



STORIES OF CHANGE

2020-2021

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VOLUME II

Case Studies on
Development Action and Impact

Azim Premji University Publication

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Stories of Change: Case Study Challenge

Azim Premji University

Modern India has a history of a vibrant and active social sector. Many local development organisations, community organizations, social movements and non-governmental organisations populate the space of social action. Such organisations imagine a different future and plan and implement social interventions at different scales, many of which have lasting impact on the lives of people and society. However, their efforts and, more importantly, the learning from these initiatives remains largely unknown not only in the public sphere but also in the worlds of ‘development practice’ and ‘development education’. This shortfall impedes the process of learning and growth across interventions, organizations and time.

While most social sector organizations acknowledge this deficiency, they find themselves strapped for time and motivation to embark on such efforts. Writing with a sense of reflection and self-analysis which goes beyond mere documentation and creates a platform for learning requires time and space. As a result, their writing is usually limited to documentation captured in grant proposals or project updates or ‘good practices’ literature with inadequate focus on capturing the nuances, boundaries and limitations of action.

Recognizing this need, the Azim Premji University launched ‘Stories of Change: Case Study Challenge’ in 2018 with the objective of encouraging social sector organisations to invest in developing a grounded knowledge base for the sector. In the inaugural year of this challenge (2018 – 19) we received 95 case study submissions, covering a large range of thematic areas.

In the second round of the initiative (2019-20), we received 68 submissions around interventions such as waste management, conservation, livelihoods, sustainable agriculture, reform and rehabilitation, gender, education and teacher development, land rights, child nutrition and community health. The target groups included parents of girl child, prisoners, urban communities, teachers, adivasis, marginal farmers, children, women, youth, among others. Through a two-stage evaluation process, the university selected 3 winners

and 3 special mentions for the 2019-20 Stories of Change Challenge. Together with these, we have selected four additional notable submissions for publication in this compendium. This is the second volume of 'Stories of Change: Case Studies on Development Action and Impact'. [Readers can download the volume I of the compendium using the link https://azimpremjiuniversity.edu.in/SitePages/pdf/Stories-of-Change_Brochure-2019-20.pdf]

We hope that educators and practitioners alike find these case studies valuable for influencing policy, building capacity of practitioners, documenting good practices for future learners, providing space to practitioners in teaching, collaborative research and even incubating new ideas for social change.



Acknowledgements

This compendium is the result of Azim Premji University's 2019 – 20 'Stories of Change: Case Study Challenge'. We thank all organizations who submitted case studies based on their work. We deeply appreciate the time and effort they have spent in developing these cases.

We had a two-stage evaluation process to select the ten submissions included in this compendium. We appreciate the 19 colleagues from Azim Premji Foundation who agreed to review all the 68 submissions and shortlist the best ones. Their names, in alphabetical order, are: Anchal Chomal; Anjor Bhaskar; Annapurna Neti; Arima Mishra; Aravindhan Nagarajan; Ashok Sircar; Chiranjib Sen; Geetisha Dasgupta; Malini Bhattacharjee; Manjunath SV; Nazrul Haque; Puja Guha; Rahul Mukhopadhyay; Rajesh Joseph; Richa Govil; Saswati Paik; Sham Kashyap; Shreelata Rao Seshadri and Sreekanth Sreedharan.

Multiple individuals from the ten organizations selected for this compendium worked closely with the University team to arrive at the final print-ready versions of their cases. All of them took out time from their grassroots work and engaged seriously in this effort. This compendium is a reality only because of each of those individuals. Sanjana Santosh, a former student of M.A. Development program at University, worked with 3 shortlisted organizations to rewrite the cases and make them ready for publishing. We are also grateful to Malini Sood, the copy editor, for her careful language editing.

Throughout the entire initiative – from publicity and outreach to the final design and page layout of this compendium – the University Communication Team supported every step. Thank you, Sachin Mulay, Nanit BS and Sneha Suresh for making this happen.

This compendium would not have been possible without support from Anurag Behar, Vice Chancellor of the University, and Manoj P., Registrar of the University. Manoj's enthusiasm and encouragement led the core team to imagine the Case Study Challenge at a bigger scale than we had originally earlier. We want to thank Anurag and Manoj for their continued support.

We hope this compendium will reach the intended audience – educators, researchers, practitioners, policy makers as well as students of development – and in time will be regarded as a persuasive and authentic account of the Indian social impact ecosystem.

Readers can write to us at case.study@apu.edu.in with their valuable comments, suggestions and reviews so that we can improve our next editions. Thank you for reading and look forward to hear from you.



Setting the Context

I. Case Studies on Sustainability

The COVID-19 pandemic is an eyeopener to the grave sustainability crisis that humanity has deeply plunged into. The imperative to have a shared vision for both society and planet is now being realized stronger than ever. Social- ecological repercussions of business- as-usual development trajectories have been confronting us in myriad ways even before the pandemic. Challenges ranging from recurring climate impacts and natural disasters, vanishing forests and biodiversity, dwindling water resources and impoverished soils to growing poverty, hunger and social inequality are symptomatic of declining human and planetary wellbeing.

Responses to these challenges have been largely piecemeal and deficient. In place of systemic approaches that acknowledge the interdependencies of human wellbeing on ecological and social environments, a linear and reductionist framing of these linkages, overlooking the complex feedbacks has been conventionally adopted. Many interventions are designed and implemented as ‘one size fits all’ approaches with scant attention paid to the local context and indigenous knowledge. Technological optimism has often led to transposing inappropriate solutions from elsewhere resulting in perverse outcomes. It is in this context that the three stories of changes documented here bring to the fore some of our most pressing sustainability challenges- urban solid waste management, sustenance of traditional biodiversity linked livelihoods and building resilience in a climate challenged world- and demonstrate alternative possibilities to respond to these issues.

The intervention of Civic Response Team (CRT) based out of Aurangabad in Maharashtra is a story of spectacular transformation in the waste management sector. It is projected that by 2031 urban centers in India will generate 165 million tonnes of solid waste which would need 1175 hectare per year of landfill space. CRT developed and implemented the BORTRAM process as a sustainable solid waste management solution, whose impact has now reached 14 towns and villages, training 17 lakh people in waste segregation at source and achieving a material recovery potential of 3.4 lakh tonnes. The intervention generated safe and dignified livelihoods for around 2188 waste pickers. Partnerships with local government bodies, private companies,

citizens' groups and people's representatives, place-based research to back the solutions and conscientious decision making mindful of the long-term impacts on stakeholders have been keys to the success of CRT's strategy. This case highlights the potential of integrated and collaborative approaches incorporating diverse stakeholder groups, in contrast with centralized waste management solutions such as incineration that are now widely promoted by urban planners and policy makers.

The second case study documents Sahjeevan's work in conserving the camel breeds and traditional pastoral livelihoods of Kutch. Pastoral nomadism, a low ecological-footprint livelihood option, encompassing unique knowledge of caring for herd animals and local ecology is increasingly threatened by varied factors such as climate variability, degradation of grassland habitats and changes in land tenure, agricultural practices and traditional institutions. In Kutch, home to the distinct camel breeds - Kharai and Kutchi, mindless industrialization, vanishing grazing commons and the spread of the invasive species *Prosopis juliflora* further exacerbate these risks. Consequently, the population of native camel breeds in Kutch plummeted in the past decades.

Realizing that the conservation of the unique camel breeds of Kutch is closely dependent on sustainable income generation for the herders who are the 'keepers of genes', Sahjeevan spearheaded the formation of multiple pastoral community organizations, registration of climate-resistant pastoral breeds and diversification of livelihood opportunities for pastoralists. Sahjeevan's engagement is multifaceted, ranging from marketing of camel milk to litigation and advocacy for upholding pastoral rights, participatory conservation and ecological regeneration of traditional grazing habitats and fodder tree species. The impacts have been tremendous, as manifested in the increasing number of camels and herders in Kutch in the past three years and return of youngsters of pastoral communities to take up herding. This story vividly portrays the potential of synergizing biodiversity-livelihood linkages and a holistic approach leading to all-round rejuvenation of diversity at three levels: ecosystem, species and genetic - all crucial to sustainable pastoral livelihoods.

The third story of change is set in remote tribal areas of Andhra Pradesh where LAYA has been striving to build community resilience in a climate changing environment. LAYA's approach is three pronged: promoting



sustainable farming practices for food and income security, devising climate friendly and low carbon technologies to meet cooking, clean potable water and irrigation needs and imparting climate change education to build local capacities for adaptation. The focus has been on participatory and collaborative responses, involving communities directly in all stages from needs assessments and feasibility studies to the installation and operation of the technologies. This ensures that the interventions are in tune with community needs and are locally relevant and manageable.

These three stories of change present exemplary local responses to mounting global perils of garbage crisis, climate change, biodiversity depletion, and indigenous livelihood and knowledge loss. The challenge going forward is not to upscale, but to ‘outscale’ by learning from successes and evolving interventions customized for diverse social ecologies of our vast nation. If ‘vocal for local’ is the true motto of post-COVID rebuilding, it is high time to realign our sustainability imaginations to recognize appropriate technologies, community centered pathways and alternate futures, as beautifully illustrated in these three stories.

I. A: Lessons from Solid Waste Management in Marathwada, Maharashtra

Civic Response Team¹

In October 2019, a team from Radio Mirchi visited the material recovery facility (MRF) established by CRT² in Zone 6 of Aurangabad city to cover the story of the recently launched TakaTak Chaiwala, a chaiwala (tea maker) making chai on a biogas-fuelled stove and selling it in exchange for three pieces of waste plastic. The waste-picker interviewed by the team said, “This is my workplace. I have a team and a support system here. The play-space for my children helps me work without tension as to their whereabouts. I feel safe and respected as I come to work every day.” After interviewing the team at the MRF, the radio jockey (RJ) ended the segment by urging the residents of Aurangabad city to visit the MRF: “If you visit this facility, you will not feel that there is anything dirty about waste. The people and [the] activities going on here will make you feel like you are in a place where work gets done, waste gets managed, and where there is respect and fun.”

Redefining waste and waste management in as many ways as possible has been a crucial part of CRT’s work in SWM in the past five years. This includes how residents perceive waste, how municipal sanitation staff perceive and practise their jobs, how informal-sector waste-pickers are treated, and the relationships between the various stakeholders in the SWM of a city.

1 Contributed by Gauri Mirashi and Natasha Zarine

2 The Civic Response Team (CRT) and the Centre for Applied Research and People’s Engagement (CARPE) are sister concerns that work with a hybrid model in the civic and environmental sectors in Aurangabad. The founders of both organizations are Natasha Zarine and Gauri Mirashi. For ease of communication, this case study only uses CRT to refer to the work done by both organizations.



Redefining waste and waste management in as many ways as possible has been a crucial part of CRT's work in SWM in the past five years. This includes how residents perceive waste, how municipal sanitation staff perceive and practise their jobs, how informal-sector waste-pickers are treated, and the relationships between the various stakeholders in the SWM of a city. The six MRFs that CRT has established in the Marathwada region of Maharashtra give a tangible and visual form to this impact. When a reporter refers to a SWM facility as a 'cool hangout', it indicates a paradigm shift in attitudes, perceptions, and behaviours. Behind each of these MRFs is an effectively designed process, BOTRAM, that allows cities, towns, and villages to overhaul their SWM systems in a cost-effective, efficient, and timely manner.

Figure 1 shows the impact of CRT's work over the years.



Figure 1: Impact highlights

1. Municipal Solid Waste Management

Municipal solid waste, as defined in the Municipal Solid Wastes (Management and Handling) Rules, 2000 includes *commercial and residential wastes generated in municipal or notified areas in either solid or semi-solid form excluding industrial hazardous wastes but including treated biomedical wastes*. MSW includes different kinds of wastes:

1. Biodegradable waste (food waste, garden waste)
2. Recyclable waste (paper, plastic, cardboard, metal)
3. Electronic waste (electronic goods and parts)
4. Biomedical/sanitary waste (diapers, sanitary pads, used syringes, expired medicines, blood-stained cotton/cloth, etc.)
5. Hazardous waste (paint boxes, broken thermometers, bulbs, etc.)
6. Toxic waste (fungicides, pesticides, fertilizers, etc.)

7. Construction and demolition waste (sand, rubble, etc.)
8. Reject waste (non-recyclable plastics, etc.)

Municipal solid waste management (MSWM) is the process of collecting, transporting, storing, and disposing of waste in an economically, environmentally, and socially safe manner. MSWM generally consists of the processes of waste collection, transportation, and disposal. Street sweeping and drain-cleaning are also part of MSWM. However, as the quantities of waste have increased, and consequently the negative impact on urban environments has also increased, attention has shifted towards integrated and sustainable MSWM that adds the processes of waste reduction, source segregation, resource recovery, and scientific treatment to the traditional processes of waste collection, transportation, and disposal. This shift towards sustainable MSWM also requires us to identify many more stakeholders in the process besides the local government. Residents, business owners, informal recyclers, and manufacturers are also recognized as part of the waste management process.

The Swachh Bharat Mission, Swachh Bharat Abhiyan, or Clean India Mission, is a national campaign initiated by the [Government of India](#) in 2014 to eliminate [open defecation](#) and improve (SWM). It has created significant awareness of and movement around MSWM, especially in urban areas. The task of creating a system of SWM that is simultaneously equitable, efficient, safe, and sustainable (environmentally and economically) therefore is a high priority for cities, towns, and villages. An increasing number of private-sector organizations are getting into the SWM sector to offer solutions ranging from technology for waste treatment to safeguarding the rights of informal-sector waste-pickers.

2. The Evolution of CRT

CRT was founded by Natasha Zarine and Gauri Mirashi in 2014 (prior to the launch of the Swachh Bharat Mission) as a think tank for designing and implementing *research-driven* solutions to civic and environmental challenges faced by Aurangabad city.

SWM was the first sector they chose to study as it was the most visible of Aurangabad's challenges. The main goal was to observe and document



the existing system, identify the gaps, study best practices from across the country, and bring in the right partners to fill the gaps.

From shadowing municipal sanitation staff to navigating the dirt roads of the city's Naregaon dumpsite and negotiating the complex hierarchies of the municipal government, Natasha and Gauri studied waste as it travelled from home to dumpsite. Natasha travelled extensively across Bangalore, Hyderabad, Warangal, Pune, Mumbai, Delhi, Palakkad, Patoda, that is, any urban area, big or small, that had something to teach the CRT team about MSWM. They even invited experts and resource-persons from outside Aurangabad to advise, propose, recommend, consult, and lead on an initiative to transform the SWM systems of Aurangabad.

After a couple of months, Natasha and Gauri wrote an action report highlighting all the gaps and making recommendations about what needed to be done to resolve this issue and went to submit it to the then Municipal Commissioner, Dr Harshadeep Kamble.

Dr Kamble responded, "This is a fine report, but what am I to do with it? How am I to implement it? Can you do a pilot? Can you implement it?" The organization that the Municipal Commissioner's office brought in from Hyderabad did not have the bandwidth to stay in Aurangabad for longer than six months, and just the initial meetings with the Aurangabad Municipal Corporation (AMC) spanned two months. CRT was faced with answering the question of **who** would lead the initiatives outlined in their report.

2.1 The Decision to Lead (Adaptive Leadership)

"This is where we realized that to drive change would require the coupling of our research abilities with a keen adaptive leadership to design and execute pilots, and to adapt and modify solutions, along with continuous impact assessment to drive innovation. If not us, then who? If not now, then when?" says Gauri Mirashi. With this decision, CRT invested its resources in developing its expertise and skill in the MSWM sector, developing a team that could deliver solutions on the ground and that could continuously collect data from the execution of pilots and projects to contribute to the research and knowledge in the sector. SWM remained the focus of the organization from 2015 to 2017. Over these two years, CRT developed the BOTRAM process and

built a team of 30 individuals who could implement this process across diverse geographies. With this process and with its team in place, CRT converted the adaptive challenge of SWM into a technical challenge, offering customizable and contextual solutions based on the BOTRAM framework.

2.2 Research, Pilot, and Implementation

Building on the research already undertaken, Natasha and Gauri set about meeting organizations such as Swach in Pune, and Hasiru Dala and SWM Round Table, both in Bangalore, this time with the additional aim of understanding the practical aspects of implementation. Simultaneously, they started the search for a pilot location. They first met the Sindhi Colony women's group (mahila mandal), consisting of women living in the colony and actively engaged in organizing meetings to discuss important issues and to mark events and celebrations, at a cleanliness drive organized by their children's school. At the event, Natasha and Gauri held several conversations about the waste management problems of Aurangabad city in general and of Sindhi Colony in particular. The willingness of the women's group to participate in finding and implementing a workable solution was apparent, and they set off to survey the colony the same day. Sindhi Colony had one safai karamchari, equipped with a small handcart. He would collect waste from as many households as possible in a day and dump it at a ground in a corner of the colony. A JCB (an earthmoving machine made by the J. C. Bamford (JCB) company) and a tractor would come once a week to pick up the waste from the ground and transport it to the city's Naregaon dumpsite.

