes a long way in helping save the patient.

State-wide VIA/VILI screening in Tamil Nadu would be rolled out after a three-year pilot in the districts of Theni and Thanjavur (started December 2012). During the pilot, intensive efforts are to be made to make women aware, understand and come forward for screenings. Counsellors and village-link volunteers were contracted for this purpose. Persistent outreach has led to nearly 5 lac women being screened and over 2,500 being diagnosed and treated for cervical cancer as per latest available information.

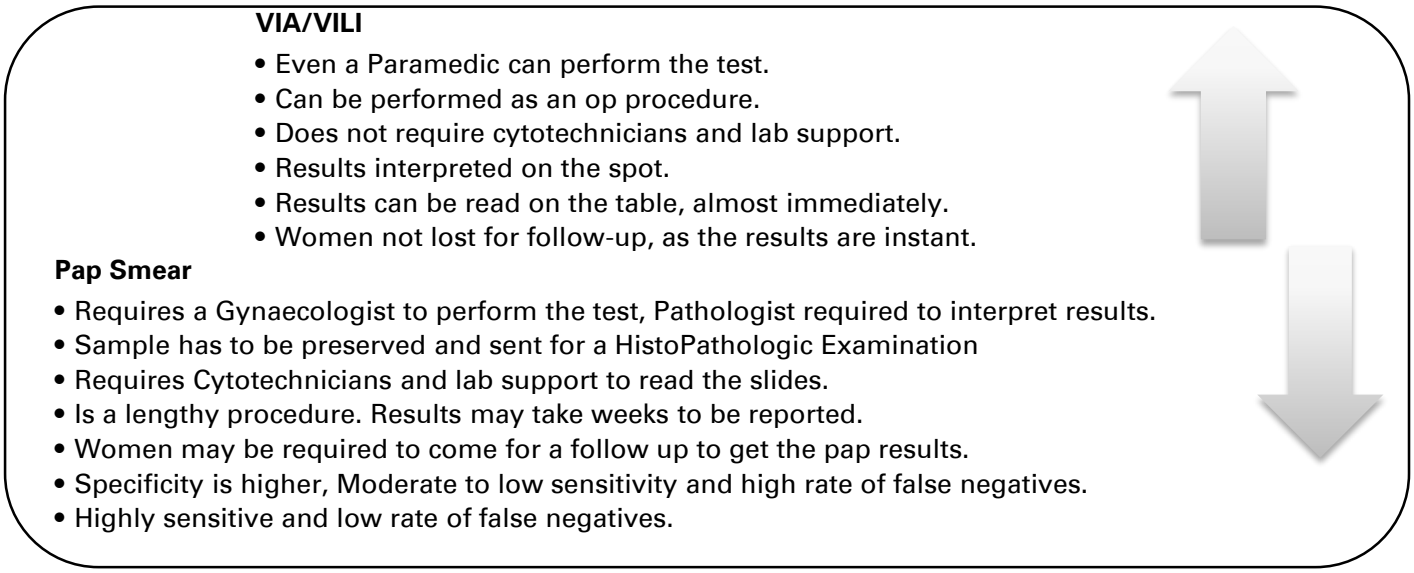


Figure 10.1 - Why VIA VILI works as a better screening procedure than Pap smear?

10.6 Challenges Faced

The challenges faced included setting up and equipping adequate number of health posts/clinics across the 11 (now 15) wards of Chennai city. This was met out of Govt. of Tamil Nadu funds and currently NUHM funds are planned to be utilised for the purpose. It also included educating and skilling medical officers (doctors), nurses and health post workers to implement the project. The critical 'last mile' of the project involved educating slum women to inculcate health best practices and educating them about personal hygiene. One of the key obstacles that needed a concerted IEC campaign to address was fear of health tests and the social stigma associated with undergoing check-ups or treatment for cervical cancer and breast cancer. Some of the other challenges were lack of awareness about cervical cancer among the slum/poor population; the limited role of NGOs in the area.

10.7 Outcomes Achieved

Through the project, Tamil Nadu has brought about a significant reduction in reported cervical cancer cases. However, the incidence of the disease remains high amongst rural women.

Future plan of Implementers: To roll-out state-wide project on cervical cancer early detection amongst women from poor/BPL background (pilot rolled out starting December 2012). Current Scheme Coverage: All 15 Blocks under Corporation of Chennai

10.8 Key Study Findings

10.8.1 Scheme Scope & Coverage, Enabling Policy Interventions (Impact and Utility)

Cancer is seen as a frightening, incurable disease and often becomes reason for stigmatising the affected person. Usually, they are reluctant for screening, because of the fear of society and family. More importantly neglecting institution expertise and taking immature and dangerous measures towards their illness.

Chennai Corporation, as the primary municipal institution of Chennai, runs and operates the cervical cancer early detection project through its Department of Maternal and Child Welfare. Urban Health Nurses (UHNs) are responsible for identifying the target group of women and guiding them to the 150 health posts across the 15 blocks of Chennai city. Doctors at the health posts carry out inspection using the simple VIA/VILI technique. Women who are detected with pre-cancerous cells are recommended for further diagnosis and treatment at Chennai Corporation/Govt. of Tamil Nadu advanced clinics and hospitals, as necessary.

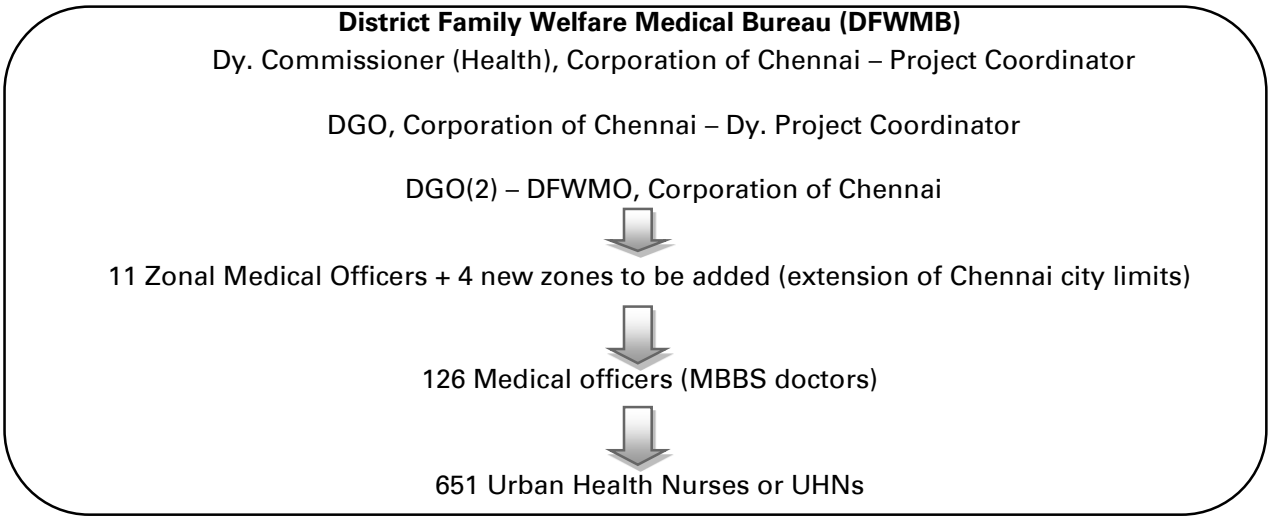


Figure 10.2 - Cervical Cancer Screening in Chennai: City-wide Organisational Structure

The initiative particularly aims to target poor women residing in Chennai slums, those with little formal education and very few means to undergo expensive PAP smear tests at private clinics and hospitals.

According to Dy. Commissioner (Health), Corporation of Chennai, the initiative has been able to adopt innovative techniques to cover a large target audience of women in the age group 18 to 60 years. The misconceptions associated with cervical cancer are being addressed, and poor women are being educated about what the disease actually entails and the fact that it is curable. By addressing their fears, the programme helps women to open up to the idea of regular check-ups and improving their lifestyles and practicing good personal hygiene.

While initially there was a challenge in communicating with beneficiaries, the initiative has been successful in spreading awareness on cervical cancer, and compliance has also gone up. For a wider impact, it is necessary to have dedicated team of doctors for this initiative.

10.8.2 Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure (User Satisfaction)

The Corporation of Chennai has rolled-out the Cervical Cancer Initiative across Chennai, and has been able to cover the slum population adequately. There are challenges posed by urban slums on the city outskirts, and resources are now being enhanced to cover them. Organisations such as the Tamil Nadu Health Systems Project (TNHSP) and the Non-Communicable Diseases (NCD) screening programme have helped the Corporation of Chennai with the initiative roll-out.

Each health post/clinic maintains a register of the number of tests conducted and the patients provided cancer treatment/medication and counselling. These numbers are consolidated on a monthly and annual basis at the ward level and the city level. Overall the Corporation of Chennai Health Department team expressed satisfaction with the positive outcomes achieved through the Cervical Cancer Early Detection Initiative. From 19.3 lac cases of Cervical Cancer in 2008, there has been a gradual decline in the number of cervical cancer cases being reported every year.

While there has been a decline in cases of cervical cancer, there has been a rise in breast cancer cases due to late pregnancies and decline in breast feeding. Efforts are on to address this issue through adequate medical intervention and IEC programmes.

10.8.3 Capacity Building and IEC Campaigns (Utility and Sustainability)

General Practitioners were hired through a third-party agency by Corporation of Chennai Health Dept. More than 100 doctors from District Family Welfare Bureau, Corporation of Chennai were trained in the VIA (Visual Inspection Using Acetic Acid), VILI (Visual Inspection with Lugol's Iodine) technique at the Kasturba Gandhi Government Hospital, Chennai.

On average it is estimated that each UHN caters to a target population of 10,000 women, while the ratio for doctors is 2 doctors to every 50,000 patients.

Urban Health Nurses (UHNs) are sent for home visits to educate, train, and convince women for the screen. Each Urban health nurse is allocated a population of 10,000 people in their area. Although there was a wide campaign conducted across the city. UHN were trained to have 1-on-1 interactions and educate women about importance of institutional discipline for pregnancy and other tests. In a way, UHNs are the primary communicators for this project.

Since cervical cancer is a sensitive subject and women are stigmatised and apprehensive about undergoing check-ups, one-to-one interactions, professional consultancy and effective, quick methods of detecting were very necessary for success of this project. The target population was narrowed down to women age group of 30-45.

UHNs were sent to reach every woman possible in the catchment areas of all health posts.

Doctor and Paramedical Staff Training

To enhance programme implementation effectiveness, Medical Officers (doctors) are put through 15 days of intense hands-on training and access to reference materials. Staff nurses and sector nurses undergo a one week training stint. Urban Health Nurses undergo training for a day.

In addition to the initial training, medical officers and paramedical staff are kept up-to-date on latest developments partly through regular 'Continued Medical Education' (CME) classes, which are primarily conducted to impart training in new diagnostic and treatment techniques.

Chennai Corporation also trained two master trainers at the Chittaranjan Cancer Institute, Kolkata. Five hundred paramedical staff were then trained to go out into the field and conduct cancer screening camps.

IEC Campaigns

Through FM Radio Channels, and Cable TV, an interactive campaign was launched to educate women about the importance of personal health and hygiene. Campaigns focused on specific messaging themes such as "Mouth of the Uterus" (rough translation from the Tamil campaign phrase).

Although the traditional publicity and media campaigns played their part, UHNs are assigned direct responsibility for sustainability of the cancer early detection project in their respective catchment areas. Since, they usually develop personal contacts with their patients, follow-up and education of target women becomes easy and sustainable.

Figure 10.3 - Door-to-Door Counselling by UHNs

Figure 10.4 - Cultural Performance to Promote Awareness of Women's Health Issues

Source: TNHSP

Key messages of the awareness campaign

- Burden of Cervical Cancer
- Risk factors for Cervical Cancer
- Early detection and screening
- Creating awareness on difference between pre-malignant and malignant conditions and emphasis on complete cure, if detected at an early stage
- Free screening centres and services provided by Government with regards to the Cervical Cancer
- Only female doctors and Staff are involved in screening

10.8.4 Financial Viability (Sustainability)

Corporation of Chennai Health Dept. receives its funds from the state for implementing the various schemes and projects of the city's residents. Of the Rs. 220 crore expected from National Urban Health Mission (NUHM), Chennai Corporation hopes to be able to invest Rs. 70 crore in creating new health installations/health posts by mid-2014, especially in the four new blocks recently added to city limits.