A baseline assessment of the colony highlighted the following systemic challenges:

1. No fixed route for collection of waste and garbage
2. Inadequate and inappropriate collection equipment
3. Lack of awareness among residents about what happens to their waste after it is collected
4. Unhygienic and undignified working conditions for people working formally (one municipal staff for collection and two for sweeping) and informally (two waste-pickers) to manage waste
5. Lack of awareness about good practices such as source segregation, composting, etc.



Working closely with the women's group of Sindhi Colony, CRT

- designed a new cart that would facilitate the efficient collection of three-way source-segregated waste (shown in Figure 2)
- created a route map that minimized effort for the collection staff while at the same time ensuring regular collection from each household in the area (redesigned root map shown in Figure 2)
- executed an awareness campaign among all residents
- brought on board a waste-picker to manage dry waste
- brought on board a piggery owner to take away organic waste
- collected data at each stage to reflect progress, impact, stakeholder feedback, and challenges

Figure 2 depicts the before and after scenarios of waste collection in Sindhi Colony in Aurangabad.

After a rocky first week (when no one seemed to even notice that something new was happening), the team started receiving segregated waste from over 85 per cent of the households in the second week. The open dumps gradually disappeared, and change was visible.



Figure 2: Changes in the route and the collection vehicle made by CRT enabled regular collection of waste in Sindhi Colony

By the end of the pilot, it became clear to CRT that any effective waste management system needed to be driven by the following core principles:

1. Dignity of labour
2. Maximum resource recovery
3. Stakeholder integration
4. Three-way source segregation of waste (organic waste; dry waste; household biomedical and hazardous waste)

5. Data collection throughout the process

The coupling of research with field execution and data collection worked well to raise critical questions and to define the way forward. For example, while CRT executed a well-researched but basic pit-composting methodology to treat organic waste, the residents who had accepted a large garbage dump in front of their homes rose up in protest against the composting. Although the ground looked much cleaner, the notion that with composting the waste would ‘remain there forever’, as opposed to being picked up by a JCB to be taken to Naregaon, led to conflict. This led CRT to experiment with animal herders (pigs, cattle, goats) as organic waste-treatment partners. The pilot allowed for quick testing and for the rethinking of ideas and redesigning of interventions. Research at CRT is now always an ongoing process, with data from field implementation adding immense value to the BOTRAM process. Even a baseline research study is coupled with pilot implementation, and followed by impact assessment, to ensure that any recommendations made are based on a strong foundation. With each new project, data-based insights lead to the design of new innovations which are tested and replicated across projects if found to be beneficial or appropriate.

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2.3 Scaling Up

Based on the outcome of the pilot in Sindhi Colony and the attention it received in local newspapers, CRT was invited by two local councillors to implement similar MSWM systems in their wards. These experiences of working with the political leaders of two very different areas also added new layers of understanding to CRT’s work. The two wards were drastically different: one with a population of ~10,000 and equipped with 36 safai karamcharis and five collection vehicles while the other with a population of ~20,000 and equipped with six safai karamcharis and two collection vehicles. CRT realized that by optimizing existing resources, regular collection could still be provided in the most diverse and under-served of areas. Having successfully implemented projects in both these different wards and under



widely diverse circumstances gave CRT the confidence that the SWM model they were developing was replicable. Armed with this confidence, CRT responded positively to CIDCO's request for assistance in establishing a SWM system in its Waluj township with a population of 35,000. This was CRT's first project with a government body. Phase one was supported through corporate social responsibility (CSR) funds and phase two was funded by CIDCO itself. Subsequently, CRT worked with the AMC and with Bajaj Auto (the CSR partner) on a project in Aurangabad city (population ~ 13 lakh). The Vaijapur, Ratnagiri, and Nilanga municipalities engaged CRT directly for the implementation of BOTRAM. Bajaj Auto also funded the implementation of BOTRAM in Gangapur and Lasur Station, thus helping us to test the process in peri-urban and rural geographies. In consultation with [McKinsey.org](https://www.mckinsey.com), CRT has also implemented the BOTRAM process in Denpasar, Bali, Indonesia and in Barrio 31, Buenos Aires, Argentina.

While a team of two was sufficient to address the problems of a colony of 250 households, CRT could, of course, not scale the programme proportionally as it took on 6,000 households or 2.5 lakh households. The focus needed to be on empowering the municipal sanitation staff to become trainers and ambassadors of the new and improved SWM systems. This was essential from the sustainability point of view. One of the early errors made by CRT in its work in Sindhi Colony was to assume complete charge of the programme to the extent that residents would call Natasha or Gauri at 6.30 a.m. if the safai karamchari did not arrive, instead of calling the municipal supervisor or the sanitation inspector. This blurring of boundaries in partnerships and lack of clarity about roles and responsibilities builds instability into the foundation of the programme. Henceforth, CRT has shifted its focus on enabling and empowering safai karamcharis, supervisors, and sanitation inspectors to perform their assigned roles and to exercise their capabilities on their own.

In 2020, CRT is focused on scaling the BOTRAM process by equipping more municipal teams and entrepreneurs with the knowledge and skill set required to implement it effectively.

2.4 Partnerships

During the pilot, Natasha and Gauri experienced first-hand almost every activity related to waste management—pushing a collection cart, sweeping, guiding a JCB, getting into the composting pit to turn organic waste,

collaborating with as well as confronting residents, etc.—and this experience provided invaluable insights to the design, scope, and focus of the study they conducted. For example, residents often complained that the municipal staff hired for sweeping could always be seen sitting under trees and chatting, instead of sweeping, that is, doing their job. To be able to decide on the targets or routes for these staff members, Natasha and Gauri tried their hand at sweeping, only to find that they could not continue sweeping for longer than 20 minutes at a stretch.

In addition, the visual impact of the activity was negligible, often negated by factors like dispersal of waste by strong wind, careless dumping of waste by residents, and scattering of waste by stray animals. Responding to this situation, Natasha and Gauri developed a system that was a combination of sweeping and picking waste, thus reducing the effort required as well as increasing the visual impact of the activity. Other observations and insights included the tremendous difference that even a 2 degree gradient can make when pushing a cart loaded with 400 kg of waste up a slope; the diversity of attitudes towards the sanitation staff exhibited by residents; and the complexity of managing and supervising permanent, contract, and badli (a person working in place of a permanent employee of the municipality) workers in the municipal sanitation team. In addition, through their intensive interactions with local councillors and sanitation inspectors, Natasha and Gauri also gained insights into the challenges faced at the managerial level: the frequency of phone calls from residents lodging complaints at odd hours (at 5.00 a.m. and at 11.00 p.m.); the challenge of keeping a conversation focused on SWM without letting other extraneous issues intrude (concerning, say, water supply, traffic management, and sound pollution); the lack of public awareness about the role and jurisdiction of a councillor, sanitation inspector, and other functionaries). Early on, Natasha and Gauri developed a nuanced understanding of each stakeholder in the waste management system, which has allowed them to harness the strengths and to mitigate the challenges posed by each stakeholder, thus facilitating the forging of strategic partnerships. It has also allowed their solutions to remain stakeholder-agnostic while trying to maximize the benefits for as many stakeholders as possible. This, in turn, has enabled the forging of diverse partnerships because CRT is not viewed as being ‘for’ or ‘against’ any specific group. The focus of the solutions remains the delivery of effective, sustainable, and equitable SWM systems. Partners that can contribute to the solution include waste-pickers,



municipal leadership, companies investing CSR in SWM, large and small contractors, resident groups, and educational institutions. The number of stakeholders adds to the complexity of the solution, but it also ensures the stability and sustainability of the initiative.

The Aurangabad project lasted three and a half years and during this time it witnessed the transfer of seven municipal commissioners and 13 SWM In-Charges (interim additional charge positions included). When a key stakeholder like a commissioner is changed, the project faces a setback. During such phases, the strength of one's partnerships with other stakeholders—resident groups, municipal field sanitation staff, political leadership, mechanical section of the AMC, etc.—can help one cope with the uncertainty that comes with a change in leadership. Similarly, when residents oppose the location of composting sites, or refuse to segregate waste, or threaten the sanitation team that demands segregation, the presence of a zone officer or a commissioner on the ground can help resolve matters promptly and effectively.

The organizing of events, donation drives, and celebrations for municipal staff and waste-pickers by resident groups and schools promotes confidence and pride in the work being done and creates a strong sense of community and camaraderie. For example, the students of Stepping Stones High School in Aurangabad completed a week-long project, starting with spending a day with safai karamcharis and hearing about their experiences and lives. Inspired by these interactions, the students returned a couple of days later with scrapbooks and gifted them to the safai karamcharis. The week ended with a celebration in a local garden where the students raised funds to purchase utensils for each karamchari and hosted a lunch for them. This event provided a great platform for the recognition of the work of the safai karamcharis while also offering the students an opportunity to learn (everything from empathy to observation skills, from event planning to fundraising).

CRT's experience in SWM indicates that companies investing in CSR projects and government bodies can complement each other perfectly.

A good understanding of the strengths and weaknesses of all the partners involved in a project also adds to the efficiency of resource utilization. For example, CRT's experience in SWM indicates that companies investing in CSR projects and government bodies can complement each other perfectly. CSR

projects offer flexibility for experimentation and innovation, and government involvement means the availability of infrastructure for scaling proven models. While government partners may be best suited for investment in infrastructure, or may already have access to the infrastructure needed, CSR may be better utilized for the execution of pilots and for the design of impact assessment.

2.5 BOTRAM Explained

The BOTRAM process has been developed, and continues to evolve, through the SWM projects implemented by CRT. Below is a brief explanation.

- 1. Baseline assessment:** Understanding the context, assessing the existing SWM practices, and tapping the available resources (land, equipment, human resources, community influencers, dry waste management facility, etc.) to guide all planning exercises and decision-making relating to the project.
- 2. On-boarding and orientation:** Bringing the political and bureaucratic leadership together at one workshop to create a vision statement for SWM in the city. This ensures the effective channelling of efforts in one direction.
- 3. Training and route mapping:** Ensuring that the municipal team (or the team of the contractor appointed by the municipality) is fully equipped to provide effective 100 percent doorstep collection of source-segregated waste. We have developed effective training modules for safai karamcharis, sanitation supervisors and inspectors, and informal-sector waste-pickers that cover the technical aspects of waste management and soft skills such as public speaking, reporting, teamwork, etc.
- 4. Resource recovery:** Establishing MRFs where segregated waste is to be taken after the launch of the awareness campaign. These centres facilitate the integration of informal-sector workers and harness their capacities to contribute to SWM in a visible manner. Materials are sorted into categories ranging from 10 to 15, and multi-layered plastics (MLP) plastics are handled through extended producers responsibility (EPR).
- 5. Awareness campaign:** Launching a city-level campaign to inform residents about the importance of and the ways of carrying out segregation through door-to-door campaigns, demonstrations, street plays, wall paintings, hoardings, social media campaigns, etc., once the municipal team is fully ready. We also promote best practices such as waste reduction, home composting, maintaining positive relations with the sanitation team, and active participation in clean-up drives and other



initiatives. The Centre for Applied Research and People's Engagement (CARPE) also organizes collection services and awareness campaigns with the help of volunteers at festivals and public events (for example, Nirmalyadan during the Ganesh festival, collection during marathons and yatras), which helps with mass outreach.

6. Monitoring and maintenance: To sustain segregation and waste processing and to provide feedback and action points to the ULB / relevant officers through regular data capture and comparing this data against the data captured during the baseline assessment.

2.6 SWM Projects and Their Impact

Using this methodology, CRT has facilitated the setting up of effective SWM systems in the following ULBs as shown in Table 1.

Table 1: Projects in partnership with ULBs and private companies

Name of Client	Scope of Work	Duration of Project	Project Partners
CIDCO	Implementation of our BOTRAM SWM transformation process at CIDCO's Waluj site (25,000 population), followed by a one-year maintenance contract Resource recovery: 3 TPD, including organics SWM personnel trained: 70 households trained for source segregation: ~ 5,000	March 2015 - November 2016	CIDCO, CRT
Aurangabad Municipal Corporation	Implementation of our BOTRAM SWM transformation process in 66 wards with a of ~ 7.5 lakh]; effective doorstep collection and monitoring in 93 wards (population 8,87,000). Setting up and managing 2 dry-waste sorting centres: one in Himayat Baug and one in Central Naka. Running a city-wide campaign called Majhi City Swachh City. Project funded by Bajaj Auto. Resource recovery: 87 TPD, including organics SWM personnel trained: 1,799 households trained for source segregation: ~1,92,000	January 2016 - October 2017	AMC, CRT, Bajaj Auto, Endress + Hauser, Grind Master, BM Construction, CanPack India Pvt. Ltd.

Name of Client	Scope of Work	Duration of Project	Project Partners
Cantonment Board, Aurangabad	Implementation of our BOTRAM SWM transformation process at Cantonment Board (20,000 population). Segregation of waste at source across all households, home composting, and setting up an informal dry-waste sorting centre. Resource recovery: 1.2 TPD, including organics. SWM personnel trained: 40 households trained for source segregation: ~7,000	January 2017 - July 2017	Cantonment Board, Aurangabad, CRT
Vaijapur Nagar Parishad (VNP)	Implementation of our BOTRAM SWM transformation process across the ULB in 6 months. Year-long monitoring contract focused on innovation, reject-waste management through EPR, and light-touch support for monitoring and maintenance. Resource recovery: 7.5 TPD, including organics SWM personnel trained: 105 households trained for source segregation: ~8,500	July 2017 - January 2018 September 2018 - August 2019	VNP, CRT
Ratnagiri Nagar Parishad (RNP)	Implementation of our BOTRAM SWM transformation process across the ULB in one year across all 5 wards (population 80,000). Also, planning and managing beach clean-up drives and incorporating the informal organic-waste management sector (informal piggeries) into the system. Resource recovery: 22 TPD, including organics SWM personnel trained: 230 households trained for source segregation: ~16,110	October 2017 - September 2018	RNP, CRT
Zone 6, AMC	Building of model dry-waste MRF, focus on maximum resource recovery, waste-picker welfare, education of students. Resource recovery: 7 TPD, including organics SWM personnel trained: 230 households trained for source segregation: ~30,000	April 2018 — January 2021	AMC, CRT, Bajaj Auto



Name of Client	Scope of Work	Duration of Project	Project Partners
Nilanga Nagar Parishad (NNP)	Implementation of our BOTRAM SWM transformation process across the ULB in 6 months across all wards (population 45,000). Route mapping, planning, awareness campaign, segregation of waste at source, and data management. Resource recovery: 4.5 TPD, including organics SWM personnel trained: 103 households trained for source segregation: ~8,000	August 2018— January 2019	NNP, CRT
Gangapur Nagar Parishad (GNP)	Implementation of our BOTRAM SWM transformation process across the ULB. Setting up a waste-picker-driven dry-waste collection system with a donated vehicle. Setting up and managing a dry-waste sorting site. Monitoring and maintenance of segregation at source and doorstep collection. Resource recovery: Project in progress SWM personnel trained: 50 households trained for source segregation: ~3,000 (out of 7,500)	December 2018— December 2019	GNP, CRT, Bajaj Auto
Lasur Station Gram Panchayat	Implementation of our BOTRAM SWM transformation process across the ULB. Setting up a waste-picker-driven dry-waste collection system with a donated vehicle. Setting up and managing a dry-waste sorting site. Monitoring and maintenance of segregation at source and doorstep collection. Resource recovery: Project in progress SWM personnel trained: 40 households trained for source segregation: ~1,300 (of 2,500)	December 2019— ongoing	Lasur Station Gram Panchayat, CRT

2.7 Material Recovery Facilities

The MRFs set up under the BOTRAM process are sites where dry waste collected by the municipal collection system is brought for further sorting and recovery. Sorting and recovery are facilitated by informal-sector waste-pickers. Under the BOTRAM model, financial transactions between the municipality and the waste-pickers are not mandatory for the facility to perform its function. While the municipality provides space and infrastructure, it receives waste

management and recovery services and relevant data in return. The waste-pickers offer their services in return for access to segregated dry waste and a healthy working space and environment. Where the municipality is keen on achieving the formal integration of the waste-pickers into the SWM system of the city, an appropriate financial system can be developed.

Depending on the location, other special waste such as garden waste, coconut waste, and organic waste can also be processed at the MRFs.

Waste-pickers can range from poor people rummaging through garbage in search of food, clothing, and other basic, daily needs to informal private collectors of recyclables for sale to middlemen or businesses, as well as organized collectors and/or sorters of recyclables linked to unions, cooperatives, or associations (Dias and Samson, 2016).³ It is estimated that 1–2 per cent of the world’s urban population earns a living from waste-picking⁴ and India is currently home to 10 per cent of the world’s waste-pickers, or about 15 lakh people.⁵ About 8–10 per cent of urban municipal waste, with an estimated value of Rs. 120 billion, is recovered by workers in the informal sector and sold to the recycling industry every year.⁶

After tremendous struggle and through the efforts of organizations across the country, this sector is now receiving the attention it deserves in policy making, legislation, formal waste management systems, and public perception. The Solid Waste Management Rules, 2016 as well as the Swachh Bharat Abhiyan and Swachh Sarvekshan guidelines prescribe the integration of the informal sector into formal waste management systems.