10.8.5 Organisational Structure and Stakeholder Participation (Scalability and Sustainability)

The Chennai Cervical Cancer Screening Initiative has demonstrated that by deploying simple, appropriate technologies, an initiative can cover a large population and overcome the challenge posed by a dreaded disease like cervical cancer. In 2012, Corporation of Chennai was able to enhance their coverage from 93 to 109 Health Posts, and another 40 new Health Posts are being added. This would take the total number of Health Posts across Chennai to nearly 150.

There are challenges associated with providing coverage to mobile migrant populations. Once covered by the screening, beneficiaries tend to move or are simply untraceable. Efforts need to be taken to ensure that such beneficiaries continue to avail the simple and economical one-step coverage.

Currently Serving (as of December 2013): 60 lac target population across 11 city zones

Future Coverage (by mid-2014): 70 lac target population across 15 city zones, through 150 Health Posts (new Health Posts to be set up using NUHM funds)

Figure 10.5 - Cervical Cancer Screening Initiative Corporation of Chennai: Reach in Numbers

For the continued success of such a large scale health initiative, it is important to communicate effectively with the target beneficiaries. For this, the cadre of Urban Health Nurses needs to be empowered with effective training in communication skills and counselling of patients. Thus, continued capacity building of the healthcare staff is required for effective programme implementation.

Popular media also needs to be tapped to communicate with the end-beneficiaries.

10.8.6 Technology Interventions (Scalability and Replicability)

When Chennai Corporation started the cervical cancer early detection project, the aim was to screen women in the age group 30-45 years, primarily. Keeping that in mind, the Magnavision, VIA (Visual Inspection Using Acetic Acid), VILI (Visual Inspection with Lugol's Iodine) techniques were introduced, providing a single visit approach to detect this cancer. This method of detecting cancer is easy, cost effective and painless. It obviates the need for expensive tests using advanced equipment.

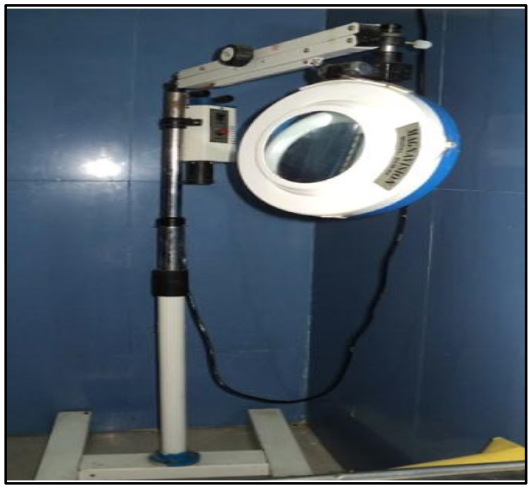


Figure 10.6 - Magnavision Device at Corporation of Chennai Health Post, Saidapet

An online database of all patients who visit Corporation of Chennai/GoTN Health Dept. hospitals **Patient Identification Number or PIN** is allotted via the TNHSP HMIS. The PIN is used to identify patients during their subsequent visits and maintained for indexing and further reference by healthcare staff.

10.9 Shortfalls and Suggested Corrective Actions

Table 10.1 – Initiative shortfalls and suggested corrective actions

Weakness/Shortfall	Suggested Corrective Action
1) Coverage: Through the adoption of simple and effective technologies, the programme roll-out has been enabled. While the programme has been successful in reduction of cervical cancer as evident from the reduced number of cases reported in Chennai, breast cancer cases are on the rise, as per the observations of the Corporation of Chennai medical officers. Detailed numbers are maintained by organisations such as NCRP (Population and Hospital-based Cancer Registries). Capabilities need to be built at state and city levels to maintain a database of positive cases and reinforce benefits of early detection and treatment.	Going beyond basic hygiene and awareness generation, capacities should be built for enabling suitable enhancement and expansion of the coverage of the initiative to screen beneficiaries (women 18-60 years) for breast cancer and other diseases.
2) Cultural Challenges: Cancer is seen as a frightening, incurable disease and often becomes reason for stigmatising the affected person. Usually, they are reluctant for screening, because of the fear of society and family. Lack of privacy and confidentiality during screening, cultural norms encouraging modesty among women and insufficient importance given to women's health issues are significant barriers to cervical cancer screening. Getting the disease is associated with stigma due to the belief that it is caused by high parity, sexual promiscuity and poor hygiene. As such, amongst intended beneficiaries, there remains the challenge and stigma of overcoming societal pressure and undergoing cervical cancer screening. Women open up at health camps regarding their health.	Topics/issues such as breast cancer, cervical cancer and reproductive health of women are taboos, not to be discussed openly, especially in a traditional, culture-bound society such as India. Therefore, regular and sustained awareness initiatives are needed to educate women and their spouses/partners; in order to change mindsets it may take as long as 25-30 years. To speed up this process, it is recommended that women residing in urban slums or disadvantaged rural communities (BPL families, tribal areas) are targeted with specific messaging delivered in a culturally appropriate manner, e.g., VLVs should be trained and cultivated as a dedicated cadre over a period of 1-2 years so that the women residing in their catchment area develop a sense of trust with these health workers. These sustained one-to-one and one-to-few interactions are a necessary intervention to change mindsets and help increase the participation of women in preventive cancer early detection camps that are held every 1-2 months. If these steps are institutionalised into any public Cancer Screening Programme, it would hasten the process of winning the trust of the target population (women 18-60 years). Further, to make

Weakness/Shortfall	Suggested Corrective Action
	a visible impact the programme should plan to cover a bulk (say, 70%) of the target population, within the first 2 years. This positive cycle of communication and action-on-ground will help to improve compliance levels; regular follow-ups will improve treatment outcomes and survival rates of patients detected with pre-cancerous lesions etc. In this manner, a positive cycle of communication, preventive health check-ups and treatment can be established.
3) Human Resources Development/Capacity Building: Capacity building programmes are targeted to cover the doctors (15 days training), sector/staff nurses (7 days training) and urban health nurses (1 day training). Many doctors are contractual employees of the Corporation and may not have a long term commitment to the programme. Moreover, the number of medical officers (doctors) are not deemed sufficient to cater to general OPD patients and at the same time provide specialised care to cancer patients	There is need to recruit and train a dedicated team of doctors, who could devote full attention to the Cancer early Screening Initiative, and could regularly update themselves through refresher training programmes once every six months or on need basis. This will contribute to the sustainability of the initiative, and lead to resolution of operational bottlenecks and grievances in the initiative.
4) Challenges with Screening and Compliance: There are challenges associated with undergoing screening and follow-up treatment, as most women are the sole and key contributors to the family income. There is a huge perceived economic burden on families when women undergo screening.	A clear plan for sensitisation of women and their family should be undertaken to drive compliance, undergoing diagnosis and treatment.
5) Scalability of Initiative: While the leadership team comprises of employees of Corporation of Chennai), the implementation team of general practitioners is largely employed on the rolls of a third-party agency in each district. This front-line staffs are deployed at Health Posts. Each Urban health nurse is allocated a population of 10,000 people in their area. There are two doctors for every 50,000 target population. Thus, for success of such initiative in other Cities and States, this factor requires special attention.	1) The Cervical Cancer Initiative must review the mechanism of contracting general practitioners on priority. 2) The ratio of Urban Health Nurses and beneficiaries covered by them should be relooked, and assessed for sustainability and scalability.

Weakness/Shortfall	Suggested Corrective Action
6) Technology: Simple technologies for screening have been adopted for the Chennai Cervical Cancer Initiative. However, when replicating this initiative, the challenge would come in enabling the resource personnel to adapt the technology.	Focus needs to be given on training and capacity development in deploying such technologies through dedicated resource personnel. For sustained scalability and effective replicability of initiative, innovative communication channels need to be adopted.

10.10 Indicative Factors for Identification of Target States/Cities

Globally, the burden of Cervical Cancer weighs heavily in resource-limited settings, largely a result of lack of screening programs. As mentioned in Section 10.2, over 134,000 cases of cervical cancer are diagnosed each year in India, and nearly 73,000 Indian women die of the disease every year. When viewed from a global perspective, these figures account for approximately 26% of the burden of Cervical Cancer worldwide. New cervical cases are projected to reach almost 205,000 by 2025 Indian women dying due to cancer of the cervix are projected to rise to over 115,000 every year by 2025 (IARC, GLOBOCAN 2008). Cervical Cancer is ranked as the most frequent cancer in women in India. India has a population of approximately 365.71 million women above 15 years of age, who are at risk of developing cervical cancer. The current estimates indicate approximately 132,000 new cases diagnosed annually. Indian women face a 2.5% cumulative lifetime risk and

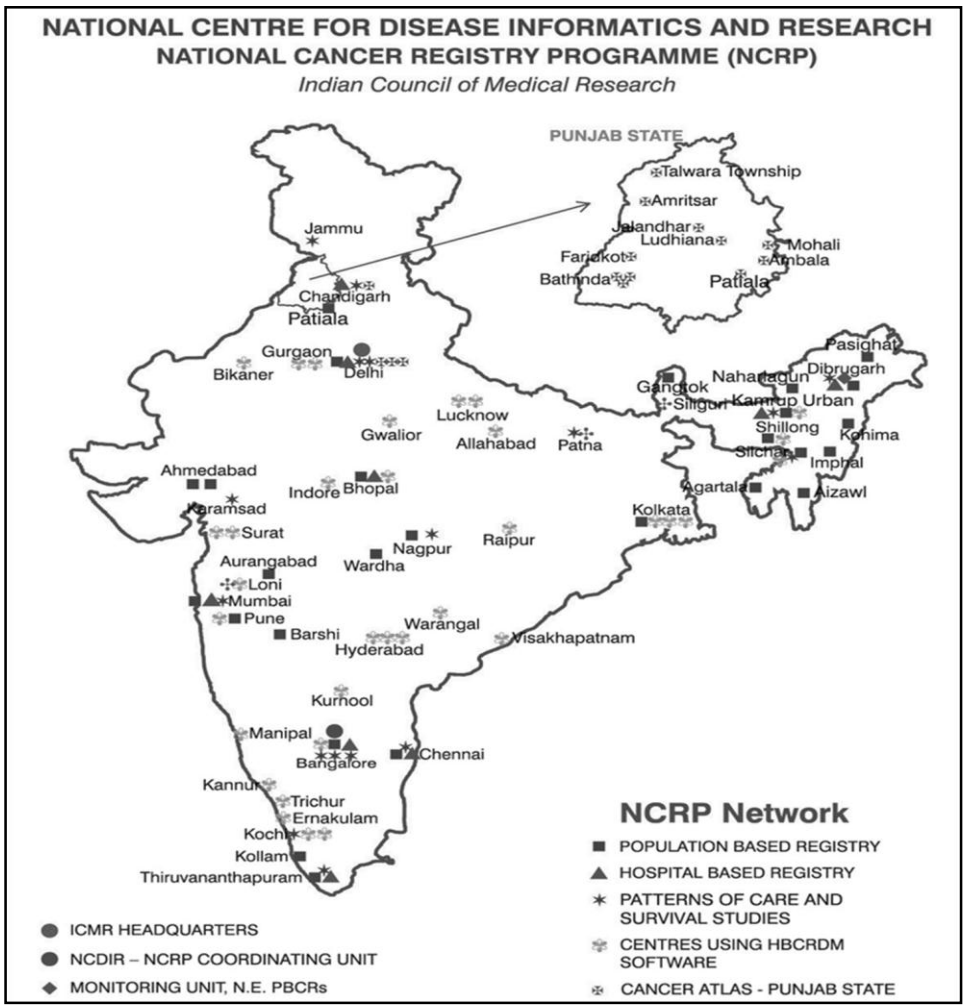


Figure 10.7 – National Cancer Registry Programme

1.4% cumulative death risk from cervical cancer. At any given time, about 6.6% of women in the general population are estimated to harbour cervical HPV infection. According to the Cervical Cancer-Free Coalition an American research and advocacy group, more women die from cervical cancer every year in India than anywhere else in the world. The index, which ranked 50 countries, shows India in the top spot in terms of overall deaths.

As such, states having a large cervical cancer/breast cancer disease burden can benefit from adopting low-cost, economical techniques pioneered by Chennai Cervical Cancer Initiative. State health administrators are strongly encouraged to review the key findings of this evaluation study and the recommendations in the following section, in order to arrive at their own optimal model of screening Cervical Cancer.

In India, the National Cancer Registry Programme (NCRP) was commenced by the Indian Council of Medical Research (ICMR) with a network of cancer registries across the country in December 1981.