While larger cities such as Mumbai, Pune, and Bangalore have seen many pilots and models of formal-sector integration, smaller towns and cities such as Aurangabad continue to transact this integration informally. The first

3 Informal Economy Monitoring Study Sector Report: Waste Pickers, by Sonia Maria Dias and Melanie Samson, February 2016. <https://www.wiego.org/sites/default/files/publications/files/Dias-Samson-IEMS-Waste-Picker-Sector-Report.pdf>

4 Sustainable Waste Management: Policies and Case Studies, 7th IconSWM—ISWMAW 2017, Volume 1. Sadhan Kumar Ghosh (ed.) Springer Singapore: Springer Nature Singapore Pte Ltd., 2020. <https://bit.ly/3mkiTvX>

5 An inclusive Swachh Bharat through the integration of the Informal Recycling Sector: A step by step guide, 2016. (Please refer to the link (page no. 3 and 19): <https://bit.ly/3gDuwgd>

6 India Infrastructure Report, 2006, Urban Infrastructure. 3iNetwork. New Delhi: Oxford University Press, 2006. Chapter 8. Solid Waste Management, by P.U. Asnani, pp. 160–189. <http://www.idfc.com/pdf/report/IIR-2006.pdf>



attempt at setting up a formal MRF in Aurangabad was as recent as 2015. Table 2 shows the MRFs established by CRT through its work in the Marathi region (also known as the Marathwada region):

Table 2: Material recovery facilities at various places in Marathwada

Sorting Centre	Qty. of Waste (TPD)	Partnership	Highlight/ Innovation
CIDCO Waluj	1	Land: CIDCO Construction: CIDCO Management: CRT Material Delivery: Contractor appointed by CIDCO Recovery: 3 waste-pickers	This was the first dry-waste collection centre of its kind in the entire Marathwada region. CIDCO Waluj became a model of how SWM can be implemented in ULBs. Visitors from other ULBs and even other divisions came to see the way that all households segregated waste, and how the dry-waste sorting centre was managing recyclables. The waste-picker family working at CIDCO Waluj became entrepreneurs and managed the centre on their own for a period of 3 years after we exited. A female member of the family was also invited to the United Nations Framework Convention on Climate Change (UNFCCC) Conference in Paris.
Himayat Bagh, Aurangabad	1.8	Land: AMC Construction: Existing AMC structure Management: CRT Material Delivery: Municipal staff Recovery: 5 waste-pickers	This was the first temporary centre in Aurangabad city that demonstrated how the informal sector could be integrated for resource recovery. This convinced the AMC to allocate land officially for a formal dry-waste sorting centre in Aurangabad.
Central Naka, Aurangabad	10	Land: AMC Construction: Can-Pack India Pvt. Ltd. Management: CRT Material Delivery: Municipal staff Recovery: 45 waste-pickers	This was the first formal centre in Aurangabad to achieve scale. This centre also ran a monthly 'Thank you lucky draw' that incentivized municipal staff to bring in larger quantities of waste. Lucky-draw coupons were issued based on the quantities of waste delivered and prizes were given through a lucky-draw process. This initiative also encouraged a positive association between municipal staff and informal-sector waste-pickers, with waste-pickers thanking municipal staff for bringing good-quality waste to the centre. This centre also conducted basic literacy and capacity-building programmes for waste-pickers and celebrated festivals (Diwali, Women's Day, Eid, Republic Day, etc.), bringing together all partners.

Sorting Centre	Qty. of Waste (TPD)	Partnership	Highlight/ Innovation
Vitthal-nagar, Aurang-abad	3.7	Land: AMC Construction: Existing AMC structure (repaired by AMC and Bajaj Auto) Management: CRT Material Delivery: Municipal staff Recovery: 11 waste-pickers	All partners have contributed to creating a beautiful centre, with wall paintings, plantations, children’s creche, etc. This centre also has a garden-waste and coconut shredder and a biogas plant to facilitate resource recovery from organic waste. This centre has been able to harness EPR to process 50 tons per month of non-recyclables, in partnership with Hindustan Unilever Limited (HUL). Through this money, the centre is able to provide household supplies (kirana) to the 11 waste-pickers working at the centre.
Vaijapur	3	Land: VNP Construction: VNP Management: CRT Material Delivery: Municipal staff Recovery: 8 waste-pickers	The day-to-day management of this centre has been taken over by a municipal worker from VNP who is learning data-keeping from the CARPE staff. This centre has been able to harness EPR to process 5 tons of non-recyclables per month.
Gan-gapur	0	Land: GNP Construction: GNP Management: CRT Material Delivery: Municipal staff Recovery: 1 waste-picker, municipal staff providing temporary assistance	The centre is managed by a municipal worker from GNP who is learning data-keeping from the CRT staff. He has undertaken several initiatives at the centre like display of recovered materials, compartmentalization for storage, etc. This centre has been able to harness EPR to process 3 tons of non-recyclables per month. Since the centre has been launched only recently, waste-pickers are yet to be on-boarded.
Zone 8, Aurang-abad	Proposed: 3	Land: AMC Construction: Existing structure of AMC; repair works to be undertaken by AMC Management: CRT Material Delivery: Municipal staff Recovery: ~ 24 (proposed) waste-pickers	This MRF has been commissioned under the UNDP Plastic Waste Management programme, with funding from Hindustan Coca-Cola Beverages (HCCB). The MRF is functional from August 2020.



CRT's MRF model focuses on providing safe and dignified working conditions for waste-pickers and on assisting them to maximize waste recovery. Through this we aim to achieve procedural and financial sustainability of the MRF. We have successfully established EPR connections to ensure higher recovery rates at the facilities as also greater financial stability. Once the system is set up, CRT plays a light-touch monitoring role where data are maintained, feedback reports are given to the ULB on a regular basis, conflicts related to waste-pickers are resolved, and forward linkages of materials from the sorting centre to scrap dealers, recycling companies and co-processors continue to be organized. The facilities also serve as knowledge centres for students, SWM professionals, residents, leadership from other municipal bodies, etc.

The MRFs need to become centres that the municipal staff, waste-pickers, and local residents can be proud of. This requires attention to detail and a constant revisiting of the core vision of these centres—to optimize resource recovery to contribute to a sustainable, equitable, and efficient SWM system.

At the Zone 6 sorting centre in Aurangabad, CRT has undertaken several initiatives. These include setting up a creche for the children of waste-pickers; partnering with a local organization to provide lunch facilities for the waste-pickers and AMC staff working at the centre; ensuring a bright and cheerful working environment through wall paintings; facilitating regular visits by school children, industrialists, and delegates from other cities and towns; and ensuring that all stakeholders are given an opportunity to present their contributions. From the design of the info-boards to the standard operating procedure (SOP) for visitor management, the focus is on inspiring ownership, confidence, and pride about the centre among the waste-pickers, the AMC staff, and the CRT staff. The funding partners and local political leaders are kept updated about the happenings at the MRF, ensuring that even their networks are harnessed for the benefit of the MRF. Figures 3 to 5 depict various initiatives taken at the Zone 6 MRF.

Creating a pleasant workspace even in waste management



Figure 3: Innovations at a sorting centre: mats made from shredded coconut fibre, wall paintings, play area for children of waste-pickers, and a seat made from old tyres.



Figure 4: CRT, AMC, and waste-picker team at the Zone 6 sorting centre in Aurangabad



Figure 5: The TakaTak Chaiwala offering tea made using biogas as a fuel in return for three pieces of waste plastic

2.8 Harnessing EPR: Conscientious Decision-Making

Over 20 years ago, the idea that producers should finance the collection and recycling of their products and packaging at end of life began to globally transform waste management policy and practices. Initially conceived in the early 1990s, the notion of extended producer responsibility (EPR) was intended primarily to provide incentives for producers to design products that were easier to reuse and recycle, with fewer and less hazardous materials to discard at the end of life. In addition, EPR was expected to support improved methods for the collection, recycling, and treatment of waste. Unlike an ecotax (ecological taxation), the scope of EPR was not limited to mandating financial obligations for producers, but also included information on logistics,

waste management, and even product design responsibilities. The Plastic Waste Management Rules, 2016 also address the question of EPR. They mandate plastic producers, importers, and brand owners to contribute to the collection of plastic waste that has been introduced by them. However, the rules do not lay out specific targets that have to be adopted by these entities.

At present, EPR obligations are being met largely on a sporadic and scattered basis under CSR. Certain companies are signing contracts with agencies and NGOs to fund the collection and storage of plastic waste from mostly urban areas. EPR is a powerful tool in helping to resolve the SWM crisis that India and the world are currently facing. However, it requires careful planning, experimentation, impact assessment, restructuring, and horizontal deployment for effective enforcement and implementation. At the MRFs set up by CRT, the effort has been to harness EPR to contribute to the financial sustainability of the MRF. In Zone 6, for example, part of the EPR fund is utilized to provide monthly kirana (household supplies like food grains, cooking oil, etc.) to waste-pickers with attendance of over 20 days in a month. This encourages regularity of attendance and also augments household incomes. The other part of the EPR fund is set aside on a monthly basis to create a reserve that will support the management of the MRF once the agreement with Bajaj Auto ends in March 2021. A strategic and conscientious decision has been taken to direct the benefits of EPR to the waste-pickers in the least disruptive and most sustainable manner. Given that the EPR guidelines are not clearly spelt out, several organizations have taken a commercial view towards EPR, making it their business to connect aggregators (local government bodies) with brand owners who need to demonstrate compliance in facilitating transportation of waste. The waste-pickers who sort and enable the separation of single-use non-recyclable plastics to be processed under EPR are left out of this system. At the same time, offering a per kg price for single-use non-recyclable plastics to be processed under EPR at this stage when the rules and the programmes are unclear or still in flux could easily create challenges for recovery in the future if the per kg prices need to be reduced due to changes in rules, policies, and programme, or if the per kg prices are completely eliminated. CRT has hence chosen to extend the EPR benefits to the waste-pickers through kirana, welfare initiatives, and a sustainability fund for the MRF.

CRT's journey in the SWM sector has been both challenging and rewarding as can be expected of any entrepreneurial set-up. The key ideas that have guided the way for CRT form a framework that the organization now uses to

think through its engagement in the newer sectors into which it is venturing. This framework is called SPARC whose five main elements are:

1. Scale: How scalable are the solutions we are designing? What can we do to scale impact beyond CRT's direct reach and capacity?
2. Partnership: How can we diversify our partnerships to strengthen our solutions?
3. Adaptive leadership: Is the problem that we are trying to solve technical or adaptive in nature? If it is technical, who is best suited to respond to it? If it is adaptive, can we use our skill set to break it down and to pilot solutions? When a solution works, can we turn it into a SOP or a framework that will allow replication?
4. Research: Who are the key stakeholders working in this sector in the Aurangabad region? What are the current trends, patterns of perception, patterns of behaviour? What are the best practices in other parts of the country and in the world? How can we ensure that the data generated from our work contributes to the larger body of literature in this sector?
5. Conscientious decision-making: Is our solution the right choice for our stakeholders in the long run?

3. Moving from SWM to Other Sectors

Returning to its think-tank roots, CRT is now also conducting research and executing pilots in the sectors of education and ecological restoration.

In the education sector, tremendous work has been done by various organizations across the country. Using the SPARC framework, CRT has been able to pilot eight programmes of which three have been identified as high-impact programmes capable of being scaled. CRT's need assessment survey with 114 leaders of diverse schools revealed a gap in science education and in twenty-first-century skilling programmes. CRT established partnerships with Agastya International Foundation, an education trust and non-profit organization based in Bangalore, and with Design for Change (DFC) to respond to both these needs respectively.

Agastya came to Aurangabad with its team and is now set to grow in the city. CRT facilitated the launch of Agastya's first mobile science laboratory in Aurangabad, and Agastya, along with its funding partner, CanPack India Pvt. Ltd., and the Zilla Parishad, is ready to launch the second mobile laboratory. CRT's role in this initiative has ended.



With Design for Change (DFC), achieving the required organizational bandwidth was a challenge, and hence CRT and DFC developed a model in which CRT was trained in the delivery of the DFC programme. Starting with a pilot in 50 schools in 2016, CRT trained teachers from 2,600 schools to take the DFC programme to their schools in 2019. CRT is also training a group of master trainers chosen from the Zilla Parishad team to carry the programme forward in the coming years.

The third programme that is ready for scaling is Campus Club (CC). This is designed to channelize the power of young people in generating knowledge-driven solutions for civic and environmental problems through experiential learning that translates academic learning into projects with real impact. CC is CRT's response to the triple challenge of:

1. growing social and environmental problems
2. rising numbers of graduates with few relevant employable skills, and
3. lack of data on several development issues in Aurangabad city.

CC is an experiential learning programme that provides an ideal blend of classroom sessions, field experience, and discourses on contemporary social and environmental issues. The programme aims to inculcate rational thinking, decision-making ability, leadership, and communication skills among students. In its inaugural edition (2018–19), more than 180 students across the disciplines of pharmacy, social work, and engineering participated. They produced excellent research work in the sectors of SWM, menstrual hygiene management, and green cover management, and presented their projects in front of an expert audience from the Confederation of Indian Industry (CII). The impact assessment of the programme reveals that around 86 per cent of students improved their communication skills, 84 per cent improved their research skills, and more than 80 per cent honed their leadership skills and teamwork during the fieldwork component.

Afforestation, ecological restoration, and green cover management emerged as the main areas of research for various reasons. A part of CRT's research on urban governance showed that 'tree plantation' was the second most popular activity (after the clean-up drive) among corporators seeking to engage with their constituency. A survey of Aurangabad-based companies and their CSR interests showed that 63 per cent of the respondents had 'tree plantation/greening' as a CSR mandate. Despite this interest from city

leadership and industry, Aurangabad and Marathwada fare poorly in this sector. It was clear that Aurangabad needed a planned and strategic approach. And building an effective and targeted strategy requires relevant data and research.

Aurangabad Division (also known as the Marathwada region or the Marathi region) is spread across more than 65,000 sq. km and has a population of over 1.88 crore. The landscape of the Aurangabad region is increasingly devoid of green elements and the region does not meet any global or national standards for green spaces. For an already arid region that is prone to droughts and an adversely dry climatic, a focus on enhancing the green cover can help combat multiple problems like air quality, water retention, temperature control, and, as research is increasingly showing, mental health as well. However, we must also caution against replacing the original local ecology with an alien one in the pursuit of a greener environment. Thus, based on multiple consultations with experts and desk reviews of relevant research publications, CRT has taken an approach to greening that consists of the following elements or steps:

1. Identify, maintain, and protect the existing green cover
2. Increase the green cover in an ecologically sound manner to achieve environmental standards
3. Generate research and data that are relevant to the Aurangabad ecological context
4. Engage relevant stakeholders through effective partnerships for maximizing impact.

The SPARC framework has allowed CRT to work effectively in multiple sectors and to create an impact beyond its own ambit and its own scope of work through strategic partnerships. It has also allowed CRT to constantly revisit its organizational mission and its project vision and goals. CRT plans to remain focused on three areas in the coming three years, that is, stabilizing the teams, standardizing processes in the sectors of education and ecological restoration, and identifying the right strategies and partners to achieve scale in SWM.



4. Acknowledgements

We are grateful to our government partners, the Divisional Commissioner's Office, the Collector's Office, the Zilla Parishad, the Municipal Corporation, and the Cantonment Board in Aurangabad, Maharashtra; the Nagar Parishads of Vaijapur, Ratnagiri, Nilanga, Gangapur, and Lasur Station; the City and Industrial Development Corporation of Maharashtra (CIDCO); and the Mangrove Cell, Forest Department (Maharashtra), for the opportunity to work with them. We are also grateful to our partners, Bajaj Auto, for the trust they have reposed in us, and to Grind Master Machines, CanPack India, Endress + Hauser, BM Constructions, and Hindustan Coca-Cola Beverages (HCCB) for their invaluable support. We thank our partners Hindustan Unilever (HUL), United Nations Development Programme (UNDP), McKinsey.org, the Alliance of Indian Wastepickers (AIW), and all the elected representatives and resident groups that collaborated with us.

About Civic Response Team

Based out of Aurangabad, Maharashtra, CRT is a social enterprise working in the field of SWM. CRT started its work in 2014 with a team of two individuals from a small colony of 250 households and is today an organization with more than 50 full-time employees. Learning and unlearning through experience, CRT developed its own process for effective SWM called the BOTRAM process and implemented it successfully in 14 towns and villages across three countries to generate livelihoods for 2,200 people, trained 17 lakh residents in source segregation, and achieved a recovery potential of 3.4 lakh tonnes from the collected waste. CRT has recovered more than 6,874 tonnes of dry waste in the period from 2015 to May 2019.

CRT has established distinct model facilities for material recovery from waste. By integrating one of the most marginalized sections of society, waste-pickers, into this process, CRT has not only provided safe and dignified working conditions for waste-pickers but also maximized the rate of resource recovery. By forging successful partnerships with diverse stakeholders such as local government bodies, private companies, citizens' groups, and people's representatives, CRT has paved the way for the transformation of SWM systems in different geographies.

Empowered by its experience in SWM, CRT is also exploring the fields of education and ecological restoration and has already achieved remarkable success in these fields too. Since 2017, we have planted over 15,000 saplings as part of 27 Miyawaki Native Forests (a unique way of creating urban forests pioneered by Japanese botanist Akira Miyawaki) in an area of around 80,000 sq. ft. in Aurangabad city and the surrounding villages. We are also exploring the field of ecological wastewater treatment and have successfully implemented three ecological sewage treatment plants (STPs) and a pilot nala (ditch or canal) rejuvenation project.

On the education front, we are engaged in some innovative projects. After the successful implementation of Design for Change (DFC), a global programme aiming to change children's mindset in a positive way, across Aurangabad district, we have been selected to implement it all over India. We have also designed and implemented successfully an in-house programme called Campus Club to develop twenty-first-century skills in college students in Aurangabad.



I.B: The Role of Sustainable Farming in Building Community Resilience in a Climate-Changing Environment: A Change Story

Laya⁷

This story of change is about the role of sustainable farming in a remote tribal or Adivasi area of Andhra Pradesh in building community resilience in a climate-changing environment. This effort, fraught with constraints but also offering great potential for development, is a huge, ongoing, and lifetime challenge for those of us who are engaged in grassroots action in Adivasi areas.

This change story describes and analyses key interventions of resilience building in Adivasi communities with a focus on good practices in sustainable farming, leading to food and income security and to an improved quality of life.

Change is a continuous process and communities are influenced by multiple forces, internal and external. The reality of climate change is an additional external factor that has increased the vulnerability of Adivasi communities, and hence is a central concern in our field-level engagement. This study focuses on LAYA's efforts to encourage the adoption of sustainable farming in Adivasi communities, describing the efforts, strategies, results, and challenges related to this grassroot intervention.

The development context of Adivasis from a national perspective

Andhra Pradesh is one of the 10 states that have Scheduled Areas. The other nine states are Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, and Telangana. The Indian

7 Contributed by Myron Mendes

Constitution categorizes the Adivasi communities living in the Scheduled Areas as Scheduled Tribes in order to provide special welfare provisions to them. Article 366(25) of the Constitution defines Scheduled Tribes as follows: ‘Scheduled Tribes means such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this Constitution.’⁸

Indicator	Total Population	Scheduled Tribes
Rural BPL (2011–12) (Tendulkar Method)	25.7%	45.3%
Literacy rate: Census 2011	73.0%	59.0%
Infant mortality rate (number of infant deaths per 1,000 live births in a year): National Family Health Survey (NFHS-4), 2015–16	40.7	44.4

Table 1: Source: Government of India, Ministry of Tribal Affairs, Lok Sabha unstarred question no. 4617 answered on 22.07.2019.

The first census of independent India, in 1951, recognized 212 Scheduled Tribes in the country. This number increased to 432 in the 1971 census. Today, about 705 ethnic groups are included in the list of Scheduled Tribes; they are described as ‘very isolated’, ‘still living in caves’, ‘living in forest areas’, or, more vaguely, ‘are primitive jungle tribes’, ‘having tribal characteristics’, ‘very backward tribe’, and having ‘distinctive dress and customs’. However, the Adivasis living in the Scheduled Areas differ considerably in terms of population, mode of livelihood, and occupation. For example, they may be hunters and gatherers, shifting cultivators, settled agriculturalists, pastoralists, artisans, farm labourers, and plantation and industrial workers. They also demonstrate varying levels of integration in the mainstream economy.

From a social and demographic perspective, most Adivasis rank well below the national average on the BPL (below poverty line) indicator as well as the infant mortality rate. They also have lower than average literacy rates. This is largely attributed to the abysmal education infrastructure in these areas, inadequately trained or absentee teachers, an alienating curriculum, and an irrelevant pedagogical system or mode of imparting knowledge.

8 The Constitution of India, Part XIX.—Miscellaneous.—Art. 366, p. 238.



Certain Adivasi groups have been characterized as Particularly Vulnerable Tribal Groups (PVTGs), earlier known as Primitive Tribal Groups (PTGs), on the basis of their greater ‘vulnerability’, even among the tribal groups. Currently, 75 out of 705 Scheduled Tribes are classified as PVTGs; they are spread over 17 states and one union territory (2011 census). They have been identified on the basis of the following criteria: (i) forest-dependent livelihoods; (ii) pre-agricultural level of existence; (iii) stagnant or declining population; (iv) low literacy rates; and (v) a subsistence-based economy. Andhra Pradesh is home to 12 such groups, second only to Odisha. The vulnerability of the PVTGs has been attributed primarily to the loss of their traditional livelihoods, habitats, and customary resource rights through the gradual intrusion of exploitative market forces and the entry of the state into their traditional habitats and areas in the form of industrial projects, conservation efforts, tourism, forest bureaucracy, and so on. These conditions have led to the loss of their land and resources, resulting in chronic malnutrition and ill health among these groups. Many PVTGs are forest dwellers and depend mostly on land and forest resources for their subsistence. Their habitats continue to be declared as reserved forests, protected forests, and national parks, leading to displacement and eviction without compensation.

Most Adivasis face immense problems resulting from dispossession of their lands; induced backwardness due to alienation of their lands, forests, and resources; and erosion of their personal and cultural identity. Today, the Adivasis are recognized as a distinct entity who are struggling to safeguard their rights over natural resources in the face of external pressure for control by mainstream society. The habitat rights of PVTGs are guaranteed by Section 3(1)(e) of the Forest Rights Act (FRA), 2006⁹, which recognizes the ‘rights including community tenures of habitat and habitation for primitive tribal groups and pre-agricultural communities’, and by Section 2(h), which defines ‘habitat’ as the ‘area comprising the customary habitat and such other habitats in Reserved forests and Protected forests of Primitive Tribal Groups and pre-agricultural communities and other forest dwelling Scheduled Tribes’.

9 The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. It provides for the restitution of deprived forest rights across India, including both individual rights to cultivated land in forested landscapes and collective rights to control, manage, and use forests as common property. Available from: https://www.researchgate.net/publication/42762034_The_Indian_Forest_Rights_Act_2006_Commoning_Enclosures [accessed 31 July 2018].

Most Adivasis face immense problems resulting from dispossession of their lands; induced backwardness due to alienation of their lands, forests, and resources; and erosion of their personal and cultural identity.

Studies have pointed to the flawed argument of ‘delivering development’ to tribal areas. In this regard, the National Advisory Council, 2013 states:

There is a significant risk that vulnerabilities may be exacerbated rather than reduced through government intervention and therefore due caution must be exercised in all cases . . . Vulnerabilities must be addressed through taking account of their food production and distribution systems and their rich repertoire of traditional skills and knowledge.¹⁰

Despite such reflections and perspectives, ill-conceived and poorly planned development projects and policies over several decades have resulted in the greater vulnerability of tribal communities.

1. The Adivasi Context in LAYA’s Working Area

LAYA works through its field offices across four Scheduled Areas in Andhra Pradesh, reaching out to 45 panchayats and approximately 10,000 Adivasi households. This entire area is remote, but rich in natural resources: land, water, and forests. The major issues affecting the Adivasis in this region are displacement and land alienation. The local natural resource base is under threat from indiscriminate multiple market-driven demands from agri-business (in particular, cotton, tobacco, tapioca, coffee, and cashew), mining, hydropower, etc. Although special protective laws apply to the Scheduled Areas, they do not prevent the violation of the rights of the Adivasis at the grassroots related to access to, and control over, natural resources; livelihood; adequate basic infrastructure for survival; access to basic health and education; and cultural identity. The nature of violations becomes increasingly complex in an environment that allows for accelerated exposure to unregulated market forces.

10 Development Challenges Specific to Particularly Vulnerable Tribal Groups (PVTGs) – Recommendations of the National Advisory Council
Available from: <https://tribal.nic.in/downloads/other-important-reports/NACRecommendationsforPVTGs.pdf>



Adivasis in this region primarily depend on agriculture and, to some extent, on the collection of non-timber forest produce (NTFP). Agriculture is mostly limited to the kharif season, from June to September, which is also the monsoon season. The second cycle of agricultural operations is difficult because the area is rain fed and there is limited access to water for irrigation. Cash income comes from government-promoted schemes like the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). Subsidized food and daily rations are made available on a monthly basis through the government Public Distribution System (PDS). The livelihood of Adivasi communities is becoming increasingly dependent on government doles and giveaways, thus preventing these communities from developing the skills and capacities necessary for becoming more self-reliant.

The new reality of climate change is exacerbating the existing social and economic vulnerabilities of these Adivasi communities

The ecological situation is increasingly becoming a matter of concern. The new reality of climate change is exacerbating the existing social and economic vulnerabilities of these Adivasi communities. It is well known that the impact of climate change, ironically, is experienced most harshly and most disproportionately by those who are the most marginalized and who have contributed the least to this phenomenon. Variation in climate has a direct adverse impact on the livelihood of Adivasi communities; declining agricultural productivity and shifting crop patterns jeopardize their food security. Every small change in temperature and rainfall has a significant effect on productivity in terms of the quantity and quality of crops. Other significant effects on the poor and the marginalized are soil erosion and soil degradation, impacting soil fertility and soil health. Drought, scanty rainfall, and seasonal water scarcity combined with warmer temperatures are major threats.

The Adivasi farmer households with which LAYA works are experiencing erratic and untimely rainfall, long dry periods, short fairly cold winters, and extreme weather events resulting from increasing climate variability. Many perennial streams are becoming dryer with every passing year. One of the areas in which LAYA works and which is home to PVTGs has witnessed eight

extreme weather events since 2010 (Local study of weather patterns and disasters, 2010–2017). In general, reports (State of Forest Report, AP, 2014)¹¹ indicate the gradual loss of forest cover and biodiversity

Salient aspects of climate variability: Community perception in LAYA’s areas of work	
(i)	High temperatures with increase in warming periods through the year
(ii)	Loss of rainfall predictability
(iii)	Delayed rainfall ¹² – Delay is becoming the new normal. The monsoon arrives after 12 June and retreats by mid-September.
(iv)	Sporadic showers, and sometimes very heavy showers, are experienced. Continuous rains over a few days takes place only in some area.
(v)	‘Dry years’ with less rainfall are on the rise.
(vi)	Rainy days are decreasing, with more rain falling in fewer days than before.
(vii)	Winter rains are increasing and become more and more unpredictable.
(viii)	Winters are arriving a month late and leaving earlier (2 to 3 weeks before the normal pattern) in this area.
(ix)	Sharp changes in seasons.

Table 2. Source: An FGD with Konda Reddis: PVTG

The Climate-Changing Environment

The additionality of the impact of climate change in the development narrative of Adivasis is worth considering given the already existing levels of marginalization faced by these communities. Climate change tends to affect those who are already marginalized and exacerbates their vulnerability. In the Indian context, erratic rainfall patterns, rising temperatures, and higher frequency of extreme weather events increase the vulnerability of marginalized communities, especially those living in habitats that are highly resource dependent.

In the words of Murla Abbairreddy, a 56-year-old priest from Kopullakotta village:

We came here about 20 years back. We used blankets from the onset of the north-east monsoons for a good three months. Now we use blankets for not more than three weeks in December–January. The dry, hot period has become

11 Andhra Pradesh State of Forest Report, 2014, pp. 10–11.

12 In climatic terms, delay refers to delay in the arrival of the monsoon based on a 30-year average. For the community, delay refers to delay in operational and agricultural activities

the longest. The monsoons are behaving in a way that it has become difficult for me to suggest sowing dates for the community. Farming decisions have become very difficult to make.

2. The Theory of Change: Sustainable Farming

The theory of change for sustainable farming in a climate-changing context, described below, captures the theoretical framework within which LAYA currently operates.

Theory of Change - Sustainable Farming at Laya

Impact

Improved resilience of remotely located men and women tribal farmers by bringing about improved food, nutritional and income security through application of locally relevant and resource efficient scientific practices (energy, water, soil, land, forest) that also respond to climate variability and extremes

Leading to these outcomes

1. More than 80% of the farmers strengthen and sustain the interventions
2. Increase in knowledge of farming skills specially climate and resource friendly precision farming
3. Improved soil structure and texture
4. Improved food and nutritional security
5. Improved income through savings on inputs
6. Additional income
7. Improved local biodiversity which also acts as microclimate regulators
8. Additional and improved ecosystem services (additional water availability, air purity, carbon capture)

With the assumption

The men and women farmers are willing and interested. Human and financial capital is available to operationalize the initiative. Enabling (social, cultural, political) environment to carry out the interventions.

Stakeholders will do

Men and women farmers participate in capacity building programmes. Co-operate in undertaking the farming activities and share progress and challenges. Co-operate in monitoring of the activities.

LAYA will do

Promote farming practices that are resource and energy efficient that lead to multiple benefits including ecosystem services. These practices will include mixed cropping, SRI, Homesteads, Live fencing, manure preparation, millets, nutri gradens, agroforestry, etc.

Problem Statement

Lack of improved knowledge/ techniques and scientific management of local resources in farming for improving food, nutritional and income security which is being increasingly threatened by climate variability and extremes.

3. Approach to Sustainable Farming

LAYA's approach to sustainable farming involved the following:

3.1 Situational analysis

At the very outset, LAYA undertook a situational analysis of a few remote panchayats in the East Godavari area. It identified a contiguous group of four panchayats spread across a 5-km radius. These panchayats were extremely remote, with no proper access to pukka roads and other means of communication. Nevertheless, the panchayats were slowly opening up to traders and to government departments (agriculture and horticulture), which provided access to chemical fertilizers and improved seeds. The farmers quickly adopted chemical fertilizers, especially for the cultivation of paddy, kidney bean, and cashew (cashew plantation was being promoted by the Horticulture Department under MGNREGS). At community meetings, the Konda Reddis of these panchayats expressed concerns about unsatisfactory agricultural production and losses from farming. Local climate variability was a matter of particular concern, as was worry about young people's alienation from farming.

LAYA soon realized that it had to take steps immediately to safeguard the livelihoods of vulnerable farmers, especially small and marginal farmers; the processes of land and ecosystem degradation had already set in. LAYA decided to educate the indigenous community about the importance and value of practices based on the management of chemical-free natural resources



and on efficiency practices that protect the soil, sustain the ecosystem, and improve livelihoods. Sustainable farming was seen as a key entry point in addressing some of the pressing concerns identified by the community.

Identification of entry-point package of practices across panchayats

LAYA mapped and examined the existing farming patterns, practices, methods, and techniques followed by the target community in the four panchayats. Based on the results of the assessment, LAYA identified the entry-point package of practices (PoP) that had the potential to address issues of food and income security. These practices were a mix of improved techniques and new methods of cultivation; some of these were new but were not alien to the region. The relevance of the practices was ascertained across the four identified panchayats taking into account the local landscape or topography and the cultural setting. While all the practices were introduced in the four panchayats, the dynamics of topography, slope, and land availability required that some practices be tweaked and changed more than others. For example, Pathakota panchayat consists largely of lowlands while Daragedda and Boddagandi panchayats have steep hills and valleys. Therefore, for Pathakota the focus was the system of rice intensification (SRI) and bio-fencing, whereas for the hilly panchayats the primary focus was reviving the fertility of degraded slope lands through mixed cropping using leguminous species. Following this, a detailed plan for operationalization across the panchayats was drawn up. The entry points and the focus areas across the panchayats are given in Table 3.

Table 3: Entry Points and Focus Areas in Different Topographies

Panchayat	Topography	Entry point – Focus areas
Pathakota	Lowlands suitable for paddy	<ul style="list-style-type: none"> • SRI (system of rice intensification) • Farmyard manure (to replace chemical inputs) • Bio-fencing • Mixed cropping <p>This panchayat was developed as a resource centre where all the PoPs were demonstrated.</p>

Panchayat	Topography	Entry point – Focus areas
Boddagandi	Mostly hilly terrain	<ul style="list-style-type: none"> • Mixed cropping through introduction and diversification of leguminous plants • Soil and moisture conservation through bunds to control erosion of top soil • Manure preparation
Daragedda	Lowland for paddy cultivation is a challenge; Steep hills and deep valleys.	<ul style="list-style-type: none"> • Revival of podu land (under slash and burn cultivation) through millet cultivation • Manure preparation • Millet processing • Millets are nutritious while also being climate resilient.
Gurthedu	Mixed terrain, including plain land and hilly terrain	<ul style="list-style-type: none"> • Homestead development • Millets promotion • Soil water management • Farmyard manure preparation

3.2 Identification of field assistants and training

To facilitate the close handholding of community members in undertaking sustainable farming, it was vital to recruit tribal field assistants from the panchayats. The criteria for choosing the field assistants were outlined clearly, as indicated below:

- Had some amount of cultivable land (in order to take up the PoPs promoted by LAYA)
- Belonged to a small or marginal farmer household from one of the four selected panchayats
- Demonstrated commitment and a high level of interest in farming, with little aspiration for city life
- Had basic literacy skills (had passed the class 10 exam)
- Displayed decent social skills so as to be able to communicate well with the community.