The main objectives of this Programme were:

1. To generate reliable data on the magnitude and patterns of cancer
2. Undertake epidemiological studies based on results of registry data
3. Help in designing, planning, monitoring and evaluation of cancer control activities under the National Cancer Control Programme (NCCP)
4. Develop training programmes in cancer registration and epidemiology.

With these objectives three Population Based Cancer Registries (PBCRs) at Bangalore, Chennai and Mumbai and three Hospital Based Cancer Registries (HBCRs) at Chandigarh, Dibrugarh and Thiruvananthapuram were commenced from 1 January 1982. The PBCRs have gradually expanded over the years and as of now there are 23 PBCRs under the NCRP network.

Table 10.2 - India State-wise Estimated Number of Breast and Cervix Cancer Cases – 2009-2012

S. No.	States/UTs	Cervix Cancer				Female population (census 2011)	Cervix cancer cases(2012) per 1,00,000 female population
		2009	2010	2011	2012		
1	Andaman and Nicobar Islands	35	37	38	39	177,710	16.32
2	Andhra Pradesh	7497	7680	7764	7907	42,138,631	12.56
3	Arunachal Pradesh	118	124	127	129	669,815	12.99
4	Assam	1229	1265	1290	1314	15,266,133	10.71
5	Bihar	9117	9444	9646	9824	49,821,295	9.50
6	Chandigarh	74	77	81	82	474,787	25.27
7	Chhattisgarh	2196	2261	2296	2338	12,712,303	10.92
8	Dadra and Nagar Haveli	27	29	31	32	149,949	15.34
9	Daman and Diu	14	14	14	14	92,946	13.99
10	Delhi	1175	1235	1287	1311	7,800,615	26.56
11	Goa	123	71	65	66	719,405	18.35
12	Gujarat	4908	5056	5141	5236	28,948,432	14.22
13	Haryana	2112	2188	2236	2277	11,856,728	13.57
14	Himachal Pradesh	636	653	662	674	3,382,729	9.64
15	Jammu and Kashmir	975	1002	1014	1033	5,900,640	11.29
16	Jharkhand	2890	2992	3057	3113	16,057,819	11.54
17	Karnataka	5298	4201	4281	4360	30,128,640	29.53
18	Kerala	3170	3236	3259	3319	17,378,649	12.49
19	Lakshadweep	7	7	7	7	31,350	15.95
20	Madhya Pradesh	5075	5238	5361	5460	35,014,503	19.51
21	Maharashtra	9264	9545	9713	9892	54,131,277	15.60
22	Manipur	96	100	101	103	1,280,219	7.03
23	Meghalaya	260	270	276	281	1,475,057	11.12

S. No.	States/UTs	Cervix Cancer				Female population (census 2011)	Cervix cancer cases(2012) per 1,00,000 female population
		2009	2010	2011	2012		
24	Mizoram	81	85	86	88	541,867	11.07
25	Nagaland	263	279	293	298	953,853	16.35
26	Odisha	3779	3876	3921	3993	20,762,082	10.52
27	Puducherry	89	92	94	96	635,442	17.63
28	Punjab	2288	2352	2389	2433	13,103,873	14.27
29	Rajasthan	6014	6233	6374	6492	32,997,440	12.02
30	Sikkim	26	27	29	30	287,507	5.57
31	Tamil Nadu	6623	6809	6949	7077	36,009,055	30.91
32	Tripura	321	330	334	340	1,799,541	10.89
33	Uttar Pradesh	17367	17975	18353	18692	95,331,831	11.62
34	Uttarakhand	883	910	927	944	4,948,519	12.12
35	West Bengal	7908	8128	8244	8396	44,467,088	12.66
	India	**101938**	**103821**	**105740**	**107690**	**587,447,730**	**14.93**

Source (Cervix Cancer numbers): Lok Sabha Unstarred Question No. 532 dt. 3rd May 2013

From the above table we can interpret that states with a high incidence of Cervical Cancer per 1,00,000 Female population such as Tamil Nadu, Karnataka, Delhi, Chandigarh, Madhya Pradesh, Goa, Puducherry, Nagaland, Andaman and Nicobar Islands, Lakshadweep, Maharashtra, Dadra and Nagar Haveli should be prioritised for launching/running a Cancer Screening & Early Detection programme on the lines of Chennai.

Chennai PBCR has had the highest incidence rate of cervical cancer among the Indian PBCRs. This AAR is somewhat lower than that seen in the registries in Africa and Brazil (Parkin et al, 2002). The district-wise MAARs indicate a belt of high incidence rates even higher than that in Chennai PBCR, in the North Eastern districts of Tamil Nadu state including Pondicherry which had the highest MAAR of 39.2 per 100,000 people.

Thus, the NCRP cancer registry data can serve as a most robust reference point for selecting states or districts to create intervention programmes aimed at early detection of Cervical Cancer and Breast Cancer among women in India, as illustrated in the map and chart above.

10.11 Implementation Approach

Based on the current evaluation study, a set of guidelines to implement a 'model' Cancer Screening and Early Detection Programme are presented below. These should necessarily be read along with the 'Implementation Strategy', 'Outcomes' and 'Study Findings' discussed in the chapter. In this manner it is hoped that the reader would be able to gain a comprehensive understanding of the needs, challenges faced and best practices that can be employed for rolling out an effective, scalable and sustainable Cancer Preventive Screening and Women Comprehensive Health Programme.

Table 10.3 - Critical Success Factors for Replication of the Initiative

Factor	Strength/Benefit
Scheme Scope & Coverage, Enabling Policy Interventions	**1) Scope of the Initiative:** Chennai Corporation, as the primary municipal institution of Chennai, it runs and operates the cervical cancer early detection project through its Department of Maternal and Child Welfare. Urban Health Nurses, responsible for identifying the target group of women and guiding them to the health posts. Lastly, the health posts of Chennai Corporation where screenings are conducted. **2) Implementation:**

Factor	Strength/Benefit
	Urban Health Nurses (UHNs) sent for home visits to educate, train, convince for the screen. UHN were trained to have 1-on-1 interactions and educate women about importance of institutional discipline for pregnancy and other tests. In a way, UHNs are the primary communicators for this project. 3) **Impact**: The Corporation of Chennai is highly satisfied with the positive outcomes achieved through the Cervical Cancer Initiative. From 19.3 lac cases of Cervical Cancer in 2008, there has been a gradual reduction in the number of cervical cancer cases being reported as per the Corporation of Chennai DFWMB.
Scheme Governance, Monitoring and Review Mechanisms, Innovations & Reward Structure	1) **'Grassroots' Monitoring & Review**: The Cervical Cancer initiative has been successful in generating user satisfaction through sustained interactions in the community by Urban Health Nurses, nurses and medical officers. This has led to a spike in compliance from women undergoing screening at Health Posts. Monthly and annual reports are maintained at the health post, ward and city level and reviewed periodically. The Governance Framework is tailored such that maximum impact is created in communities not only around cervical cancer, but also on overall hygiene. Breast cancer has also been added to the screening programme.
Capacity Building and IEC Campaigns	1) **Training & Orientation**: Training is provided to all Urban Health Nurses, Medical Officers, and Health Post Workers. 2) **Scheme Staffing**: General Practitioners (GPs) were hired through a third-party agency. More than 100 doctors from District Family Welfare Bureau, Corporation of Chennai were trained in the VIA (Visual Inspection Using Acetic Acid), VILI (Visual Inspection with Lugol's Iodine) at the Kasturba Gandhi Government Hospital, Chennai. 3) **Sharing & Replication of Best Practices**: Corporation of Chennai trained two master trainers at the Chittaranjan Cancer Institute, Kolkata. Five hundred paramedical staff members were trained to go to the field and put on screening camps. 4) **Interactive Campaigns**: Radio and Cable TV campaigns have been held for getting stakeholder participation. Through FM Radio Channels, and Cable TV, an interactive campaign was launched to educate the women, through sustained campaigns such as the "Month of the Mouth of the Uterus" (Roughly translated from the Tamil campaign phrase).
Financial Viability	1) **Low-Cost Techniques and High Compliance Levels**: By deploying low-cost detection techniques, diagnosis rates for cervical cancer have gone up considerably in Chennai.
Organisational Structure and Stakeholder Participation	1) **Team:** When Chennai Corporation started the project, aim was to screen women of age group 30-45. Keeping in that mind, the Magnavision, VIA (Visual Inspection Using Acetic Acid), VILI (Visual Inspection with Lugol's Iodine) techniques were introduced, providing a single visit approach to detect this cancer. This method of detecting cancer is easy, cost effective and painless. There are stakeholders such as the Tamil Nadu Health Systems Project (TNHSP) and the Non-Communicable Diseases Screening Program (NCDSP) that have helped the Corporation of Chennai with the programme roll-out.

Factor	Strength/Benefit
	Training has been given to doctors, nurses and paramedical staff about simple and cost effective way of detecting cancer. Manpower has been increased specifically for this project.
Technology Interventions	1) **Technology:** The Magnavision, VIA (Visual Inspection Using Acetic Acid), VILI (Visual Inspection with Lugol's Iodine) technique were introduced, providing a single visit approach to detect this cancer. This method of detecting cancer is easy, cost effective and painless. 2) **Reach-Out** Although the traditional publicity method did its part, UHNs were directly responsible for sustainability of this project. Since, they have developed personal contacts with these patients, following up was easy and educating them easy.

Salient Features of a Cancer Preventive Screening and Women Comprehensive Health Programme: Replication Guidelines

Based on the findings of the study of Cervical Cancer Screening in Chennai outlined in the chapter and the good practices followed by Corporation of Chennai listed in the table above, a proposed set of replication guidelines are listed out below for the benefit of the reader:

Step 1: Defining Scope and Coverage of the Cancer Preventive Screening and Women Comprehensive Health Programme

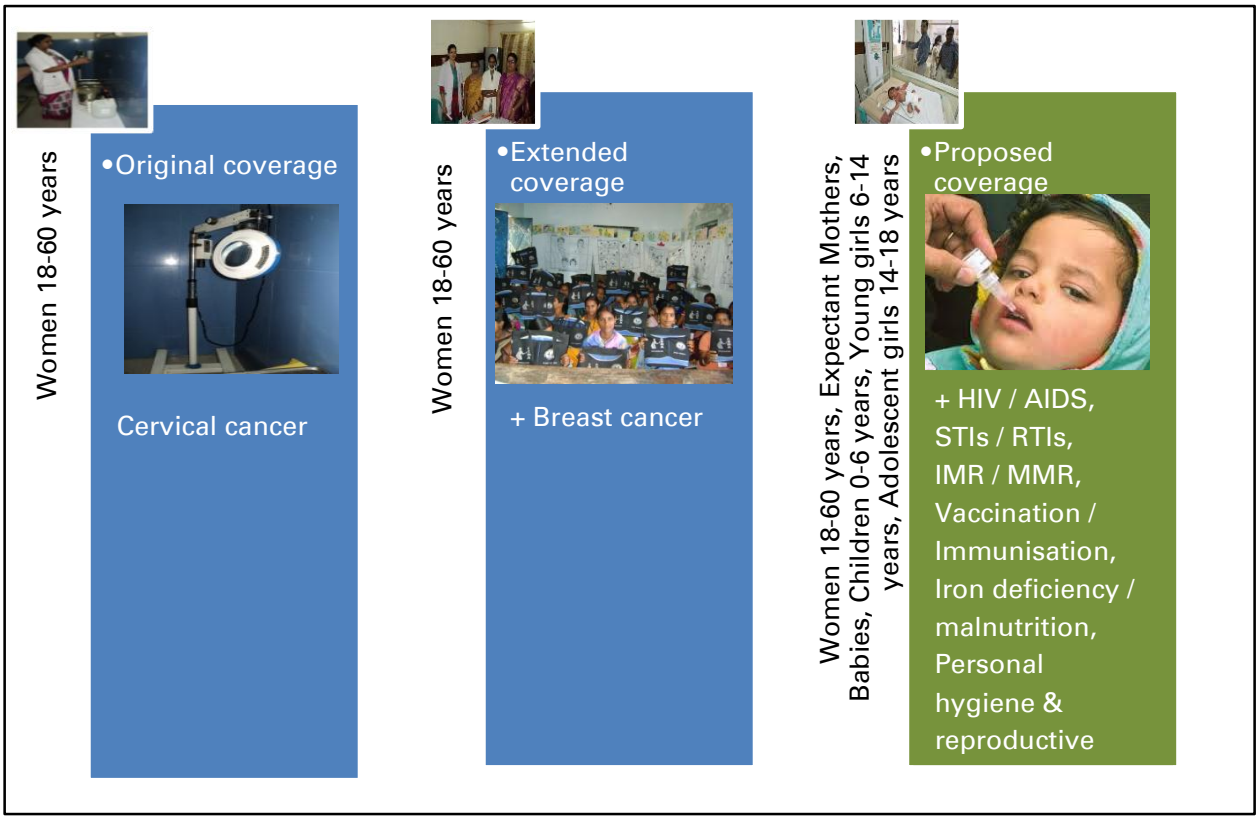


Figure 10.8 - Scope and Coverage of the Cancer Preventive Screening and Women Comprehensive Health Programme

HIV: Human Immuno-deficiency Virus, AIDS: Acquired Immuno-deficiency Syndrome, STI: Sexually Transmitted Infections, RTI: Reproductive Tract Infections, IMR: Infant Mortality Rate, MMR: Maternal Mortality Ratio

While considering Cervical Cancer Initiatives in their state, policymakers should plan project implementation, taking into account relevant cultural, socio-economic, political and technological developments, so that beneficiaries are able to access the system better, and the initiative is able to deliver efficiently.