Subsequently, four or five field assistants for each panchayat were selected. These were typically young men and women aged between 20 and 35 years. They were trained for about a week on sustainable farming concepts and practices. Their roles and responsibilities in operationalizing the interventions in the respective panchayats together with their crucial role in monitoring were explained to them. They were required to collect and handle

farmer-level household data (based on the monitoring framework), making their role extremely important. The data thus collected was entered into the household performance card (household data card in Telugu).

Parallely, LAYA undertook capacity building of its Natural Resource Management (NRM) Team, comprising four personnel, to support the interventions and to coordinate the activities across the panchayats. LAYA prepared a plan for follow-up field activities, frequency of field visits, communication with the field assistants, troubleshooting, reporting, etc.

3.3 Identification of farmers

Since the objective specifically was to protect the livelihoods of the most marginalized farmers, LAYA's efforts were directed towards safeguarding small and marginal farmers owning land between 2.5 and 3 acres. A total of 1,200 farmers were selected from the four panchayats, with the highest number from Pathakota and the lowest number from Gurthedu.

3.4 Capacity building and exposure visits

The selected batch of progressive men and women farmers from each panchayat was exposed to the PoPs through village-level meetings. Knowledge of farming techniques was imparted through 'demonstration' plots. Additionally, the farmers were taken on exposure visits to areas where sustainable farming practices were being undertaken. For example, they were taken to Chintapalle, a major tourist and historic town and mandal in the adjoining district of Visakhapatnam, to study the SRI practice. They were also taken to the Regional Agricultural Research Station (RARS) where they were introduced to scientific agricultural techniques. Village-level capacity-building workshops were conducted every six months for three days in each panchayat. The farmers were also linked with the Agricultural Technology Management Agency (ATMA) for strengthening extension and outreach activities.

The farmers were taken on exposure visits to areas where sustainable farming practices were being undertaken.

3.5 Monthly and quarterly review meetings

The LAYA NRM Team and the 20 field assistants held monthly review meetings to evaluate the progress across the panchayats, to analyse the data collected, to identify challenges, and to troubleshoot problems. The overall consolidated data of three months was translated into English, recorded, and analysed. The analysis led to the introduction of new initiatives, described in the next section.

4. Towards the Development of a Model of ‘Good Practices’ in Sustainable Farming

LAYA’s intervention was aimed at developing a basket of good practices in sustainable farming, which, when administered together, work as a pragmatic model for building community resilience to climate change. This model was piloted in 2009 in a remote Adivasi area, with 934 Adivasi households, to promote resilience through farming practices among the Konda Reddi PVTGs in four panchayats and in 40 villages of Y. Ramavaram mandal in East Godavari district, Andhra Pradesh. These four panchayats have 48 ward members of which 19 are women. Two of the sarpanches are also women.

4.1 Defining good practices in sustainable farming

Some of the key indicators of good practices in sustainable farming that we adopted were:

- Assures food and income security
- Has low external input, low investment, and reasonable returns
- Ensures ecological sustainability
- Is in keeping with the tribal cultural ethos and traditional knowledge systems
- Is easy to adopt
- Inspires confidence among farmers
- Can continue to be practised despite the withdrawal of support



Based on our experience of working in other locations, we promoted six agricultural PoPs that we considered would contribute to community resilience. These were:

- i. Manure preparation and application at household level
- ii. Mixed cropping system
- iii. System of rice intensification (SRI)
- iv. Soil and moisture conservation
- v. Bio-fencing
- vi. Homestead land development

More than 5 practices = A
More than 4 practices = B
Less than 4 practices = C

In our experience, each PoP contributed to food security, increased income, and improved soil health. The assumption was that when these practices were simultaneously adopted by a particular farmer, the overall resilience of the family would increase by making food available throughout the year, by raising the family's annual income, and by sustaining soil fertility. The farmers were tracked on a sustainability outcome and were grouped into three categories - A, B, and C - based on the number of PoPs they chose to adopt. It is important to understand the practices that were promoted and how they contributed to agricultural sustainability and farmers' overall income.

4.2 Manure preparation and application at household level

Earlier, about 20–30 per cent of households applied farmyard manure in their fields. Our value addition was to initiate almost all the farmers into manure application, demonstrating to them newer and more effective methods of conserving or developing green manure, and introducing the Nadep¹³ technology of organic composting and vermin composting. Supported by the State Horticultural Mission and the ATMA, we were able to reach out to 932 farmer households, covering an area of 1,654 acres in the four panchayats.

13 Reference: ecoursesonline.iasri.res.in/mod/page/view

4.3 Mixed cropping system

Mixed cropping is the traditional practice of growing two or more crops together on the same piece of land in a crop season. In the target areas of the four panchayats, we noted that the farmers were practising traditional forms of mixed cropping involving millets, pulses (red gram), and cereals (maize and dry paddy). However, the general productivity of the mixed crops was relatively low and could be increased through the adoption of certain measures. Hence, after studying the situation, we introduced:

- More effective combination of crops by adding nitrogen-fixing crops like cowpea and black gram. The advantage of nitrogen-fixing crops is that they have the property of enriching the soil.
- Effective utilization of space by introducing a second cropping system in the late kharif and early rabi seasons.
- Improved method of cultivation, moving from the haphazard broadcasting of seeds to row cultivation, which helps in controlling weeds and in loosening the soil. This also makes harvesting easier and allows the sowing of a second crop.

These minor alterations resulted in an increase in yield output by 30 per cent, thereby contributing to the food security of farmers. In addition, the cultivation of pulses as a second crop generated some additional income for farmers.

4.4 System of rice intensification (SRI)

SRI is a system of agricultural production that combines several practices with four main components, namely soil fertility management, planting method, weed control, and water (irrigation) management. This system necessitates changes in nursery management, time of transplanting, water management,



and weed management. In implementing SRI, we worked with 120 farmers in pallam (wet) lands in the four identified panchayats. The advantages of using SRI are enormous. For SRI, only 2 kg per acre of seed material is required, as compared to 35–40 kg per acre in the conventional method of paddy

cultivation. This cuts down the cost of seed input considerably. Labour costs decreased by 50 per cent during transplantation and weeding. Newer methods of fertilizing using organic manure to enhance productivity and natural and biological methods of pest control were used for increased effectiveness. The overall increase in output was as much as 40 per cent. The challenges mostly related to changing the mindset and attitude of the farmers, ensuring critical irrigation at the stage of panicle initiation, and grain filling. Besides, SRI is most challenging in rain-fed conditions because water access is not in our control. Lack of timely availability of tools such as the weeder, which is an external technological device, adds to the problem of the proper management of SRI.

However, our efforts sustained 80 per cent of the 120 farmers who had taken up SRI cultivation and they continue to practise this method. Furthermore, approximately 150 farmers in the four panchayats who were not part of our target community adopted some of the practices on their own, such as line transplantation with spacing, which assures them a 20 per cent increase in income.

System of Rice Intensification (SRI), Balaraju Reddy, Pathakota, Y. Ramavaram mandal, East Godavari district

Balaraju Reddy had 3 acres of pallam (wetland) and 2 acres of gavurulu (slope land). Until LAYA came to the area, he and other farmers were dependent on subsidized seeds, urea, and di-ammonium phosphate for paddy cultivation. He began experimenting with SRI on 2 cents of his land in 2010 and increased the area to 2.5 acres by 2014. He shifted to organic farming, using biofertilizers and biopesticides (Ghana and Drava Jeevamrutham). Reflecting on paddy cultivation in SRI, he observed that paddy in his field has taken root and resists weather variations better; use of organic manure has improved grain filling and reduced pests. His crop yields have improved too. He did acknowledge that he used half a kilo of urea with the organic fertilizers. Others used higher amounts of urea under the SRI method, he said. Balaraju observed that the mutual sharing of labour is a common practice in tribal society and with smaller families and the seasonal migration of young people, farming households were hiring labour for specific farming activities. While he paid Rs. 20 per day for hiring local labourers, migrant labourers from Odisha charged Rs.

50 per day. Apart from SRI, Balaraju cultivated millets, black and red gram, and vegetables on his gavurulu land and earned a small income from his grocery shop. His wife, Lingamma, has a fuel-efficient cook stove and spoke about how she cooked two dishes at a time and had more time to do other household chores. Balaraju said that the adoption of the SRI method of rice cultivation gave him 90 bags of paddy in comparison to 50 bags of paddy that he had been harvesting earlier. He could sell 20 bags of paddy in the market and earn money.

Source: LAYA Project Evaluation Report, August 2018, p. 22.

4.5 Soil and moisture conservation

Before LAYA's intervention, only about 25 per cent of farmers practised ad hoc measures for soil and moisture conservation through haphazard and unsystematic methods. We brought in new knowledge and methods to control topsoil erosion through the construction of earthen and stone bunds on podu (steeply sloping land) and sloping land interspersed with trenches. This practice was adopted by 802 (85 per cent) farmers, covering 2,956 acres. Besides controlling topsoil erosion, this practice increased the moisture-retention period and finally resulted in a 20 per cent increase in crop productivity. This was revealed by data generated through crop-cutting experiments. Furthermore, in one panchayat, Pathakota, four farm ponds were introduced for pisciculture, mainly for local consumption and sale where feasible.

4.6 Bio-fencing

This involved the promotion of live fencing with fruit-bearing plants like sapota, lemon, guava, and custard apple, and with other hardy plants like jatropha and bamboo. Earlier, only 10–15 per cent farmers undertook dry



fencing using bamboo mats and twigs and wood. Others left their lands open to encroachment by cattle and other wild animals. The practice of bio-fencing contributed to the farmers'



food security and brought in some income. We were able to reach out to 637 (68 per cent) farmers from the target community.

4.7 Homestead land development

Earlier, most farmers grew maize and a few vegetables on their homesteads, which comprised about 10 cents of land close to their habitation. We encouraged them to continue this practice, but motivated them to also add other crops like turmeric, ginger, tuber (colocacia), and banana by seeking assistance from the state Horticulture Department and ATMA. This intervention was a thumping success, and was scaled up, both horizontally and vertically. The seeds, materials, and banana rhizomes developed by the initial 880 farmers were shared with new farmers. About 250 additional farmers adopted this practice on their own. Many innovations were introduced by the farmers themselves. Some farmers increased their landholdings and added other agro-forestry species like broom grass, tamarind, amla, teak, and red sandalwood.

5. Case study of Killo Ramdas, farmer, Gurthedu panchayat, Y. Ramavaram mandal, East Godavari district

Table 4: Crop productivity and returns on investment

	Crop	Extent	Investment	Returns	Net Income
1	Turmeric	0.25	5,000	25,000	20,000
2	Ginger	0.25	5,200	15,600	10,400
3	Chamadumpa (colocasia)	0.25	3,000	12,500	9,500
4	Brinjal	0.10	1,000	5,600	4,600
5	Chillies	0.25	2,500	10,000	7,500

	Crop	Extent	Investment	Returns	Net Income
6	Ridge gourd	Fence	250	4,500	4,250
7	Tubers	Borderline	500	6,000	5,500
8	Maize	Intercrop	500	6,000	5,500
9	Alasandalu (black-eyed bean)	Intercrop	100	3,000	2,900
	Total		18,050	88,200	70,150

This farmer came under category A of the farmers adopting several good practices on their farms. He used 1 acre and 10 cents for homestead land cultivation. He owns 2.5 acres. He belongs to the Porangi Porja tribe. He is 35 years old. His wife and he have six children. His engagement in a multi-cropping system in various land categories has yielded him far greater benefits than what he would get usually. Generally, from the homestead he would get approximately Rs. 30,000. However, he was able to earn a net income of Rs. 70,150 in 2018, as indicated in Table 4.



‘I am extremely happy because my food security is assured and my income has more than doubled,’ said Killo Ramdas.

Table 5: Results of project intervention in 2017–2019

Category	Male	Female	Total
A	718	106	824
B	45	4	49
C	54	7	61
Total	817	117	934



At the end of the project, as many as 824 farmers came under category A and hence stood to benefit immensely in terms of food and income security. This engagement led to this area being selected under the state's Zero Budget Natural Farming (ZBNF) project in 2017. Most of the farmers with whom LAYA had worked were incorporated into this scheme and continued their practices and added further value by introducing ghana and dhraava jeeva amrutam (jeeva means a living being; amrutam means the elixir of life, capable of prolonging life), which was part of the ZBNF implementation plan. Both are concoctions prepared from cow dung and cow urine for agricultural use. Today, LAYA has been selected as a facilitating agency by the state government to introduce ZBNF in 86 hamlets in the four panchayats, covering 2,157 households. The philosophy of encouraging natural farming under the ZBNF programme is closely aligned with the practices of agricultural resilience that LAYA is promoting.

The philosophy of encouraging natural farming under the ZBNF programme is closely aligned with the practices of agricultural resilience that LAYA is promoting.

6. New initiatives in the post-pilot phase

Subsequent to promoting six agricultural practices, we launched additional interventions to add value to what had been promoted so far.

6.1 Nutri-gardens

The close relationship that LAYA developed with the community led to a deeper reflection of their needs and priorities. For example, the need for nutri-gardens emerged during conversations with women. They expressed a need to have some cash in hand together with enjoying green vegetables in the off-season. Recognizing the local culinary practice of using spices and vegetables like brinjal and tomatoes, and recognizing the poor health of women who are mostly anaemic, the nutri-garden intervention was proposed by LAYA. This intervention is delivering excellent results, with women now having a small cash income through the year.

6.2 Millet cultivation and processing

Initiatives to revive the cultivation of millet were launched across the four panchayats. Millet cultivation in the region has increased as a result of these measures, which educate farmers on the benefits of millet, including its importance for health, food, and nutritional security, and its role in dealing with climate variability. However, millet processing proved to be challenging for the target households and also interfered with household-level consumption patterns. In response, LAYA set up a millet-processing facility to encourage local-level consumption. This allowed for quick processing and consequently the demand for millet increased sharply. LAYA's advocacy-related interventions have been one of the reasons for the addition of millet to the PDS system.

6.3 Agroforestry

For these tribal communities, agriculture cannot be delinked from the forest. Unfortunately, increasing deforestation, onerous forest regulations, and overexploitation of forest resources have undermined and weakened the tribal food security system. The overall dependence of tribal communities on the forest for food and livelihood has declined. To respond to this situation, LAYA introduced practices like domestication of broom grass, value addition of forest species, and, more importantly, revival of degraded community lands through community-driven afforestation and reforestation initiatives. These involved the promotion of 21 varieties of culturally relevant and climate-resilient forest species.

To strengthen farming outcomes and to build resilience, LAYA is now promoting farming diversification to include pisciculture, duckery, goatery, and backyard poultry.

Moving forward, we envisage the gradual inclusion of a range of practices in the bundle of ongoing farming activities to cope with social, economic, and ecological changes. The role of LAYA will be to continue introducing scientific techniques that leverage the traditional knowledge systems of communities so as to increasingly secure their livelihoods. The formation of organic farmer producers cooperatives could be a concrete way to ensure



the continuity and longevity of sustainable farming practices. Sustainable farming needs to be strengthened and upscaled keeping in view the multiple goals of poverty eradication, food and nutritional security, improved health outcomes, ecosystem restoration, climate change mitigation, improved local production, and self-reliance.

7. Insights gained and lessons learnt

7.1 Diverse land types showed the highest uptake and continuity of practices

Farmers in Pathakota took up all of the practices to varying degrees. One reason for this was that the farmers here cultivated diverse land types of four kinds, namely pallamu (lowland), doddulu (homestead), garuvu (gently sloping land), and podu (steeply sloping land), which they used for undertaking all practices. The location of Pathakota proved to be an advantage over the other panchayats, which were topographically not as advantageous as Pathakota.

7.2 Crucial role of sarpanch

The sarpanch of the village has participated in LAYA's training programme and has played a vital role in creating an encouraging and enabling environment. Pathakota panchayat has been gradually developed into LAYA's 'resource' panchayat, along with serving as one of the panchayats under the government of Andhra Pradesh's Zero Budget Natural Farming (ZBNF) programme; these steps have kept the momentum going and allowed the association between LAYA and the panchayat to thrive.

7.3 Community-driven innovation

The interventions in Daragedda and Boddagandi panchayats were limited because not much low land was available. Households performed very well in the areas of pulse cultivation and mixed cropping. Innovations in manure preparation were also observed. For example, households replaced the foundations of manure pits, which were standardized to incorporate the use of brick and cement along with bamboo mats. Eighty per cent of the households adopted manure preparation and application.

7.4 Diversification leading to cash income

The diversification from rajma cultivation to include high-priced black and green gram generated considerable enthusiasm among the farmers. Only the villages of the Konda Reddi community in Gurthedu panchayat took up and sustained the activities. Households of the Valmiki trader community did not seem interested in continuing with improved farming techniques.

7.5 Immense value of bio-fencing

The practice of bio-fencing overshot our target score per farmer. Farmers who adopted the practice expanded it on their own lands. They could see immediate benefits, especially protection from straying cattle.

7.6 Demo plots: Seeing is believing

The strategy of using demonstration plots in the farms of the field assistants proved highly successful. Turmeric and ginger, cultivated for the first time on fallow lands, were quickly sold in the market. These positive results encouraged farmers to take up newer crops and techniques.

7.7 Women as household food managers

Women-led households were the highest proportion of households to take up nutri-gardens, homesteads, and mixed cropping. This underscores the role of women in household food management. The homesteads are largely women's domain and play an important role in contributing to women's cash kitty. This has boosted their confidence and self-worth.

7.8 Importance of local market linkages

Among all the PoPs, there was a high level of interest in (i) millet production; (ii) diversification of pulses (from rajma to black and green gram); and (iii) new techniques for mixed cropping and nutri-gardens for growing vegetables in the off-season. The millets and gram were quickly bought by local traders, providing immediate cash incomes to farmers. Vegetables and other farm produce were sold to roadside vendors and eateries.



8. Policy Reflections

Some of the issues, challenges, and suggestions related to the promotion of sustainable farming in Indian agriculture are briefly discussed below.

8.1 Making farming not just productive but also truly regenerative and sustainable through agro-ecological approaches

The sustainability of agriculture in India faces multiple pressures resulting from the degradation of natural resources, increasing fragmentation of landholdings, rising input costs, post-harvest losses, and frequent climate variability. These numerous challenges can be addressed through agro-ecological approaches based on the use of natural inputs, identification and promotion of resilient local seed varieties, cultivation of climate-aligned crops, and adoption of resource-use efficiencies. The Government of India, including the NITI Aayog, has endorsed efforts to significantly boost agro-ecological and natural farming approaches through programmes like the Paramparagat Krishi Vikas Yojna, which promotes schemes like the ZBNF. LAYA's own experience with ZBNF in Andhra Pradesh has shown positive results in terms of water savings, farmer incomes, ability to adapt to climate change, and potential for preventing farmer indebtedness. These positive results have come after a long period of indiscriminate promotion of 'high-yield' crops at the cost of biodiversity and the nutritional value of agricultural products. However, in order to demonstrate commitment and to make these new approaches truly effective and meaningful, policy directions are needed to phase out all synthetic and chemical fertilizers and subsidies by 2023. Subsidies should instead be used for the promotion and incentivization of organic manures that enhance the long-term productivity, sustainability, and resilience of agricultural production.

8.2 Focusing on small and marginal farmers

The latest Agriculture Census 2015–16 shows that as much as 67 per cent of India's farmland is held by marginal farmers with landholdings of less than one hectare (2.47 acres). This category of marginal farmers, including small farmers, has mostly received a raw deal under farming policies in India. For example, the minimum support price (MSP) primarily benefits large farmers

(those owning 10 ha and more) while benefitting only a minuscule proportion of small farmers. India needs to go beyond its rhetoric of safeguarding the interest of the most marginal and the smallest farmers. Instead, it should focus on policies that secure livelihoods, enhance income from farm outputs, diversify farm livelihoods by encouraging the value addition of farm outputs, facilitate easy access to credit, and, most important, strengthen rural infrastructure that allows for critical local-level storage facilities for perishable food items while creating an enabling market system for all this to thrive. The need for decentralized facilities at the village and/or panchayat level has emerged very clearly during the COVID-19 pandemic. In order to operationalize an inclusive farming policy, the government must acknowledge the fact that large corporations have a growing hold on seeds, fertilizers, pesticides, and technologies. Profit-making corporations do not work in the interest of small and marginal farmers and their role in farming needs to be greatly regulated.

The need for decentralized facilities at the village and/or panchayat level has emerged very clearly during the COVID-19 pandemic.

8.3 Focusing on local-level irrigation infrastructure and on research and development (R&D) through public investment

Public investments in Indian agriculture have largely been directed towards the development of irrigation infrastructure. Comparing this expenditure with the proportion of irrigated area in India, we observe that in half the country's farmland, irrigation has yet to reach farmers, who rely entirely on rains for their crops. This raises the question: how does a country with the largest irrigation infrastructure in the world perform so abysmally in ensuring equitable access to irrigation? LAYA's experience points to a potential solution framework. Our experience shows that local-level irrigation infrastructure, wherever present, is mostly in a dilapidated condition and requires regular maintenance. Not enough attention has been paid to developing context-specific irrigation systems such as gravity water-flow technologies and hydraulic dams (hydrams) that are vital for providing critical irrigation to the neediest farmers. Investment in these kinds of local-level, low-cost, energy-efficient technologies is one way of responding to the serious problem of lack



of irrigation in India, rather than the linear approach of building only large-scale irrigation infrastructure that benefits mostly large farmers. Furthermore, given the fluctuations in inter- and intra-annual rainfall, leading to different levels of water flow, farmers and water users need to anticipate and adapt to the changing situation from year to year. In this context, climate-friendly, locally managed solutions become even more relevant.

Related to this is the need for R&D for local-level farming solutions. Investments in agriculture-related R&D in India is almost one-fourth that in China; even Bangladesh invests more than India in agriculture-related R&D. More specifically, local-level farming technologies used by small and marginal farmers are critical elements that need urgent attention. This can be done innovatively by promoting panchayat-level community-based agricultural stations and by building the capacity of educated youths in collaboration with Krishi Vigyan Kendras (KVKs) and local research stations.

8.4 Strengthening the national food policy framework: Promoting localization through sustainable production and consumption systems

The national food policy framework has been built around a range of acts and programmes, including PDS, the Integrated Child Development Services (ICDS), the Mid Day Meal Scheme, maternity benefits, MNRGS, and cash transfers. The most important among these is the National Food Security Act, 2013, which aims to provide subsidized food to two-thirds of the population. The core areas it addresses are fixing errors in inclusion, expansion of the PDS basket to include locally cultivated food items, digitization of records to ensure transparency, creation of a mechanism for participatory monitoring, and establishment of a grievance-redressal platform. Among these measures, the one related to the expansion of the PDS basket through the inclusion of local food items is crucial for building a healthy and resilient local economy. LAYA's efforts to revive millet cultivation have led to the incorporation of millets in the PDS scheme in the East Godavari area. While building on the national food policy framework, we must not lose sight of the importance of promoting localization in the spheres of production, distribution, and consumption.

Among these measures, the one related to the expansion of the PDS basket through the inclusion of local food items is crucial for building a healthy and resilient local economy.

8.5 Feminization of farming

The increasing role of women in farming, driven by rural-to-urban migration by men, has led to a situation broadly termed feminization of farming/agriculture. Census 2011 data shows the sharp rise in the participation of women in agriculture, with increasing numbers of women assuming roles as cultivators and labourers. This reality is not matched by, or reflected in, prevailing women-centric agricultural policies; ideally these policies should seek to implement gender-specific interventions to raise productivity, consider women as agents of rural transformation, and harness their skills for local agricultural extension. The way forward should be to build the capacities of women in agriculture by providing them support through relevant information, access to credit and insurance, and access to market linkages that will enable them to become entrepreneurs.

8.6 From the perspective of Sustainable Development Goals

From the perspective of Sustainable Development Goal (SDG) 2, 'zero hunger', which seeks to achieve food security and improved nutrition while promoting sustainable agriculture, several goals are interlinked and interconnected. Action is needed across all SDGs rather than an exclusive focus on one goal. For example, to achieve SDG 2, comparable action needs to be taken in regard to SDGs related to 'poverty eradication', 'good health and well-being', 'responsible consumption and production', and climate action. While robust action on SDG 2 will also yield related benefits in achieving the other SDGs, poor action on other SDGs presents a risk in terms of reversing the gains made in responding to SDG 2 in the Indian and global contexts.

9. Conclusion

Building community resilience for Adivasi communities in a climate-changing environment presents many constraints and challenges, but also offers potential for innovation and change. Building community resilience in the true sense involves various dimensions of life in Adivasi societies: food security,



livelihood, income, education, health care, infrastructure, while safeguarding their cultural ethos and traditional wisdom. This is a huge, ongoing challenge for those of us who are engaged in grassroots action in Adivasi areas.

Climate change is an additional external factor that has increased the vulnerability of Adivasi communities, particularly in the context of sustainable farming, and hence is a central concern in our field-level engagement. We hope that the insights, experiences, and lessons gained from our work will help those who are interested in making a difference in a specific local context.

About Laya

LAYA is a non-profit organization, with its main office in Visakhapatnam, Andhra Pradesh, and with its areas of operation in East Godavari, Visakhapatnam, Vizianagaram, and Srikakulam districts in northern Andhra Pradesh. LAYA's perspective on the situation of marginalized communities, mostly Adivasis,¹⁴ is that they are the victims of societal pressures and external forces, and lack the capacity to safeguard their entitlements and rights as well as secure the basic services that are due to them. These vulnerable communities are under great threat from mainstream forces and the climate crisis, which militate against their survival, dignity, and well-being.

LAYA has been involved with issues facing Adivasi societies since its inception in 1989. LAYA, meaning 'rhythm', believes in the wisdom of the 'rhythm' underlying Adivasi societies. This change story focuses on measures taken in the last decade to build community resilience among Adivasi societies in a climate-changing environment in four Scheduled Areas in the state of Andhra Pradesh.

¹⁴ In this case study, 'Adivasi societies' are synonymously used with the term 'tribal societies'.

I.C: A Glimpse into the Pastoral World of Kutch: A Case Study on Camel herding

Sahjeevan¹⁵

This case study documents Sahjeevan's work in conserving the camel breeds of Kutch. The number of camels in Kutch has fallen drastically in the last two to three decades, mirroring the condition of the other pockets of camels in the country. In 2008, Sahjeevan realized the need to conserve the camel breeds of Kutch. Sahjeevan's work has included marketing, ecological restoration, litigation, advocacy, community mobilization, as well as cultural exposition. National and international forums have recognized Sahjeevan's work on the conservation of camels in Kutch. The number of camels and camel herders in Kutch has increased in the past three years. There are also instances of young people from pastoral communities of Kutch quitting city jobs to take up herding once again. Although much has been achieved, a lot still needs to be done.



Figure 1: Kharai Camels of Kutch

1. Camels: A brief introduction

The word camel is derived from Latin: Camelus and Greek: κάμηλος (kamēlos) from Hebrew or Phoenician: gāmāl. There are two kinds of camels: the dromedary and the Bactrian.

15 Contributed by Ramesh Bhatti and Shouryamoy Das from Sahjeevan and Bhikabhai Rabari, Salimbhai Node, Haji Gullu Halepotra, Ramzanbhai Halepotra, Mirmamad Hingorja from the pastoral Community



Camels are distinguished by fat deposits on their backs. These deposits are commonly known as humps. The dromedary has a single hump while the Bactrian camel has two humps. The concentration of body fat in their humps minimizes the insulating effect that fat would have if it were distributed over the rest of their bodies, helping camels survive in hot climates. A full-grown adult camel stands 1.85 m (6 ft 1 in) at the shoulder and 2.15 m (7 ft 1 in) at the hump. The average life expectancy of a camel is 40 to 50 years. Camels can run at up to 65 km/h (40 mph) in short bursts and sustain speeds of up to 40 km/h (25 mph). Camels are extremely well adapted to survive in arid climates. The wide toes on a camel's hoof provide a supplemental grip on varied soils and surfaces, making it a very tough animal that can traverse difficult terrain.¹⁶¹⁶

There are about 14 million camels left in the world as of 2010, 90 per cent of them being dromedaries. Humans may have first domesticated dromedary camels in Somalia and southern Arabia around 3,000 BC and domesticated Bactrian camels around 2500 BC.¹⁷

Camels have undergone a series of physiological adaptations that allow them to survive without any external source of water for long periods of time. For example, when the fat tissue is metabolized, it yields more than one gram of water for every gram of fat processed. This fat metabolization, while releasing energy, causes water to evaporate from the lungs during respiration. When the camel exhales, this water vapour gets trapped in its nostrils and is reabsorbed into the body as a means to conserve water. The dromedary camel can drink as seldom as once every 10 days, even under very hot conditions, and can lose up to 30 per cent of its body mass due to dehydration. Camels foraging on green herbage can ingest sufficient moisture in milder conditions to maintain the hydrated state of their bodies without the need for drinking water. Camels' mouths have a thick leathery lining, allowing them to chew thorny desert plants. Long eyelashes and ear hair, together with nostrils that can close, form barriers against sand. If sand gets lodged in their eyes, they can dislodge it using their transparent third eyelid. The camel's gait and wide and splayed feet help it move without sinking into the sand.¹⁸

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1.1 Camels in India and the need for conservation

Camels, unfortunately, are facing an uphill struggle for survival in India. Sixty per cent of the camel population in India has been wiped off in a period of just two decades. According to the 2012 livestock census, the number of camels in India stood at 0.4 million as against 1 million in 1992.

Camels are highly drought-resistant animals and a vital cog in low-input, low-output, low-risk farming systems in arid regions. Such farming systems are also known as rain-fed farming. They have a low-carbon footprint and have a mild impact on the ecology. Many scientists, researchers, and conservators across the world advocate for rain-fed farming. Camels are also highly productive animals in their own right, but due to convoluted market dynamics, most camel produce finds no economic value.

There are nine registered camel breeds in India. Each breed is resilient and highly adapted to specific terrains, climate, and ecology, and hence is a storehouse of precious genetic resources. Climatic variability across the world is increasing by the day and the resilience of camels may prove vital in the future. Such a genetic resource is precious for more than one reason and needs to be conserved at any cost. Global bodies such as the International Union for Conservation of Nature (IUCN), the Food and Agriculture Organization (FAO), and the United Nations have mandated that such genetic resources be protected. The FAO has called livestock keepers the *guardians of biological diversity*, underlining their significance to the world. India is a signatory to international conventions to conserve local breeds and hence it is imperative that we as a country work to preserve such breeds. Camels in India are raised exclusively in pastoral systems. Hence, their conservation is possible exclusively on their native tracts. For these breeds to survive, it is important that the herders are able to earn a respectable income and they are facilitated to continue their traditional profession.

The arid region of western India with its variable climate has been a breeding ground for camels for thousands of years. Rajasthan is home to the largest number of camels in India, followed by Gujarat. The situation of camels and camel keepers in both states has been dire, even though some glimmers of hope have recently appeared on the horizon. In Gujarat, camels are concentrated in the district of Kutch, which lies at the extreme west and is the most arid of all the districts of the state.



2. Kutch: A brief background

Kutch is the largest district in India and accounts for 24 per cent of the land of Gujarat state. Kutch, with an area of 46,652 sq. km, is a district and a distinct region in itself. It is home to many distinct cultures, ecosystems, and geological formations.

Kutch is the only arid ecosystem in the world that has a marine mangrove ecosystem along its coast. Salt marshes cover half of the land of the district. These salt marches are known as the Ranns. The Rann is inhospitable and uninhabited by humans. The Rann, in spite of its harsh climate, is the only site for flamingo breeding in India. The Little Rann of Kutch lies on the east and is home to the rare Indian wild ass. The Bhuj Ridge, with its thorn forests, straddles the district of Kutch from east to west. It has the densest human population in the district. The thorn forests are home to many pastoral families who herd small ruminants. The long coastline in the south is rich in aquatic life and is home to many fishing communities. Banni, once the largest tropical grassland in Asia, lies in the north of Kutch district. Nomads, over many centuries, have come from places as far as Baluchistan to graze their animals on the rich grasslands of Banni.

Some native communities in Kutch have also taken up the practice of rain-fed agriculture. These farming communities nurtured and conserved a great variety of seeds suitable for the harsh and erratic climate of Kutch. Farming and pastoralism developed a symbiotic relationship; farmlands served as home for nomadic herding communities in the non-agricultural season while the dung and urine of the animals fertilized the soil in the fallow season. Pastoralists also supplied farmers with resilient draught animals, which tilled the land, carried loads, and were a readily available source of power on farms. Farmers and herders have traditionally been tied with bonds of brotherhood and bonhomie.

Farming and pastoralism developed a symbiotic relationship; farmlands served as home for nomadic herding communities in the non-agricultural season while the dung and urine of the animals fertilized the soil in the fallow season.

Culturally, Kutch has been home to the confluence of two reigns, regions, and religions. Vagad, the eastern part of Kutch, has been influenced by the Hindus of Saurashtra; the western and north-western part of Kutch has been shaped by Persian and Islamic influences. Often the same king ruled over both the parts.