The original scheme for preventive cancer screening in Chennai focused on identifying incidence of cervical cancer amongst women living in slums in the 18-60 years age band. Due to changing lifestyles (late pregnancies, foregoing breast-feeding etc.), the cases of breast cancer started rising sharply post mid-2000s. Thus, breast cancer was included as part of the initiative on preventive cancer screening for adult women.

Going forward, we propose that the scheme should not only cover preventive screening for cervical cancer and breast cancer, but a range of health issues that impact women, babies, young children (0-6 years) and girls. These include HIV/AIDS detection/prevention; safeguards against STI/RTI; vaccination and immunisation of expectant mothers, new-born babies and young children, and issues of personal hygiene and reproductive health amongst adolescent girls. The central idea should be to 'catch them young'.

Thus, it is proposed that the separate healthcare programmes/schemes such as Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), Rashtriya Bal Swasthya Karyakram (RBSK), National Iron+ Initiative and Indira Gandhi Matritva Sahyog Yojana (IGMSY) or Integrated Child Development Services (ICDS) be run in a coordinated manner or, under a Nodal Women & Child Health Officer in each target city/rural district.

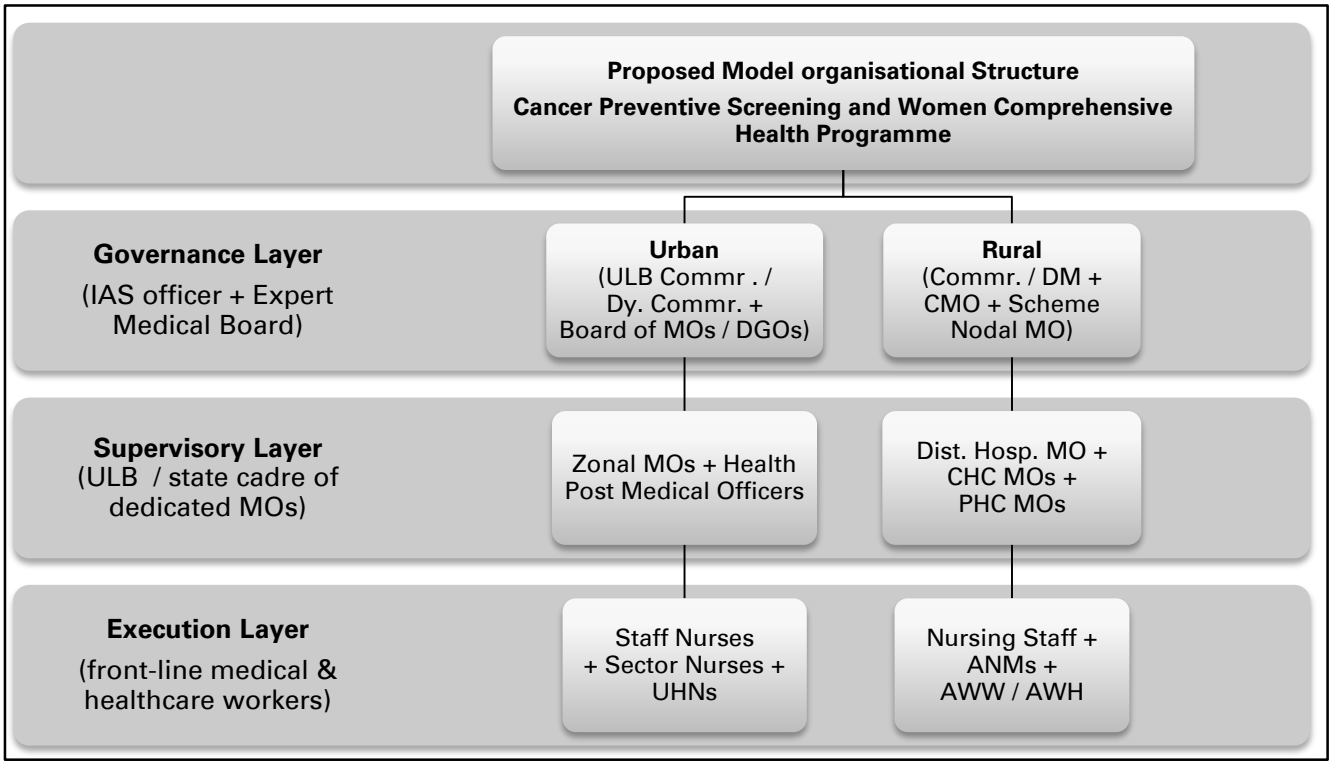


Figure 10.9 – Proposed Model Organisational Structure

ANM: Auxiliary Nurse Midwife, AWH: Anganwadi Helper, AWW: Anganwadi Worker, UHN: Urban Health Nurse

Step 2: Creating the 'Best Fit' Organisational Structure and Appropriate Governance Framework to Effectively Manage the Cancer Screening Programme

When considering implementation, steps should be taken to build an effective and responsive communication channel so that there is perfect alignment between the project planning team, and the grassroots implementation team.

Urban Areas

The 'as-is' organisational structure/governance framework under Corporation of Chennai is directly replicable in any other large metro city or state capital of India.

This comprises three layers:

a) **Governance Layer**: Headed by the Commissioner/Deputy Commissioner or equivalent rank of civil services officer with the urban local body (ULB) and advised by a full-time board of medical professionals (doctors), to oversee planning and monitoring of the scheme at the city-level.
b) **Supervisory Layer**: Each ward in a city should be supervised by a veteran Medical Officer (Zonal Medical Officer) with exposure to the areas of gynaecology, obstetrics, reproductive medicine and oncology. Adequate numbers of Medical Officers must be hired as permanent cadre to manage the day-to-day operations of the Dispensaries/Health Posts (As mentioned in Section 10.8.3, the current ratio in Chennai city is 2 MOs for every 50,000 patients). As suggested at S. No. 3 in the table under Section 10.9, the cadre of MOs should comprise of general practitioners (GPs) supported by a specialist at the ward/city level.
c) **Execution Layer**: Adequate numbers of professionally trained nursing staff and para-medical staff must be deployed in each ward to cater to the target audience needs. (The current ratio in Chennai city is 1 para-medical staff to every 10,000 patients.)

Rural Areas

The organisational structure/governance framework in a semi-urban/rural area should leverage on the existing medical and health services delivery infrastructure in the district.

Based on this premise we suggest that the three layers be structured as below:

a) **Governance Layer**: Headed by the Commissioner/District Magistrate or equivalent rank of civil services officer with the Chief Medical Officer (CMO) as advisor, and supported by an 'Integrated Women, Child and Family Health Scheme' Nodal Medical Officer (doctor), to oversee planning and monitoring of the scheme at the district-level.
b) **Supervisory Layer**: Each town/block in a district should be supervised by a veteran Medical Officer (Zonal Medical Officer) with exposure to the areas of gynaecology, obstetrics, reproductive medicine and oncology. Adequate numbers of Medical Officers must be hired as permanent cadre to manage the day-to-day operations of the Community Health Centres, Primary Health Centres, Dispensaries and Anganwadi Centres (AWCs).

Execution Layer: Adequate numbers of professionally trained nursing staff and para-medical staff (ANMs, AWWs and AWHs) must be deployed in each town/block to cater to patients screening, treatment and vaccination/inoculation needs

Table 10.4 - Roles and Responsibilities by Type of Stakeholder/Staff

Stakeholder/Staff	Roles and Responsibilities
State Coordinator (state-level)	• Part of the Project Management Unit • Diverted from the Tamil Nadu Medical services on regular service /contract • Co-ordinates and monitors all the activities at the state level

Stakeholder/Staff	Roles and Responsibilities
Cancer Control Officer (CCO) (district-level)	• Part of District Project Management Unit • Diverted from the Tamil Nadu Medical services on regular service/contract • coordinates and monitors all the activities at the district level
NGOs	Contracted to recruit the Village Link Volunteers (VLVs) and Counsellor-cum-Assistants (CCAs) and monitor their work and to coordinate the programme with the Cancer Control Officer (CCO)
Counsellor-cum-assistant (One at every Screening Centre.)	To motivate the women attending the out-patient dept. (OPD) and guide the women who come for screening after having been motivated by the VLV (a graduate from any field)
Village Link Volunteer (One at every Health Sub-centre)	To motivate the women in the field (would have undergone basic schooling)

Training

- VLVs and counsellors to be sensitised regarding the programme during the start of the pilot and then scheduled to be re-sensitised twice a year, every year.
- Information, education, and counselling (IEC) materials to be provided to all the VLVs, CCAs and the Health Institutions.
- Registers, forms to be provided once during the start of the programme and thereafter as and when required.
- All the doctors, SNs, ANMs to be trained in VIA/VILI technique, based on their training status at the start of the programme, and then as and when required.
- All the OG Specialists to be trained in Colposcopy/Cryotherapy technique irrespective of their training status at the start of the programme, and then as and when required.

Step 3: Running a Sustained Awareness Campaign, Creating Focused Messaging aimed at the Target Population of Poor Women Aged 18-60 years

A comprehensive IEC campaign must be planned and executed in a focused manner to adequately educate and inform the target audience – women in the 18-60 years age band, expectant mothers and adolescent girls (14-18 years) – on their key 'life-stage' nutritional, general and reproductive health needs.

This can be done through hoardings and banners at hospitals/dispensaries, lectures and group counselling sessions to women's self-help groups, girls' schools, women's colleges etc. as well as one-to-one and one-to-few interactions with expectant mothers and reproductive-age group/sexually active women.

Finally, men/partners of women must be targeted with specific messages to increase awareness levels and change their behaviour patterns towards adopting contraceptives, spacing of child births and better health practices.

Planners should adopt communication techniques that build confidence in the intended beneficiaries of the initiative, e.g., work with star campaigners like Manisha Koirala and Lisa Ray, who have successfully fought and survived cancer. This may lead to greater compliance amongst beneficiaries in the target population.

Step 4: Putting in Place a Robust Monitoring and Evaluation Framework for Screening Coverage and Follow-up Cases

A framework for continuous monitoring and evaluation of goals achieved should be in-built into a cancer early detection initiative from inception. Such a formal mechanism of monitoring and evaluation of initiative objectives and progress accomplished would help in assessing the success of the initiative, and user satisfaction.

For example Corporation of Chennai Health Posts maintains patient records on manual (pen-and-paper) registers. Besides this, patient data is

also recorded on PC terminals connected with the TNHSP network, where every patient is given a unique Patient Identification Number (PIN), for tracking and monitoring at a centralised level. More details are provided in the Case Study 'B' on the Tamil Nadu Health Systems Project's Health Management Information System (HMIS).

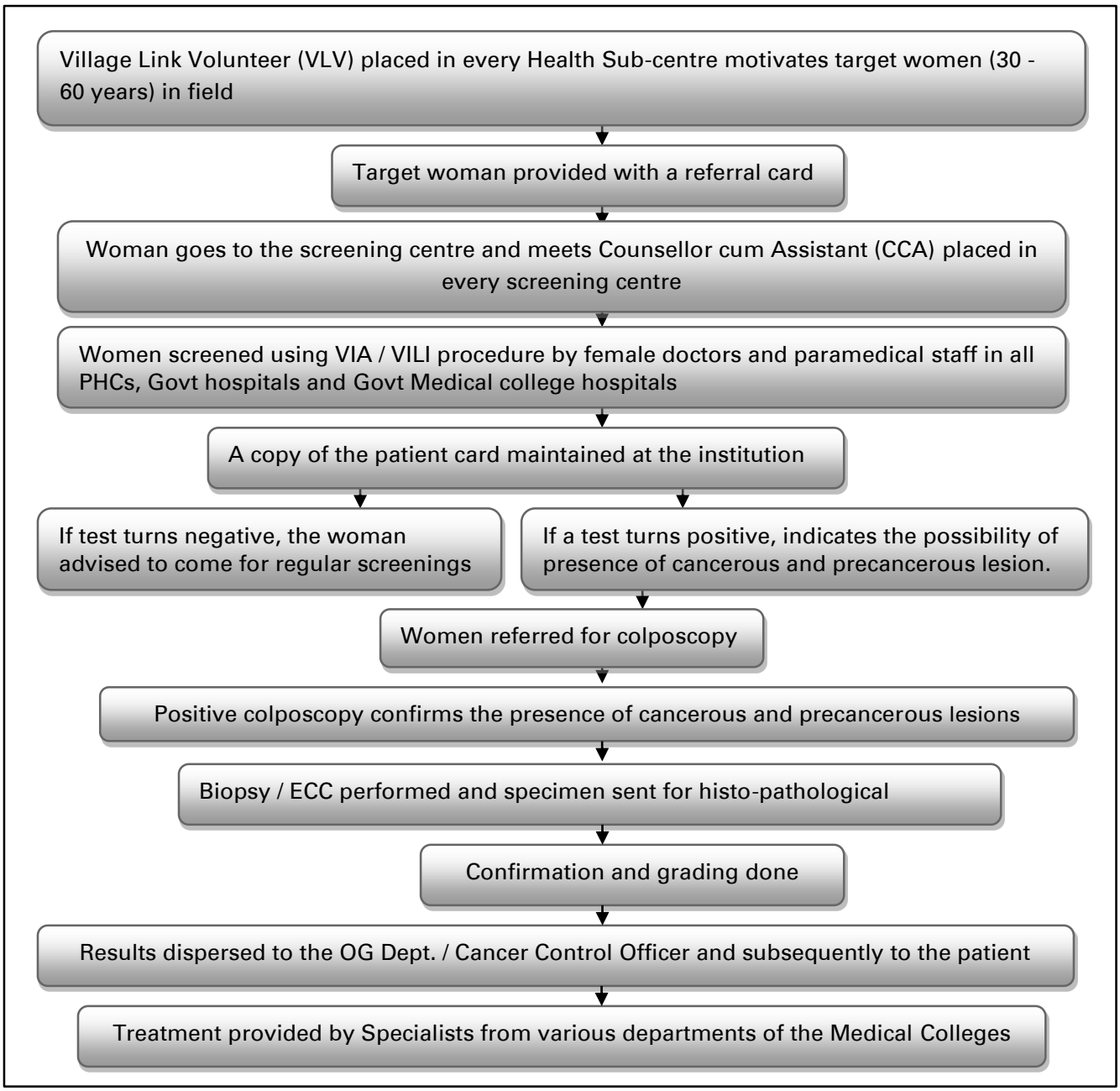


Figure 10.10 - Protocol of the Cancer Preventive Screening and Women Comprehensive Health Programme

Equipment (as per Pilot Screening Programme in Tamil Nadu)

The equipment provided includes the following:

- One VIA/VILI kit including the ring lens magnification system provided to each of the 106 Health Facilities.
- 2 Colposcopy Instruments provided to each of the Colposcopic Centres (totally three Colposcopic Centres in each district).
- 2 Endocervical Currettes provided to each of the Colposcopic Centres.
- 5 Cryotherapy Units provided to each district

One computer provided for storage of data in each district.

Step 5: Establishing Linkages with Blood Banks, Healthcare NGOs and CSOs

Linkages must be established and/or strengthened with blood banks, NGOs and CSOs working in the area of women and child health, especially those related to reproductive health issues. This will help not just to lower chances of infection due to transfusion of infected blood, it will supplement healthcare initiatives of the government, build greater awareness about the dangers of cervical cancer, HIV/AIDS and female reproductive health in general.

A few examples of leading blood banks/blood bank databases in India are Bharat Blood Bank - www.bharatbloodbank.com, Indian Blood Bank – http://indianbloodbank.com, Blood Bank India - www.bloodbankindia.net, Rotary Blood Bank, www.rotarybloodbank.org and Menily, www.menily.com as well as stem cell blood banks such as datriworld.org and others.

Step 6: Establishing and Leveraging Inter-linkages amongst Public Healthcare Service Delivery Institutions

Adequate public healthcare institutional capacity must be built up or strengthened in each target city or state, either through public financing of 'green-field' healthcare service delivery institutions or through a mechanism of Public-Private Partnership (PPP), whereby the private sector takes off some of the load of providing essential healthcare services to the target population.

A proposed structure is shown in the diagram below:

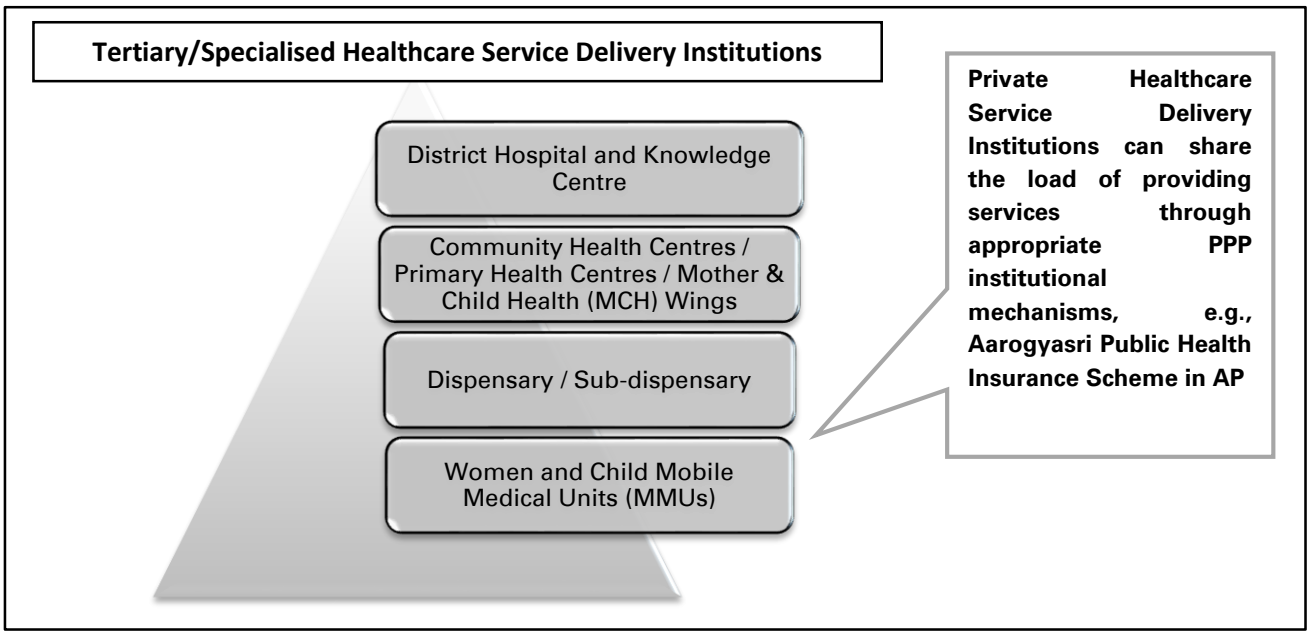


Figure 10.11 - Proposed Healthcare Service Delivery Network at City/District Level

Overview of Proposed Cancer Preventive Screening and Women Comprehensive Health Programme

Defining Scope and Coverage of Cancer Preventive Screening & Women Comprehensive Health Programme (e.g., through Mean Age Adjusted Incidence Rate by District)

Scheme should cover preventive screening for cervical cancer, breast cancer and a range of health issues that impact women, and adolescent girls (14-18 years), e.g., HIV / AIDS detection / prevention; safeguards against STI / RTI; vaccination and immunisation of expectant mothers, personal health & hygiene etc.

Creating the 'Best Fit' Organisational Structure and Appropriate Governance Framework to Effectively Manage the Cancer Screening Programme

A Governance Layer, Supervisory Layer and Execution Layer should be planned for both urban areas (cities / towns / municipal wards) and rural areas (districts, blocks), to ensure adequate reach and a healthy doctor: patient ratio.

Running a Sustained Awareness Campaign, Creating Focused Messaging aimed at the Target Population of Poor Women 18-60 years

A comprehensive IEC campaign must be planned and executed in a focused manner to adequately educate and inform the target audience – women in the 18-60 years age band, expectant mothers, adolescent girls (13-18 years) and spouses of women through hoardings, street plays, personal counselling etc.

Putting in Place a Robust Monitoring and Evaluation Framework for Screening Coverage and Follow-up Cases

A framework for continuous monitoring and evaluation of goals achieved should be in-built into a cancer early detection initiative from inception. Provision should be made for a state level back-end database of patient records with PC terminal connectivity up to PHC level, e.g., the TNHSP network allots every patient a unique Patient Identification Number (PIN), for tracking and monitoring at a centralised level / on subsequent visits. Regular district and state level analyses should be done on positive cases, treatment provided, survival rates etc.

Establishing Linkages with Blood Banks, Healthcare NGOs and CSOs

Linkages must be established and / or strengthened with blood banks, NGOs and CSOs working in the area of women and child health, especially those related to reproductive health issues. For example, A few examples of leading blood banks / blood bank databases in India are Bharat Blood Bank - www.bharatbloodbank.com, Indian Blood Bank – http://indianbloodbank.com, Blood Bank India - www.bloodbankindia.net, Rotary Blood Bank, www.rotarybloodbank.org and others.

Establising and Leveraging Inter-linkages amongst Public Healthcare Service Delivery Institutions

Adequate healthcare institutional capacity must be built up or strengthened in each target city or state, either through public financing of 'green-field' healthcare service delivery institutions or through a mechanism of Public-Private Partnership (PPP) with private hospitals / nursing homes to extend reach of treatment facilities.

Figure 10.12 - Overview of proposed replication guidelines

Key Replication Processes and Indicative Timelines

These timelines are indicative timelines based on the interactions with the stakeholders involved in the initiative and secondary researches; the actual timelines may vary depending on the infrastructure and socio-economic environment of the state/city. The indicative timeline may also vary depending on political and administrative will of policy makers and implementers.

Table 10.5 – Indicative timelines

S. No.	Key Process/Implementation Step	Indicative Timeline
1.	Setting up PHC/Health Post Infrastructure	6 to 12 months
2.	Recruitment and Training of Medical Officers (additional), Staff & Sector Nurses (additional), UHNs/VLVs (fresh)	3 to 6 months
3.	Screening of Patients, Treatment follow-ups and Counselling	18-24 months for a mid-size city and 24-36 months for a large metro, to achieve a significant level of screening (100-150 fresh screenings per month performed in Chennai)
4.	Conducting Health Camps, IEC Campaigns	Once every 3-4 months, supported by personal visits of UHNs and VLVs and street plays etc.

Case Studies: Trends & Best Practices in Cervical Cancer Screening in Tamil Nadu, Developing Countries and USA

A. Pilot Programme on Screening for Cervical Cancer, Tamil Nadu

Pilot Districts

As 80% of the women detected with Cervical Cancer in developing countries come from rural areas, Theni and Thanjavur (being primarily agricultural districts) were selected for a three-year pilot by Govt. of Tamil Nadu (starting December 2009).

Target Population

All women within the age group 30 to 60 years, irrespective of the presence of symptoms were screened for Cervical Cancer.

Table 10.6 – Pilot district information

	Thanjavur	Theni
NGOs	14	6
Counsellor-cum-Assistants (CCAs)	72	34
Village Link Volunteers (VLVs)	309	160

Monitoring and Evaluation

Concurrent evaluation of the Pilot Project on Cervical Cancer Screening in Thanjavur and Theni districts was done by the National Institute of Epidemiology (NIE), Indian Council of Medical Research. The table below list out the important findings.