The ports of Kutch lie on an important sea route between Asia and Africa, and over the centuries, their residents have absorbed many foreign influences. Today, 38 distinct communities coexist in this small region. Almost all of them are also traditional artisans with highly evolved forms of arts and crafts, including embroidery. Cattle and craft items are the customary mediums of barter and trade.

2.1 Livestock system in Kutch

Livestock is the lifeline of people in the arid and semi-arid regions of India. Livestock rearing is the main source of livelihood for people in Kutch. There are three distinct systems of livestock rearing in Kutch, namely the extensive livestock system, rain-fed farming based on the livestock system, and irrigated farming based on the livestock system. The extensive livestock system, commonly known as pastoralism, is predominant. In such pastoral systems, both large and small ruminants graze on *gauchars* (village commons) and grasslands.

Pastoral communities like the Rabaris, the Bharwads, and the Jats rear sheep, goats, and camels. Some Sindhi pastoralists like the Samas breed camels while others prefer keeping buffaloes and cows. Of these pastoral communities, the Fakirani Jats specialize in rearing camels. Kutch experiences frequent droughts and livestock keeping is a dependable source of livelihood during these difficult periods.

2.2 Camel pastoralism in Kutch

Kutchi and Kharai are the two camel breeds of Kutch. The breeding tract of the two breeds is spread across the district. Male camels are excellent sources of draught animal power while the females provide milk and nurture young ones. The Rabaris, the Jats, and the Samas own most camels in this district. There are about 350 camel-herding families in Kutch and Aliyabhet (a region in Jamnagar district).



The Kutchi camels live in a terrestrial ecosystem, including forest, wasteland, agricultural land, and wetland. They feed on trees, small trees, shrubs, undershrubs, climbers, herbs, etc. The Kharai breed is restricted to places in and around the coastal belts (i.e. Mundra, Abdassa, Lakhpat, and Bhachau). It mainly feeds on mangroves (locally called cheriya) and other associated saline plant species. The grazing resources include gauchar, pastureland, and protected areas. Camels are tall animals and, thanks to their reach, they are able to graze on vegetation that other bovines or wild herbivores of Kutch cannot reach, which serves to limit competition for scarce resources. Herders claim that camels never degrade the grazing resources, as they tend to take a few bites from a tree and then move on. Unlike other bovines, camels like to spread over a large area while feeding, and hence their impact is distributed over a relatively vast area. It is a rare sight to see more than two or three camels feeding on the same tree. Camels also contribute to maintaining, and even increasing, biodiversity. They disperse the seeds of the vegetation on which they feed and recent research indicates that such pastoral grazing enhances the genetic biodiversity of in-species vegetation.

Wildlife sanctuaries, encroachers, and industries have taken over many of these traditional grazing lands in Kutch district, thereby restricting the movement of camels and limiting their access to feeding grounds and other resources.

Camel herding is nomadic in nature and differs from other forms of pastoralism which involve one-day grazing in and around the village.

Camel herding is nomadic in nature and differs from other forms of pastoralism which involve one-day grazing in and around the village. The migration patterns also vary based on the breed of the camels. The Kharai camels stay around the mangroves all year except for the winter. In the monsoon season, the



Figure 2: Camel herding

Kharai camels are taken to bays, or islands in the delta, where they have access to freshwater as well as grazing resources. The camels graze, largely unsupervised, in this season. In winter, they migrate inland to Charri Dhandh, a saucer-shaped lake in Kutch. Charri Dhandh is the largest freshwater body in Kutch and is an assured source of water during this critical season. Kutchi camel herders move across the district all year round and migrate to other areas of Kutch during droughts.

Kutch is a rain-fed region and the monsoon is the season of sowing crops. Camel herds move to wastelands or forests during this season as they cannot be penned on agricultural fields. Camel herders often follow a predetermined migration route and they build relationships with farmers located along their specific route of migration. Farmers have traditionally welcomed herders because the herds regenerate their fields, but with the increasing adoption of irrigation and intensive farming systems in the district, such relationships are under duress.

The herding communities, especially the Fakirani Jats who herd the Kharai camels, have stuck to their traditional ways of living in spite of increasing economic difficulties. These Jats live in reed grass houses called pakkha, herd camels across islands and mangroves, and care for their camels as members of their own family. This community is adept at nomadic living and is spiritually driven to leave ephemeral footprints on earth. Such ways of living, which are extremely ecologically sound and are in tune with the natural world, are unfortunately considered primitive and backward by mainstream society. Such communities can teach us a great deal about living holistically and simply on this planet, without overexploiting our scarce natural resources and harming the environment.

3. The many uses of the camel: The Indian context

Camels feed in wastelands and marginal lands, which are not suitable for agriculture. Indian camel breeds are disease resistant too, and require only limited medical care, which means they are not a financial burden. Since feed is practically free, camel herding costs little. Camels have many uses too, the chief of which have been noted below.



3.1 The camel as draught animal

Camels have always been a very important source of draught power in arid regions of the world, especially in climates where other domesticated large bovines find it hard to thrive. The sale of young and adult camels as draught animals is the primary source of income for herders. Some young males find their way to fairs in Rajasthan through local middlemen while others are sold locally. Young male camels start undergoing training (as farm animals or otherwise) at around the age of one year and develop into an excellent source of animal draught power for ploughing, drawing water, grinding grain, operating oil-extraction units (kachchi ghanis), and serving as a means of local transport. Automated farm equipment and vehicles have taken over the rural landscape in the past two decades and subsequently the value of draught animals has crashed. The number of camels in Gujarat fell by 50 per cent between 1997 and 2007. It fell by a further 20 per cent in a five-year period between 2007 and 2012.

Recently, the tourism industry has also started using camels. Camel tourism offers much scope for development, especially because camels can reach remote places where cars and other means of mechanized transport cannot penetrate easily.

Camels in the past were also used in warfare. Bactrian camels were deployed by armies between 500 and 100 BC. The rider's weight was evenly distributed over the camel's back through the use of especially made saddles that were shaped to accommodate the animal's hump. Many kings in the west of India were known to employ camel cavalries. After independence, the Border Security Force continued purchasing camels to patrol the remote borders of the country. However, as roads were built along the border areas, this eliminated the need and demand for camels.

In some parts of India, camels remain indispensable as a source of cheap and readily available draught power for farmers as well as for local transport in the remoter regions of the country. This is because the camel can navigate any landscape or dirt road while mechanized vehicles need some kind of road to move on and find it difficult to traverse rocky, sandy, or waterlogged terrain. While we rely heavily on fossil fuels for transport at present, if and when we run out of oil, camels and other such animals may be our only viable means of transport.

Camels also serve the needs of other herders and are a top choice of the keepers of sheep and goats (small ruminants).

3.2 Camel manure and penning

In rain-fed regions of Kutch district, herders earn an income from penning, the practice of letting animals stay on farms overnight so as to collect their urine and dung. Most farmers in Kutch practise low-input, low-output agriculture and they pay herders to pen their camels on their farms overnight. Camel dung and camel urine revitalize the topsoil and are sources of low-cost fertilizer for farmers. Herders earn up to 10 rupees per animal per night during the non-cropping season. Camels additionally feed on weeds in farms in the fallow season and hence keep these unwanted plants in check.

3.3 Camel hair

Camel herders in India spin camel hair into strong yarn. This yarn is then made into bags, ropes, and ties. These exquisitely handcrafted products find use within the community and are not commercially traded. Some recent initiatives have also looked at using camel hair for garments and textiles. However, such efforts face difficulties in collecting camel wool because not many herders are willing to trade wool while others inhabit very remote areas and hence are hard to reach.

3.4 Camel milk

Camel milk feeds not only the young ones in a herd but also forms part of the herder's diet. A small quantity is consumed by the breeder's family or the community.

Camel milk is a complete meal for many herders, especially for the Fakirani Jats while they are living on the bets (mangrove islands). Herders can tell the kind of vegetation the camels have been feeding on just by tasting the milk. They swear by the therapeutic value of camel's milk. Camels are also very efficient in turning feed into milk. According to some estimates, camels are almost five times more efficient than cows in this regard.

Unfortunately, until very recently, camel milk was not classified as an edible substance and hence could not be traded.



3.5 Camel meat

A camel carcass can provide a substantial amount of meat. The male dromedary carcass can weigh 300–400 kg (661–882 lb), while the carcass of a male Bactrian can weigh up to 650 kg (1,433 lb). The carcass of a female dromedary weighs less than that of a male, ranging between 250 and 350 kg (550–770 lb).¹⁹ In India, however, camel slaughter has been a taboo for the herders of both Gujarat and Rajasthan. Of late, though, as the traditional uses of the camel have diminished, camels have found their way to slaughterhouses. While many decry and denounce camel slaughter, and it is a sensitive issue, the demand for camel meat to some extent has led to some public support for camel herders.



Figure 4: A Kharai Camel herder with milk

3.6 Camel hide

Camel hide makes excellent leather, but since the number of camels has declined, there is not enough supply (critical mass) of hides to develop a camel leather-based value chain. As of now, camel hides have no commercial value.

4. Camel breeding and management in Kutch

As mentioned earlier, bull camels are sold around the age of one year. Typically, herds consist of one breeding male, a younger male that is being trained to mate in the future, young ones (both male and female, constituting about 30–40 per cent of the herd size), and mature females. The breeding male is chosen based on his maternal and paternal lineage. Choosing a young male for breeding is a complex matter and a variety of factors are taken into consideration. They include build, size of the hump, thickness of skin (thin is preferred), colour, length and thickness of leg, size of chest pad, and size and position of the scrotum. The health history of the parents, as well as the

¹⁹ Wikipedia

mother's ability to produce milk, are also considered. Breeding males are exchanged or replaced every three years to prevent inbreeding. The female calf is always named after her mother to prevent her from mating with her own father. A male starts servicing at the age of three years and can continue until the age of 10 years. Breeding starts after the monsoon and the young ones are also born in this season. Camels need a lot of care in this season, making it a critical time for herders. Females mate every two years; an average female spends about a year in pregnancy and a year in nursing the young one. This happens because the bull camel is not allowed to mate with a nursing mother. This is because a young camel needs the full attention of its mother for a year.

As such, at any given time, in a herd, about half of the adult females are pregnant while the other half consists of nursing mothers. Unlike other small ruminants, the longer reproduction cycle (two years) of camels makes it more challenging to increase the herd size, because the loss of young ones has major repercussions, often making it unviable for the herder to continue herding. A camel herder thus has to be on alert and vigilant in this season.

5. Challenges of camel herding in Kutch

Until recently, the number of camels in Kutch had been declining; the census numbers attest to this fact. The major factors responsible for this decline in the camel population are noted below.

- *Industrialization*: Camel herds are kept exclusively in pastoral systems, and hence herders depend on commons to gain access to feeding grounds, compelling them to be constantly mobile. Kutch has undergone rapid industrialization after the 2001 earthquake. Industries have not just taken over huge swathes of land (which was formerly common land) but have also cut off access to customary grazing areas. Herders face great difficulty in finding newer ways to feed and keep their camels in this rapidly changing landscape. The migration route followed by camel herders is of prime importance for camels, as they learn to choose vegetation along the route on which to graze from their mothers. Hence, camels also find it difficult to move to other geo-climatic regions at a later point of time in their lives. Diminished and difficult access to grazing resources harms the health of the camels while also reducing milk yields and reproductive rates. This leads to increased spending on medicines and results in reduced average lifespans.



- **Reduction of mangroves:** Many ports and industries have been built on ecologically sensitive mangroves. These enterprises have also erected structures on the customary streams and creeks (that is, those that have been used by pastoralists for generations) of Kutch, blocking the flow of freshwater to mangroves. This has led to a drastic reduction in mangroves and in turn ravaged the pastoral economies of some coastal villages. Tundavandh, a coastal village in Kutch, for example, has lost 80 per cent of its camels in the space of 15 years due to restrictions on accessing the mangroves.
- **Mining:** Kutch is rich in minerals and rocks and there are several mining operations in the district. Mining has once again taken over large sections of common lands.
- **Protected areas:** The government has started earmarking specific parts of land as protected areas in an effort to stem the rapid decline in biodiversity. In such protected areas, all and sundry are barred from accessing natural resources, including those needed by camel herders who have been the conservers of biodiversity on these lands for many years.
- **Border tensions:** Kharai camels graze in mangroves located close to the western border of India. Escalating political tensions lead to increased checking and restrictions on accessing these mangroves. Sir Creek, a tidal estuary on the border of India and Pakistan, has been a disputed area for a long time, and such political disputes affect the livelihoods of primary producers (including camel herders) on both sides of the border.
- **Changing farming systems:** Camel herders and farmers have had a symbiotic relationship for generations. However, with farmers adopting irrigation and fertilizers, and sowing multiple crops every year, this relationship has disintegrated. Such farming systems have not only hurt pastoralists but also contaminated the soil and lowered the groundwater levels in Kutch.
- **Decline of traditional means of livelihood:** The sale of young male camels has sustained herders for centuries. While this still remains the major source of income for most herders, the demand for young males has fallen drastically and consequently so have the prices. Currently, the prices of young males are so low that camel herding has become economically unsustainable and commercially unviable.

- *Designation of the camel as the state animal of Rajasthan:* The Government of Rajasthan, in an imprudent attempt to conserve the camel, declared it the state animal. As such, the sale or movement of camels outside the state was banned. Farmers and traders from all over the country used to typically attend the famous camel fair in Pushkar in Rajasthan and also visited other camel fairs to buy camels. Since they could no longer participate in the melas, the demand for camels declined further, leading to a drop in prices.

Camel pastoralism is steeped in spirituality and the communities that keep camels believe that herding is a mandate from God, and hence they continue herding in spite of various difficulties.

Camel pastoralism is steeped in spirituality and the communities that keep camels believe that herding is a mandate from God, and hence they continue herding in spite of various difficulties. Camels are treated as family members by most herding communities. These strong ties between animals and keepers are the chief reason why camel pastoralism has continued to survive in Kutch. The sale of female camels has long been a taboo, but now, in desperation, some herders are selling off their entire herds and taking to other unskilled work. It is probably spiritual belief rather than plain economics that has served to conserve the camels till now. As the younger generation increasingly joins the formal education system and as newer opportunities open up for them, it would be foolhardy to rely solely on customs and traditions to protect the camels.

6. Challenges of working with camel herders

- Limited government support: Camel herding has many ecological benefits, advantages that accrue to the ecosystem as a whole and not just to herders. Camel herding is a highly sophisticated practice. Mobility is a herder's primary survival strategy and it takes a lot of skill and customary knowledge to manage herds. Unfortunately, many officials remain bound by the notion that herding and nomadism are primitive and ignore the increasingly large body of scientific literature on pastoral systems while framing policies. Camel herders have access to very few, if any, benefits.



- Difficulty in mobilizing: Camels herding is nomadic by nature. Herders find it difficult to get organized as they inhabit remote parts of the country where roads and mobile networks have little penetration.

7. Sahjeevan's efforts and collaboration with herders

Sahjeevan started working with camel-herding communities in 2009. At this time, there was the camel population had plummeted and the feasibility of keeping camels in Kutch had declined drastically. Young people in herding households saw no future in the occupation and moved to cities in search of work as wage labourers. Many older herders, too, sold their camels at a minimal price and exited the practice of herding. Sahjeevan understood that it needed to act swiftly to revive the endangered occupation.

The Kutchi camel had been recognized as a registered breed by then, but the Kharai camel was not. At this time, Sahjeevan had mobilized the herders of Banni into the Banni Breeders' Association in 2008 and had registered the Banni breed of buffalo. The successes in Banni led the Government of Gujarat to introduce a scheme to organize herders in different regions of the state. Sahjeevan secured support from the Government of Gujarat under the scheme meant to conserve the threatened camel breeds of Gujarat. Sahjeevan conducted a survey on the health of camels and held health camps as an entry-point activity. Sahjeevan also conducted a census during the survey and found that there were fewer than 2,000 Kharai camels left. This set off alarm bells and Sahjeevan decided to immediately escalate its efforts to conserve the breed.

Sahjeevan's efforts highlighted the need to work for the health of camels, and since then the Animal Husbandry Department of Gujarat has held regular health camps for camels and their herders.

8. Formation of a CBO

Sahjeevan knew from its experience of working with buffaloes in the Banni grasslands of Gujarat that the community had to take the lead in conserving native animal breeds. Hence the participation and involvement of the camel herders and the local community was critical in reviving camel pastoralism in Kutch.

Sahjeevan started mobilizing the herding community and formed a CBO called the Kachchh Unt Ucherak Maldhari Sangathan (KUUMS) in 2011

Sahjeevan started mobilizing the herding community and formed a CBO called the Kachchh Unt Ucherak Maldhari Sangathan (KUUMS) in 2011. Herders from all the communities—the Rabaris, the Samas, and the Jats—joined the collective. KUUMS started working to register the Kharai breed of camel first. Sahjeevan helped the herders to establish governance systems and to strategize their plan of action.