Table 10.7 – Pilot district evaluation report findings

Findings by NIE	Efforts taken by TNHSP
Lack of community based IEC and weak hospital based IEC	New set of IEC materials prepared focussing equally on community and hospitals
Reporting errors at all levels	Monitoring from project management unit strengthened at both district and state level
Inflation of reports	Field surveys conducted by PMU twice to check out the real picture and efforts taken to bring out the actual reporting

Findings by NIE	Efforts taken by TNHSP
Variations in VIA/VILI sensitivity between districts	Frequent sensitisation of MOs and Paramedical Staff done on this issue
Lack of reporting from Pathology Department	Separate reporting format designed and collected
Lack of regular payment to VLVs & CCAs by NGOs in Thanjavur	Respective NGOs sacked and the field workers brought under new NGOs
Persistent vacancies of VLVs in remote areas in Theni	• The number of the NGOs was increased from one to six (one NGO per block). In spite of that VLV vacancies remained persistently high. • So services of all NGOs terminated and VLVs brought under the joint control of Deputy Director of Health Services & District Maternal Child Health Officer
Increased biopsy turnover time in Theni	• Reporting strengthened at MC level • OG Specialists sensitised to take adequate biopsy specimens • Lab technicians given training on processing the specimens periodically • To have regular quality check of slides in Madurai MC Considered

Table 10.8 - Project Achievements

Categories	Thanjavur	Theni
Total number of target women screened	2,91,525	1,96,559
Total number of VIA/VILI positive	15,743	5,090
Total number of Colposcopy done	8,577	3,195
Satisfactory	6,909	3,150
Unsatisfactory	1,668	45
Total number of biopsies done	3,856	1,489
Total number of endo-cervical currettage done	479	0
Total number of CIN I cases	177	16
Total number of CIN II & III cases	91	12
Total number of Frank/Invasive Carcinoma cases	674	213
Total number of Cryotherapy done	31	3
Total number of Conisation done	6	0
Total number of Hysterectomy done	180	30
Total number of Palliative care given	300	43

Source: TNHSP

The confirmed cases of Cervical Cancer were offered free treatment under the "Kalaignar Insurance Scheme" at public and private empanelled hospitals.

Upscaling

As per TNHSP, the pilot of the project conducted in Theni and Thanjavur districts was shown to positively demonstrate that Magnavision-assisted VIA/VILI is an appropriate cost effective screening tool in low resource settings. With appropriate provision of service delivery for efficient follow up of screened positive cases, the pilot was demonstrated to be conducive for scaling up across the state.

In view of the above, the Govt. of Tamil Nadu has proposed to upscale the pilot to 16 districts in Phase I (2010 - 2011) and the remaining 16 districts in Phase II (2011 – 2012) of the Additional Financing phase of the Tamil Nadu Health Systems Development Project. The scale up will also include a concurrent screening program for Breast Cancer.

Expected Outcomes

As Tamil Nadu has shown a considerable improvement in strengthening the health system and bringing a change in the health seeking behaviour of the population, total women expected to be benefited one-time by the programmes will be 69 lac over 3 years. The total women expected to be diagnosed with Cervical Cancer/ Breast Cancer and treated will be 34,500 over the same period.

B. Tamil Nadu Health Systems Project (TNHSP): Establishment of a web-based Health Management Information System (HMIS)/Hospital Management System (HMS) in all state health facilities

Health Management Information System provides information based support for the implementation of cutting-edge reforms by Government of Tamil Nadu (GoTN) through Tamil Nadu Health Systems Project. Apart from Primary Health Centres and Secondary Care Hospitals, this project is envisaged to cover all the Tertiary Care Hospitals including state Medical Colleges and a Medical University. This is a combination of Information Technology (IT) and Management Systems, to deliver improved, evidence-based healthcare to the public at large.

Under the Tamil Nadu Health Systems project (TNHSP) this World Bank funded initiative has now turned into one of the largest Healthcare Information System platforms in the world supporting over 1,613 Primary Care Centres (Server + MIS Support), 267 Secondary Care Hospitals (HMS+MIS) and is currently being upscaled to cover Govt. Medical Colleges and hospitals (CMS+HMS+MIS+UAS).

There are two components under HMIS, one is HMS – Patient related activities and the other is MIS – a public health related module with HR, reports, finance etc. Apart from this the HMIS is also integrated with the College Management System (CMS) and University Automation System (UAS) for state govt. medical colleges, hospitals and for the Tamil Nadu Dr. M G R Medical University, as mentioned above.

HMIS was implemented in a phased manner, started as Pilot project during the year 2008 in five secondary care hospitals. Due to the encouraging results the project was extended during Phase-I to thirty-six hospitals in five districts in the year 2009. Subsequently, Phase-II activity commenced during the year 2010 included two hundred and twenty-two hospitals. At the time of the last assessment, Phase-II hospital implementation was on the verge of completion. Further, under revised Phase-III activities, approval from the World Bank and a revised Government Order (GO) were obtained. According to this order [G.O. (2D) No. 82, Health & Family Welfare (EAP1/1) department dated 18/09/2012], HMS (only OP workflow) MIS, CMS and University Automation System for 17 state medical colleges, 47 DME institutions and the Tamil Nadu Dr. M G R Medical University were planned, for which the System Requirement Study (SRS) preparation was being undertaken.

Under the project, the state e-Governance agency (ELCOT) provides basic computer training to the stakeholders / users. Apart from the application training, the e-core/nodal teams at each hospital are also trained to handle basic troubleshooting of IT infrastructure. Various GOs mandating the usage of the online system have been issued in this regard.

Thus, the GoTN's Dept. of Health & Family Welfare is estimated to have implemented various modules of the HMIS/HMS solutions in 335 hospitals in Tamil Nadu. One of the important measurable outcomes of the HMIS implementation is that approximately 80% of the registered patients bring back the **PIN (Patient Identification Number)** during their subsequent visits. This shows the high patient compliance with the system. Implementation of this system also ensures that accountability and responsibility for patient treatment outcomes is fixed on individual healthcare providers directly.

B. Cancer Screening and Treatment in Punjab

A February 2005 report sponsored by the Punjab Pollution Control Board (PPCB), based on an

epidemiological study done by Post Graduate Institute of Medical Research (PGIMR) Chandigarh, has indicated a rise in cancer cases in the Cotton Belt of Punjab due to presence of lethal pesticides in the soil and ground water, causing major health problems. Though this study was done in Talwandi Sabo block of Bathinda district, similar symptoms are emerging from the entire area. The situation is so grim that village after village is reporting cancer, reproductive disorders, birth of mentally retarded children and other pesticide related diseases.

Noting the findings of the above study, the Govt. of Punjab formulated a 'Prevention of Cancer' programme for the state. Key elements of this programme were – Testing of Heavy Metals in Drinking Water with the help of the State Public Health Laboratory; Installation of Reverse Osmosis (RO) plants in various villages; Health Education activities in affected areas such as 'National Cancer Awareness Day' (7th November 2010) and 'Mass Cancer Screening and Awareness Camps' (2011), and Steps to Control of Excessive Use of Pesticides (pesticides consumption declined from 5,975 metric tonnes in 2006-07 to 5,690 metric tonnes in 2010-11).

Diagnosis of Cancer

1) Mammography units have been established at Civil Hospitals at Bathinda, Patiala, Jalandhar and Hoshiarpur;
2) Govt. of Punjab signed an MoU with NGO Roko Cancer Trust for 2010-11 and 2011-12 to spread cancer awareness and conduct camps to screen women for breast cancer in Muktsar, Moga, Faridkot, Amritsar, Tarn-Taran, Gurdaspur and Ferozepur districts (Out of 28,587 patients examined, mammography was performed on 5,753 and suspected/positive cancer cases were 374);
3) **Cancer Registry**
    a) **Population Based Cancer Registry (PBCR)** has been started and is collecting data at Govt. Medical College, Patiala;
    b) **Hospital Based Cancer Registry (HBCR)** has been started at PGI Chandigarh and is collecting data.
4) **State-wide Cancer Mass Awareness and Early Detection Campaign** pilot was launched on 2nd October 2012.

Diagnosis of Cancer

1) **Financial Assistance under State Illness Fund through Punjab Nirogi Society** is provided to patients suffering from cancer and other life threatening diseases and belonging to BPL families;
2) **Mukh Matri Punjab Cancer Raahat Kosh Society**: Under this scheme Rs. 50 crore was made available for all cancer patients, except government employees and those having insurance cover. An amount of Rs. 1.50 lac is made available for treatment of every cancer patient.
3) Free treatment of children suffering from cancer at PGI, Chandigarh and Mohan Dai Oswal Cancer Hospital, Ludhiana; installation of Brachy therapy machine at Government Medical College and Hospital, Patiala, Radiotherapy Machine & Cobalt Unit at Sri Guru Gobind Singh Medical College, Faridkot and Sri Guru Ram Das Institute of Medical Services & Research Centre Amritsar and connecting the Regional Cancer Centre PGI Chandigarh via telemedicine facility are some of the other notable initiatives.
4) **Public-Private Partnership**: Govt. of Punjab signed an agreement with Max Health Care to set up a Super Specialty Hospital for Cancer & Trauma Care in the premises of Civil Hospital SAS Nagar (Mohali), and setting up of Super Specialty Cancer and Cardiac Hospital in the premises of Civil Hospital, Bathinda. These hospitals are fully functional.
5) **National Programme for Prevention and Control of cancer, Diabetes, cardiovascular Diseases and Stroke (NPCDCS)**: Non Communicable Disease (NCD) Clinics have been set up in Bathinda, Hoshiarpur and Mansa districts. Tertiary Cancer Centre at GMC Faridkot was allotted Rs. 6.0 crore.
6) **Cancer Hospital Bathinda**: This is being set up at an investment of Rs. 60 crore.

C. Cervical Cancer Screening Trends in Developing Countries

According to WHO, Cervical Cancer is the most common cause of cancer deaths among women in developing countries, despite the fact that cervical cancer is preventable. In South Asia and Latin America the rate of cervical cancer has declined marginally over the last 30 years, but incidence rates are high in sub-Saharan African countries such as Uganda, Mali and Zimbabwe. In some developing countries such as Argentina, Chile, Peru, South Africa and Thailand cervical cancer kills more women than maternal mortality, as shown in the table below:

Table 10.9 – comparison of cervical cancer vs maternal mortality in developing countries

Country	Cervical Cancer Deaths	Maternal Deaths
Argentina	1,679	590
Brazil	8,286	8,700
Chile	931	90
Peru	2,663	2,500
South Africa	3,681	2,600
China	25,561	11,000
India	74,118	136,000
Thailand	2,620	520

Source: ACCP

Through various WHO studies and studies by Medical Councils of different countries, it has been established that Cervical Cancer is preventable through screening to detect precancerous lesions, before the lesions develop into cancer. The nature of the disease and the treatment options available justify cervical cancer screening programmes to be run by public health authorities. Various cervical cancer screening, diagnostic and treatment methods are currently being used in developed and developing countries. Each method has its own strengths and limitations that need to be considered by healthcare policy-makers. The most important lesson is that regardless of the screening method used, the women diagnosed with pre-cancerous lesions must be able to get follow-up treatment, to prevent the development of cancer.

Table 10.10 - Comparison of Cryotherapy and LEEP

Indicators	Cryotherapy	LEEP
Effectiveness	86-95%*	91-98%*
Potential side effects	Watery discharge	Bleeding
Anaesthesia	None required	Local anaesthesia necessary
Tissue sample for histopathology	No	Yes
Power required	No	Yes
Relative cost	Low	High
Level of provider	Physicians and non-physicians	Mostly by physicians

LEEP = Loop Electrosurgical Excision Procedure, Source: ACCP

Among middle-income countries, Mexico was one of the earliest to introduce a public sector HPV immunisation program. Also in 2008, Panama became the first middle-income country to provide universal access to HPV vaccination. The availability of HPV vaccine through the Pan American Health Organisation's EPI Revolving Fund gives participating governments in Latin America and the Caribbean access to the HPV vaccine at significantly reduced prices (CCA Report card 2012: Progress in Cervical Cancer Prevention).

D. Cervical Cancer Screening Trends in USA

Cervical cancer used to be the leading cause of cancer death for women in the United States of America (USA). However, in the past 40 years,

the number of cases of cervical cancer and the number of deaths from cervical cancer have decreased significantly. This decline largely is the result of many women getting regular Pap tests, which can find pre cervical cancer stage before it turns into cancer.

In 2010 (the most recent year numbers are available for the USA)—

- 11,818 women in the United States were diagnosed with cervical cancer.*
- 3,939 women in the United States died from cervical cancer.*

*Incidence counts cover about 97% of the U.S. population; death counts cover about 100% of the U.S. population. Use caution when comparing incidence and death counts.

HPV-Associated Cervical Cancer Rates by Race and Ethnicity: USA

It is estimated that about 11,967 new cases of HPV-associated cervical cancer are diagnosed in the United States each year.* More black and Hispanic women get cervical cancer than women of other races or ethnicities, possibly because of decreased access to Pap testing or follow-up treatment.

*Note: This study used cancer registry data to estimate the amount of potentially HPV-associated cancer in the United States by examining cancer in parts of the body and cancer cell types that are more likely to be caused by HPV. Cancer registries do not collect data on the presence or absence of HPV in cancer tissue at the time of diagnosis. However, nearly all cervical cancers are caused by HPV.

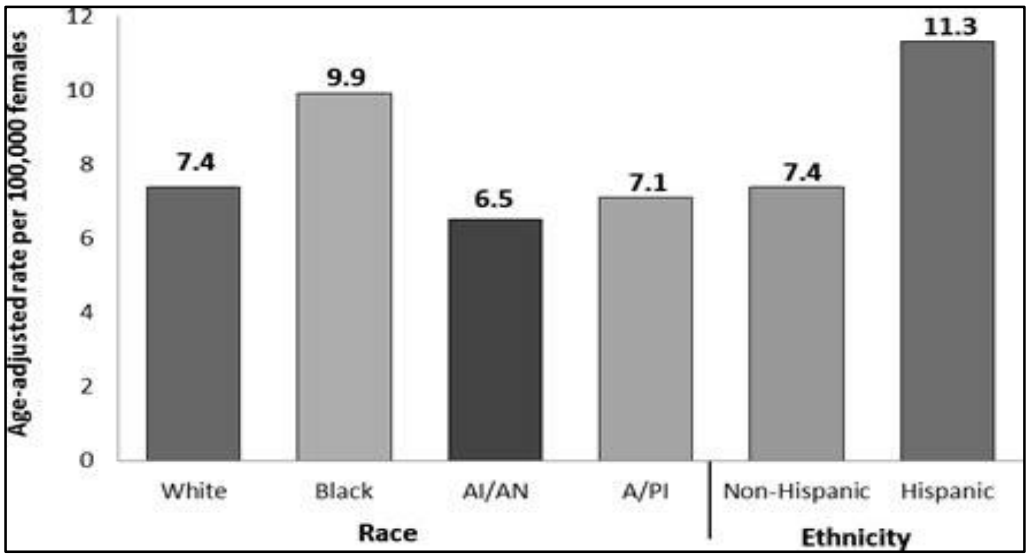


Figure 10.13 HPV-Associated Cervical Cancer Rates by Race and Ethnicity, USA, 2004–2008
Source: Centres for Disease Control and Prevention

The graph above shows age-adjusted incidence rates for cervical cancer in the United States during 2004–2008. "AI/AN" means American Indian/Alaska Native, and "A/PI" means Asian/Pacific Islander. The rates shown are the number of women who were diagnosed with cervical cancer for every 100,000 women. About 10 black women, 7 white women, 7 American Indian/Alaska Native women, and 7 Asian/Pacific Islander women were diagnosed with cervical cancer per 100,000 women. About 11 Hispanic women were diagnosed with cervical cancer per 100,000 women, compared to 7 non-Hispanic women.

Note: This graph was adapted from Centres for Disease Control and Prevention (CDC). Human papilloma virus–associated cancers—United States, 2004–2008. MMWR 2012; 61(15):258–261.

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Annexure 2: Abbreviations

Abbreviation	Expanded
AAO	Assistant Accounts Officer
AAR	Age Adjusted Incidence Rate
ABL	Activity Based Learning
ACC	Authorised Collection Centre
ADC	Assistant Drug Controller
ADPCs	Additional District Project Coordinators
AEEO	Assistant Elementary Education Officer
AHCT	Aarogyasri Health Care Trust
AHs	Area Hospitals
AIDS	Acquired Immuno-Deficiency Syndrome
ALM	Active Learning Method
AMCO	Associate Medical Coordinator (usually, a Technical Officer/Database Administrator)
ANM	Auxiliary Nurse Midwife
APL	Above Poverty Line
APO	Assistant Programme Officer
ASER	Annual Status of Education Reports, www.asercentre.org
ATM	Access to Medicines
ATM	Automated Teller Machine
AV	Audio-Visual
AWC	Anganwadi Centre
AWH	Anganwadi Helper
AWW	Anganwadi Worker
AY	Annual Year
BC	Business Correspondent
BCC	Behaviour Change Communication
BDO	Block Development Officers
BEO	Block Education Officer
BFL	Better Female Literacy
BICS	Basic Interpersonal Communication Skill
BISCORE	Bihar Society for Computerisation of Registration
BMO	Block Medical Officer
BOOT	Build, Own, Operate and Transfer
BOT	Build-Operate-Transfer
BPL	Below Poverty Line
BRC	Block Resource Centre
BRGF	Backward Regions Grant Fund
BRTE	Block Resource Teacher Educator
CAL	Computer Aided Learning
CBSE	Central Board of Secondary Education
CCA	Complementary Country Analysis
CCDU	Communication and Capacity Development Unit
CCE	Continuous and Comprehensive Evaluation
CCTV	Closed-Circuit Television
C-DAC	Centre for Development of Advanced Computing
CDHO	Chief District Health Officer
CDPO	Child Development Project Officer
CEO	Cluster Education Officer
CG	Chhattisgarh

CGMARKFED	Chhattisgarh State Co-operative Marketing Federation Ltd.
CGSCSC	Chhattisgarh State Civil Supplies Corporation
CHC	Community Health Centre
CIN	Carcinoma in situ (early stage cancer)
CMC	CMC Ltd.
CMCO	Chief Minister's Camp Office
CMHO	Chief Medical and Health Officer
CMO	Chief Medical Officer
CMR	Custom Milled Rice
CMS	Clinic Management System
CMS	CMS Computers Ltd.
CORD	Computerised Registration of Documents
COREPDS	Centralised Online Real-time Electronic Public Distribution System
CPT	Compensatory Plantation of Trees
CRC	Cluster Resource Centre
CSC	Citizen Service Centre
CSO	Central Statistical Organisation
CSO	Civil Society Organisation
CSR	Child Sex Ratio
CWSN	Children with Special Needs
DARPG	Department of Administrative Reforms and Public Grievances
DC	District Coordinator
DCCBs	District Consumer Cooperative Banks
DDC	Drug Distribution Centre
DDW	District Drug Warehouse
DEE	Department of Elementary Education
DEEO	District Elementary Education Officer
DEO	District Education Officer
DFWMB	District Family Welfare Medical Bureau
DFWMO	District Family Welfare Medical Officer
DGO	Diploma in Obstetrics and Gynaecology
DIET	District Institute of Education and Training
DISE	District Information System for Education
DLM	District Level Monitoring
DM	District Magistrate
DM	District Manager
DO	Delivery Order
DPEP	District Primary Education Programme
DPO	District Project Office/District Project Officer
DRDA	District Rural Development Agency
DTERT	Department of Teacher Education, Research & Training
DTL	Divisional Team Leader
EAP	Externally Aided Projects
EBB	Educationally Backward Block
EC	Electronic Clearance
ECIL	Electronics Corporation of India Limited
EdCil	Educational Consultants India Ltd.
EDL	Essential Drug List
EDUSAT	Education Satellite
EEL	Essential Equipment List
EF	Evaluation Framework
ELCOT	Electronic Corporation of Tamil Nadu Ltd.

EMI	Equated Monthly Installment
EMIS	Education Management Information System
EPM	Equipment Procurement and Maintenance
EQ	Evaluation Question
EVS	Environmental Studies
FCI	Food Corporation of India
FGD	Focused Group Discussion
FLR	Female Literacy Rate
FMCG	Fast Moving Consumer Goods
FOGSI	The Federation of Obstetric and Gynaecological Societies of India
FPS	Fair Price Shop
FY	Financial Year
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GIS	Geographic Information System
GOALS	Governance and Accelerated Livelihood Security
GoAP	Government of Andhra Pradesh
GoB	Government of Bihar
GOI	Government of India
GoMP	Government of Madhya Pradesh
GoR	Government of Rajasthan
GoTN	Government of Tamil Nadu
Govt.	Government
GP	Gram Panchayat
GPRS	General Packet Radio Service
GPS	Global Positioning System
GSDP	Gross State Domestic Product
GSM	Global System for Mobile communication
H&FW	Health and Family Welfare
HBCR	Hospital Based Cancer Registry
HDD	Hard Disk Drive
HIV	Human Immuno-deficiency Virus
HMIS	Health Management Information System
HMS	Hospital Management System
HMs	Head Masters
HO	Head Office
HOHB	Hardware On Hire Basis
HPV	Human Papilloma Virus
HQ	Headquarter
HRMS	Human Resource Management System
HUL	Hindustan Unilever Ltd.
IAP	Integrated Action Plan
IAS	Indian Administrative Service
IAY	Indira Awas Yojana
ICDS	Integrated Child Development Services, Scheme
ICMR	Indian Council of Medical Research
ICT	Information and Communication Technology
IEC	Information Education and Communication
IEC campaigns	Information, Education and Communication campaigns
IG	Inspector General
IIM	Indian Institute of Management
ILO	International Labour Organisation
IMA	Indian Medical Association

IMR	Infant Mortality Rate
IPC	Interpersonal Communication
IPD	In-Patient Department
IVRS	Interactive Voice Response System
JCSEE	Joint Committee on Standards for Education Evaluation
JFMCs	Joint Forest Management Committees
JMC	Jabalpur Municipal Corporation
KAVERI	Karnataka Valuation and e-Registration
KGBV	Kasturba Gandhi Balika Vidyalaya
KII	Key Informant Interviews
KMS	Kernel Mode Setting / Kernel Management System
KYR	Know Your Resident
LAMPS	Large Area Multi-Purpose Society
LFL	Lowest Female Literacy Levels
LLB	Low Level Blackboard
LLDS	Life Line Drug Store
LOCOST	Low Cost Standard Therapeutics
MAAR	Mean Age-Adjusted Incidence Rate
MCQ	Multiple Choice Question
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MHA	Ministry of Home Affairs, Govt. of India
MHRD	Ministry of Human Resource Development
Min. of Food, CS & CA	Ministry of Food, Civil Supplies and Consumer Affairs
MIS	Management Information System
MLA	Member of Legislative Assembly
MLS	Mill Loading Station
MMP	Mission Mode Project
MMR	Maternal Mortality Rate
MNC	Multinational Corporation
MNDY	Mukhyamantri Nishulk Dawa Yojana
MNGO	Mother NGO
MNRE	Ministry of New and Renewable Energy
MO	Medical Officer
MoCAFPD	Ministry of Consumer Affairs, Food and Public Distribution
MoFPI	Ministry of Food Processing Industries
MoLE	Ministry of Labour and Employment
MoPNG	Ministry of Petroleum and Natural Gas
MoRD	Ministry of Rural Development
MP	Madhya Pradesh
MP High Court	Madhya Pradesh High Court
MPLADS	Member of Parliament Local Area Development Scheme
MPs	Members of Parliament
MRP	Maximum Retail Price
MSME	Medium, Small and Micro Enterprises
MSP	Minimum Support Price
MTA	Mothers' Teachers' Association
MTP	Medical Termination of Pregnancy
MVR	Minimum Value Rate or Minimum Valuation Register
NAM	NWH Aarogyamithra
NBA	Nirmal Bharat Abhiyan
NCERT	National Council of Educational Research and Training

NCF	National Curriculum Framework
NCRP	National Cancer Registry Programme
NCTE	National Council for Teacher Education
NDDB	National Dairy Development Board
NeGP	National e-Governance Plan
NGO	Non-Governmental Organisation
NGP	Nirmal Gram Puraskar
NIC	National Informatics Centre
NIE	National Institute of Epidemiology
NLRMP	National Land Records Modernisation Programme
NREGA	National Rural Employment Guarantee Act
NRHM	National Rural Health Mission
NSC	National Savings Certificate
NSSO	National Sample Survey Organisation
NTL	Network Team Leader
NUEPA	National University of Educational Planning and Administration
NUHM	National Urban Health Mission
NWH	Network Hospital
OG	Obstetrics & Gynaecology
OPD	Out-Patient Department
OTC	Over-the-counter
P&G	Procter & Gamble
PACS	Primary Agricultural Cooperative Societies
PAM	PHC Aarogyamithra
PAN	Permanent Account Number
PAP test	Papanicolaou Test
PBCR	Population Based Cancer Registry
PC	Personal Computer
PC & PNDT	Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act, 1994
PDS	Public Distribution System
PDSN	Public Distribution System Network
PHC	Primary Health Centre
PHED	Public Health Engineering Department
PIC	Project Implementation Committee
PIL	Public-Interest Litigation
PLM	Programme Logic Model
PLPF	Public Land Protection Force
PMU	Project Management Unit
PoS	Point of Sale/Point of Service
PPP	Public-Private Partnership
PRIs	Panchayati Raj Institutions
PSDN	Public Distribution System Network
PTA	Parents' Teachers' Association
PTR	Pupil-Teacher Ratio
PWD	Public Works Department
PwDs	Persons with Disabilities
QC	Quality Control
RAMCO	Rajiv Aarogyasri Medical Coordinator
REC	Rural Education Centre
RES	Rural Engineering Service
RFID	Radio-frequency Identification
RHSDP	Rajasthan Health Systems Development Project

RIE	Regional Institute of Education
RKVY	Rashtriya Krishi Vikas Yojana
RMSC	Rajasthan Medical Services Corporation Ltd.
RoI	Return on Investment
RSBY	Rashtriya Swasthya Bima Yojana
RTE	Right to Education
RTI	Reproductive Tract Infection
RTI	Right to Information
RWA	Residents' Welfare Association
SABL	Simplified Activity Based Learning
SALM	Simplified Active Learning Method
SC	Scheduled Caste
SCERT TN	State Council of Educational Research and Training Tamil Nadu
SCORE	System for Computerised Registration
SDMC	School Development Management Committee
SGSY	Swarnajayanti Gram Swarozgar Yojana
SHCIL	Stock Holding Corporation of India Ltd.
SHG	Self Help Group
SIS	Sugarcane Information System
SKU	Stock Keeping Unit
SLM	Self-Learning Material
SLMC	State Level Monitoring Committee
SMART	Specific, Measurable, Authentic, Realistic and Time-bound
SMS	Short Messaging Service
SN	Sector Nurse
SPD	State Project Director
SPO	State Project Office
SPV	Special Purpose Vehicle
SRO	Sub Registrar Office
SSA	Sarva Shiksha Abhiyan
ST	Scheduled Tribe
STG	Standard Treatment Guideline
STI	Sexually Transmitted Infection
STPI	Software Technology Parks of India
TCS	Tata Consultancy Services Ltd.
THE	Total Health Expenditure
TLM	Teaching-Learning Material
TNCSC	Tamil Nadu Civil Supplies Corporation
TNHSP	Tamil Nadu Health Systems Project
TNMSC	Tamil Nadu Medical Services Corporation
TNSSA	Tamil Nadu Sarva Shiksha Abhiyan
TPDS	Targeted Public Distribution System
TSC	Total Sanitation Campaign
UEE	Universalisation of Elementary Education
UHN	Urban Health Nurse
UID	Unique Identification Number
UIDAI	Unique Identification Authority of India
ULB	Urban Local Body
UN	United Nations
UNICEF	United Nations Children's Fund
UP	Uttar Pradesh
US FDA	U S Food and Drug Administration

USG	Ultra Sonography
UT	Union Territory
VEC	Village Education Committee
VIA	Visual Inspection Using Acetic Acid
VILI	Visual Inspection with Lugol's Iodine
VLV	Village Level Volunteer
VP	Village Panchayat
WBM	Water Bound Macadam
WHO	World Health Organisation
WTL	Wipro Technologies Ltd.
ZMO	Zonal Medical Officer
ZP	Zila Panchayat

Annexure 3: Operational methodology

3.1 Key Activities and Outcomes of the Initiation Phase

3.1.1 Activities Performed

- Conducted project kick-off meeting between all DARPG and KPMG team members, including Subject Matter Experts (SMEs)
- Mobilisation of project resources and responsibilities assigned
- Collected literature and contact details for each initiative

3.1.2 Outcomes

- Aligned all stakeholders to the objective of the project
- Developed a detailed Work Plan for the project
- Defined a list of data sources for collecting primary and secondary data

3.2 Key Activities and Outcomes of the Data Gathering Phase

3.2.1 Key Activities

- Secondary research for all ten initiatives was completed based on reports published by DARPG and external literature, journals, news reports, Census data etc. An estimate of the sample size and survey plan was done for each initiative. The sample size was defined considering the mix of population and areas (rural and urban) for each of the ten initiatives based on purposive sampling

Discussion guides/schedules for each initiative were created and appointments were fixed with government officials and other stakeholders in the seven states for ten shortlisted initiatives.

3.2.2 Techniques of Data Collection

Method of Data Collection for Qualitative Interviews

- Face-to-face interviews with key stakeholders for each of the ten initiatives
- Appropriately formulated discussion guides/schedules to conduct interviews and seek relevant insights into the project functioning, challenges faced and future requirements, plans and goals

Method of Data Collection for Quantitative/Qualitative Interviews

- A mix of face-to-face interviews and focused group discussions (FGDs) with identified beneficiaries and a few non-beneficiaries, if required, depending on the needs of each project
- An appropriately formulated discussion guide/schedule to bring out the key qualitative concerns of the stakeholders and target population groups

Types of Survey Instruments

- Discussion guides/schedules for Key Informant Interviews (KIIs)
- Schedules/questionnaires for interviews with beneficiaries and non-beneficiaries.

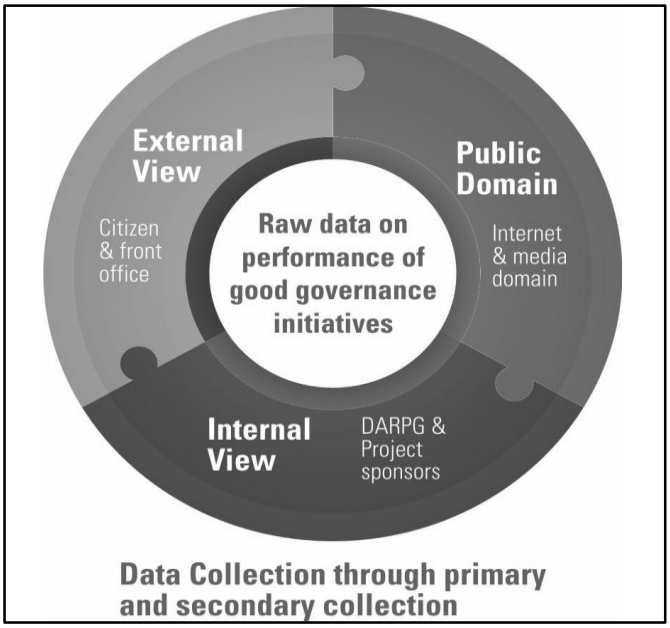

Figure A3.1 – Study data sources

Sources of Information

Source of Information	Assumptions
• Secondary data sources • Evaluation study reports • Focus Group Discussions • Key informant interviews with beneficiaries and officials at different levels	• Availability of data with project authorities • Concerned officials agree for discussion • Availability of Project documentation • DARPG would assist in facilitating interviews with stakeholders.

3.3 Key Steps, Activities and Outcomes of Data Analysis Phase

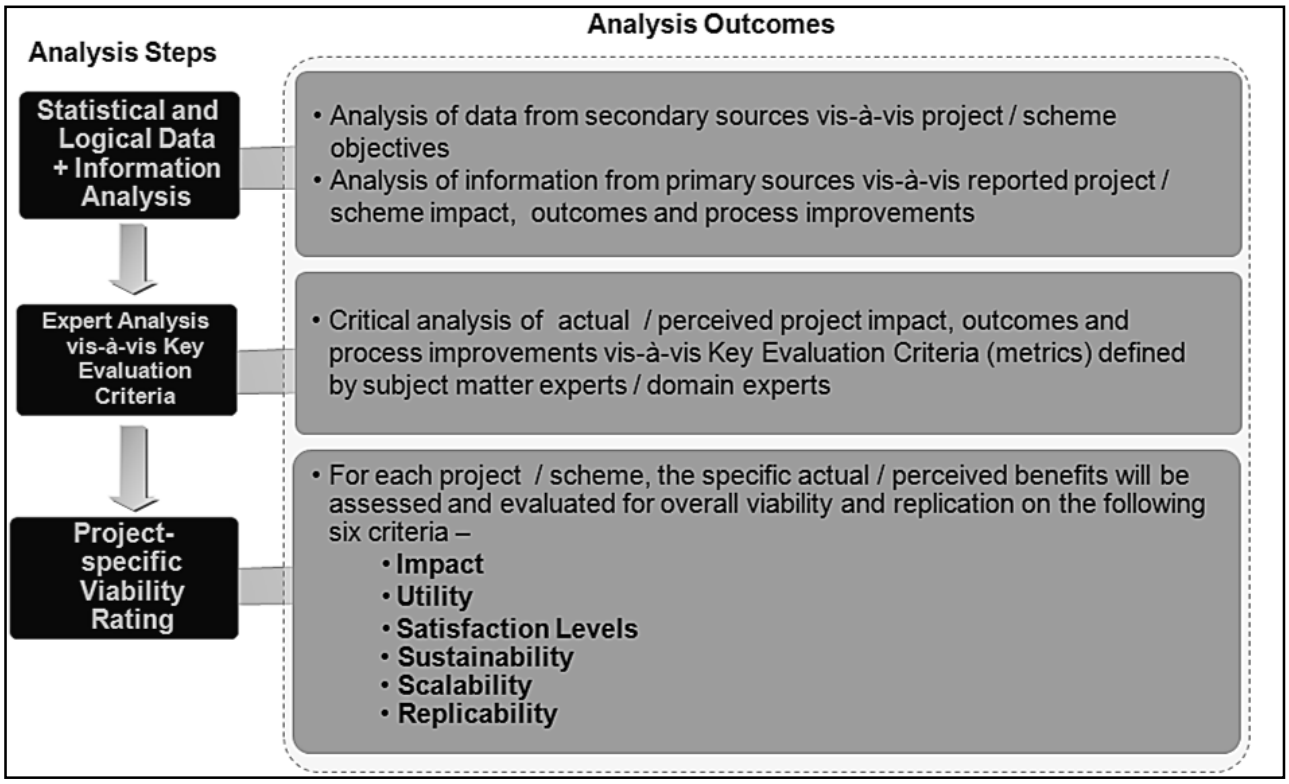

Figure A3.2 - Activities and Outcomes

3.4 Key Activities and Outcomes for Implementation

Activities to Develop a Model Practice

- Prioritise the candidate initiatives
- Assess and check the viability of the candidate to become a model practice
- Minimise the influence of region-specific data on the candidate
- Capture the successes of the initiative
- Recommend possible areas of improvement
- Package the model practice as a best practice that can be replicated and sustained based upon availability and effective deployment of required resources

Activities to Prepare Implementation Strategy

- Assess the resources required by a model practice for replication based upon population size, infrastructure (including technology), personnel, ethnic diversity, geographic spread/variation etc.
- Recommend and check if model practice can meet an on-going need in another state
- Assess if sufficient funding will be provided by the Central Govt. or the state
- Evaluate factors that could facilitate or impede the implementation of model practices in new areas – e.g. literacy rate, population size, PPP, existing projects

These two activities will combine to give the following output

- Shortlist of evaluated initiatives that can evolve as model practices
- Recommendations to replicate model practices in other districts/states/regions of the country

Annexure 4: Evaluation Framework Employed

In consultation with the DARPG, it was decided to evaluate each of the ten good governance initiatives in this study based on six factors – **Impact, Utility, User Satisfaction, Sustainability, Scalability** and **Replicability**.

Parameters	Measurement Criteria
Impact	• Social impact - Reduction in resources invested, number of people trained, increase in the number of transactions made or products sold, improvement in health and life • Economic impact - Increased income of targeted population, Employment Generation, Cost saving to government in delivering services • Increased visibility to citizens on Government processing, Improvement in Citizen Participation
User Satisfaction	• Quality of Service • Accessibility of services • Ease of Service Delivery • 24X7 Services • Grievance Handling
Sustainability	• Use of existing resources and funds • Period of continuous functioning of the project after launch without showing symptoms of decline through reduced number of transactions • Capacity Building
Scalability	• Number of implementing agencies, number of steps required to deliver a service, number of approvals required to deliver a service, • Number of behaviour changes required for the implementation team, the participants, and the leadership capacity of the implementing agency
Replicability	• Push factors - Need of the Administration (State, DARPG), Part of a government directive (MMP or NeGP) • Pull factors - Level of citizen empowerment, Level of citizen participation, accountability, transparency, knowledge sharing • Enablers - Population Size , Literacy Rate, Augmentation of already running initiatives
Utility	• Citizen centricity • Efficiency of the process /scheme • Effectiveness of scheme