Figure 5: Formation of KUUMS

KUUMS has grown to be a democratic institution of camel herders. At present, the CBO has 370 members. Membership is open to active camel herders only. An executive committee performs day-to-day tasks and provides leadership. The executive committee has two members from each block, one male and one female. Blocks that have more than 50 members may decide to nominate a third herder of their choice to join the executive committee. The committee meets every quarter to discuss progress and general issues. In case of an emergency, they also meet on an urgent basis. Regular general body meetings are also held. Sahjeevan works closely with KUUMS and provides knowledge and administrative support.

Sahjeevan also formed three camel cooperatives and started organizing training programmes, exposure trips, and sabhas of the cooperatives. The members of KUUMS were given training on the details of the Forest Rights Act (FRA), 2006 and the community was encouraged to lobby for their rights. KUUMS and Sahjeevan also decided to work on developing the potential of camel milk and camel wool as means of livelihood, and KUUMS started advocacy with the government to allow the sale of camel milk.



Figure 6: Resolution by Camel Breeders Association



9. Registration of the Kharai camel

In 2015, Sahjeevan successfully completed the characterization as well as the registration of the Kharai camel as a distinct breed. It was a milestone achievement, as this was the first time that a camel breed had been registered in the post-independence period. Sahjeevan, KUUMS, the Animal Husbandry Department, Government of Gujarat, and Anand Agricultural University (AAU) collaborated to prepare a breed descriptor and submitted it to the National Bureau of Animal Genetic Resources (NABAGR). Constant follow-up and coordination with the organization followed the submission, and in February 2015, the breed was recognized as a distinct camel breed. The Kharai camel breed was recognized as the ninth camel breed of India, with the accession number INDIA_CAMEL_0400_KHARAI_02009.

Sahjeevan and KUUMS, or the Camel Breeders Association, collectively worked for the preparation of the breed descriptor, while AAU carried out the molecular characterization. The breed descriptor was forwarded to NABAGR through the Animal Husbandry Department, Government of Gujarat, with their endorsement. The camel is known as the ship of the desert, but this registration revealed the story of camels that swim in water and feed on mangroves.

The Camel Breeders Association played an important role and was actively involved in the registration of the Kharai camel. It gained support and recognition from the state government departments, the media, and civil society organizations. The Animal Husbandry Department agreed to support the Camel Breeders Association in organizing a camel mela to promote camel pastoralism in 2015.



Figure 7: Recognition to Kharai Camels as a distinct breed

As awareness about the Kharai camel as a distinct breed increased, the animal has gained media attention as well. The Discovery Channel showed interest in showcasing the breed and gave 10–12-minute coverage to the Kharai camel and the Jat community in a documentary called ‘Revealed: Rann of Kutch’ in December

2014. The documentary has helped spread awareness about the breed and attracted the interest of various stakeholders. Since then, several media outlets have covered the Kharai camel. It is thanks to the efforts of Sahjeevan and KUUMS that the Kharai camel today is the best-known camel breed in India, and possibly in the world.

The KUUMS–Sahjeevan combine has also been recognized by the National Biodiversity Authority (BDA) and the Federation of Gujarat Industries (FGI) for their pioneering work on conserving camels in the state. Two Kharai camel herders have also been awarded the Breed Saviour Award by NBAGR.

10. Milk as a source of livelihood

Camel milk has long been regarded as a superfood by herders. Camel milk is low in fat, rich in micronutrients, and has excellent therapeutic value. Camels graze on a variety of highly nutritious trees, shrubs, and grasses in the wild, and all the goodness of this free-range vegetation flows into camel milk. In the Middle East, camel milk is considered liquid gold and fetches high prices. However, until 2016, camel milk, inexplicably, was not classified as an edible food item. For centuries, herders have not cared about selling milk because the sale of young males was enough to sustain the herding system. However, it was clear now that milk had to be sold and a market had to be established for herders to survive. KUUMS and Sahjeevan launched efforts to advocate for camel milk to be classified as an edible food item, with active support from the Animal Husbandry Department.

Camels graze on a variety of highly nutritious trees, shrubs, and grasses in the wild, and all the goodness of this free-range vegetation flows into camel milk

It was going to be a long battle and so both political backing and financial support were definitely needed. Sahjeevan and KUUMS decided to seek support from the Government of Gujarat for these efforts. The top officials of the state were sensitive and agreed to support the initiative. In 2014, the Government of Gujarat applied to the Food Safety and Standards Authority of India (FSSAI) to classify camel milk as a food item. At the same time, the backend of a camel milk-based economy needed to be established, as till then there was no infrastructure for the collection, processing, or distribution of



camel milk. A stakeholder meeting was held at Anand in 2014. A number of decisions were taken at the meeting and the following goals were achieved in a period of two years (2014–15):

- A pictorial book documenting the medicinal properties of camel milk was published. It included case studies of around 18 people as testimonials of the quality of camel milk as a medicine that can cure a number of difficult ailments.
- Amul Dairy, which works through Sarhad Dairy in Kutch, initiated research on camel milk to develop standards of fat content, SNF (solids not fat), and other constituents of camel milk. The Camel Breeders Association facilitated the collection of 156 samples from various places across the district.
- Based on the findings of the research study, a meeting with the chairperson of FSSAI was held at Delhi in 2015, to discuss the status of approval from FSSAI regarding the inclusion of camel milk as a food item. The chairperson informed the representatives from Sahjeevan that camel milk has been considered as a food item with proper standards at the FSSAI level at the previous meeting of the authority held in May 2015. However, the final notification would take some more time, as the proposal would have to go to the Ministry of Health and Family Welfare first for approval, to the Ministry of Law and Justice for translation, and then to the Government of India for final notification. In the meantime, FSSAI issued a public notice to establish the standards for camel milk. The notification issued by FSSAI on its website noted that camel milk should have a fat content of 3.5 and an SNF of 6. The public notice was released for inviting feedback, opinions, and comments from experts and citizens, and was open to receiving objections to the standards that FSSAI had decided.

Sahjeevan realized that while the efforts to ensure the acceptance of camel milk at the national level were underway, it was also important that local people in the district be informed about the value of camel milk and ensure that there is local demand too. KUUMS and Sahjeevan came together to help individual camel pastoralists set up parlours selling camel milk tea, ice-cream, and beverages in several towns of Kutch district.

The state government, taking note of Sahjeevan's efforts and realizing the potential of camel milk, granted a sum of Rs. 3.5 crores for setting up a camel milk dairy in 2015.

All these efforts bore fruit at the Living Lightly exhibition held in December 2016 when FSSAI announced that camel milk has been classified as an edible substance. Since then, Amul has invested in procuring milk at two bulk milk coolers (BMCs) in Kutch. Private entrepreneurs, too, have jumped on the bandwagon and have started collecting camel milk. In 2019, Amul started bottling camel milk and selling it in select cities in Gujarat. Processing of camel milk is necessary to increase its shelf life. Initially, a shelf life of five days had been achieved, which made it difficult to market the milk to most metro cities. Recently, UHT milk processing has been successfully adopted, and a shelf life of six months has been attained. Amul has also launched camel milk chocolates in the market. Some private entrepreneurs have been able to access very niche and premium segments of the market. They have been selling camel milk at more than Rs. 1,000 a litre in some metro cities.

Thanks to the success of the camel milk market, the price of female camels has doubled in a period of three years. Young people of the pastoral communities have left jobs in cities to practise camel pastoralism in certain pockets of Kutch district.

Two examples of such herders are Devabhai Rabari from west Kutch and Nagjibhai Rabari from east Kutch. Devabhai, 38 years old, had given up his camels and taken to driving trucks. He worked as a truck driver for 15 years, traversing the length and breadth of Gujarat. He gave up driving trucks because, in his words, 'driving gives good money but no barkat'. Barkat loosely translates to a feeling of both abundance and contentment, even in the absence of wealth. Devabhai decided to start herding camels once again when he came to know that camel milk is likely to fetch good returns. He started with six camels in January 2019 and since then has increased his herd size to 35. Nagjibhai, 26 years old, had been a truck driver as well. In 2018, he decided to give up driving trucks and invest his time in camel herding. As of now, he does not have camels to support his family, so he still works as a truck driver for five or six days a month. He hopes to save money so he can buy some camels soon and give up his driver's job all together.



Some herders from other parts of Gujarat have also started moving to Kutch with their camels to gain access to the milk dairies. These herders have also started demanding that BMCs be setup in their districts.

Eighty herders sell milk to the BMCs every day in Kutch. Most of them collect milk from their friends and relatives too and bring it to the BMC. Sahjeevan estimates that more than 150 herding households have been the beneficiaries of the camel milk economy. As of now, close to 2,000 litres of camel milk is collected every day. Till date, Sarhad Dairy (Amul's local dairy) has collected 2,41,417 litres of milk from the herders. All in all, Rs. 1,20,70,850 has been paid by Amul alone to the herders while Rs. 2,41,417 has been deposited into the account of KUUMS.

While much work has been done, a lot more still needs to be achieved. The BMCs setup by Amul (Sarhad Dairy) are accessible only to a section of the herders. Some Kharai camel herders who inhabit remote regions find it difficult to access the BMCs. Along with marketing milk to urban consumers, it is also important to build a market locally, especially given the challenges of collecting and distributing milk.

11. Regeneration of grazing resources

As mentioned earlier, the processes of rapid industrialization, mining, and urbanization, particularly after the earthquake of 2001, the invasion of *Prosopis juliflora* (a kind of mesquite that has become an invasive species), and the expansion of agriculture into traditional grazing lands have exerted pressure on the existing fodder resources in Kutch. All these forces have led to the shrinkage of grazing lands and to the overexploitation of the existing commons. Sahjeevan started working to regenerate clusters of camel pastoralism in the district. Based on surveys and consultations with KUUMS, 13 clusters were identified by Sahjeevan. Access to grazing resources is critical for the survival of pastoralism, and hence the identification, restoration, and management of these resources are vital. Sahjeevan aimed at participatory conservation and regeneration of existing traditional grazing lands and, if necessary, complementing these efforts by propagating species of fodder trees suited to the dietary needs of camels. In 2011, Sahjeevan started collaborating with KUUMS to prepare maps of various grazing routes and habitats, assigning these areas with a seasonal status to indicate the availability of biomass. In addition, Sahjeevan studied and documented the biodiversity in and around

the grazing routes. A site-specific, cluster-based participatory conservation plan was developed and capacity-building exercises were undertaken at clusters of villages. These exercises included training on the provisions of the FRA, 2006 and information about how the act could be used as a tool to gain formal rights to customary grazing sites and routes. Sahjeevan started facilitating gram sabhas to undertake the implementation of the FRA, 2006. KUUMS was entrusted with the task of coordinating activities between the herders and the local panchayats. Sahjeevan and KUUMS setup and restored many water bodies, regenerated common lands, and negotiated with different stakeholders to provide access to herders.

The land is a valuable resource and many vested interests often come together to strip rural communities of their rights. The fight for access to grazing resources continues to date. While seven forest rights committees (FRCs) were formed and three claims were filed, not a single claim has been approved by the authorities. Recently, one of the bigger ports started encroaching on the freshwater streams that flow into the mangroves. The plans of the port authorities, prima facie, are to prevent the flow of sweet water, which invariably will destroy the mangroves. Once the mangroves are degraded, these lands can be claimed as wastelands. The herders and Sahjeevan launched widespread protests against these tactics and held dharnas. KUUMS and Sahjeevan then moved the National Green Tribunal (NGT) and were able to obtain an immediate stay order on the encroachment of these lands. The latest NGT order has been positive and the bench has mandated the following:

- Restoration of the mangroves will be done by the government authorities within six months.
- No salt pans will be developed in the area without proper clearance from the government authorities.
- Fines will be levied on parties that have built structures on the land and caused damage. Such parties will be identified and the fines will be extracted within a month.
- All artificial structures that have been erected or built are to be demolished immediately.



While damage has been averted for now, it is not hard to imagine these forces attempting a takeover once things cool down.

12. Promotion of camel pastoralism

KUUMS and Sahjeevan also realize that it is important to sensitize the wider populace to the herder's way of life. A sensitized world is an ideal world where conflict can be avoided or minimized. In 2015, KUUMS, with support from Sahjeevan, published a biocultural protocol (BCP) of camel herders which has been widely distributed till date. Sahjeevan has initiated a project called Living Lightly, a highly regarded exposition of the pastoral way of life. This exhibition opened to rave reviews in Delhi in 2016 and was followed up with another successful tour to Ahmadabad in 2017. The third edition of Living Lightly was scheduled to be held in Bangalore in 2020. However, it has been tentatively postponed to late 2021 as a physical show was not feasible due to the Covid-19 pandemic. KUUMS has been an equal partner with Sahjeevan in organizing these exhibitions. Since these exhibitions, many print media personnel, experts, and policymakers have started taking an interest in camel pastoralism, especially the Kharai breed of camels.

13. Newer avenues of sustenance

Camel pastoralism is relatively stable in Kutch district. However, Sahjeevan is constantly finding new ways of engaging with the government, citizens, and herders to build a strong foundation for the future. Some additional areas in which Sahjeevan plans to work in the future include:

- *Camel safaris* – Camels can reach where cars and other animals cannot. Safaris and camel tourism can sensitize people in general to the importance of camels in the local economy and ecology, while also allowing the public to enjoy the attractions and charms of rural life.
- *Herders as conservators* – Camel herders possess incredible knowledge of the local landscape and hence should be formally recognized as ecological conservators. Such formal recognition comes with the responsibility as well as the ability to conserve the landscapes that sustain camels.
- *Herders as artisans* – Some camel herders are excellent artisans too, and their products can find a premium market if they are marketed properly and positioned well.

14. Conclusion

Camels are wonderful animals. Their resilience and ability to reproduce makes them extremely valuable animals. It is unfortunate that in this regime of cheap oil, the products of camel pastoralism have come to be devalued. However, the fact that herders continue to subsist and find newer economic opportunities in spite of the changing environment and the difficulties they face is a vivid example of the robustness of the system. While readily available and relatively affordable petroleum may seem to address many of our requirements—textiles, transportation, and food (grown with pesticides and chemical fertilizers)—this is not an ecologically sustainable, or even economically viable, option in the long run. Camel herding is an ancient trade, but that is not the only reason why it deserves to be conserved. It has been scientifically proven that herding is beneficial to the environment unless this practice is put under artificial stress. Citizens, especially young people, and the authorities of this country need to look at pastoralism with a fresh perspective, taking into consideration the skills of herders, the ingenuity of herding communities, and the many positive values and advantages of a pastoral system for India's ecology and economy.

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About Sahjeevan

Sahjeevan is a developmental organization based in Kutch district in Gujarat, has been working on ecological issues for more than 25 years. Sahjeevan began working with pastoralists in Kutch in 2007, and since then its efforts have gained significant traction in supporting pastoralism in Gujarat, especially in Kutch. Sahjeevan's activities have been vital in the formation of multiple pastoral community-based organizations (CBOs), registration of climate-resistant pastoral breeds, upholding of pastoral rights, and generation of livelihood opportunities for pastoralists. These activities have won Sahjeevan both national and international recognition.

The Centre for Pastoralism is a Sahjeevan initiative. It undertakes research on a host of activities, primarily through partnerships with grassroots organizations across India.



Setting the Context

II. Case studies on Healthcare

This section of the Case Study Compendium includes two case studies that describe health interventions that are very different from one another. Both interventions are critically important given the range of health needs that we face, and they have shown by example that it is possible to address complex issues effectively. The evidence shows that we are in the middle of the 'Health Transition' and are currently facing a double disease burden: there is a continuing burden of communicable diseases such as Tuberculosis, dengue and water-borne diseases; at the same time, there is a growing burden of non-communicable diseases such as heart disease, cancer and stroke.

The treatment approach to these two categories of disease is quite different: for communicable diseases, usually the symptoms are acute and need immediate medical care. Adherence to the treatment protocol is key to achieving a complete cure. Non-adherence can have serious repercussions, including relapse and (particularly in the case of TB) drug resistance. The consequences of this are debilitating, even life-threatening. In the case of non-communicable diseases (also called 'lifestyle diseases'), the challenge is to get patients to not only take medication for the long-term – sometimes for the rest of their lives – but also to make sustained changes in their diets and lifestyles to support the medical regimen. This requires an effort: to quit smoking or drinking alcohol, or exercise regularly, or eat more vegetables is not easy without a larger eco-system that provides the necessary social support.

The case study on the TB Careline of the Karnataka Health Promotion Trust describes an initiative that goes to the heart of TB care. Despite the longstanding efforts of the Revised National TB Control Program, TB continues to be a serious cause of morbidity and mortality in India. Statistics published by the World Health Organization indicate that almost 2.7 million new cases of TB are detected in India every year, with an estimated 400,000 deaths. TB Treatment is relatively long drawn out, in that it takes a minimum of 6 months. After the first couple of months, patients tend to feel a lot better, and the most obvious symptoms of the disease disappear. The treatment is harsh and takes a toll on the body – loss of appetite, change in skin color and

tiredness are some of the side effects. As a result, patients tend to stop taking their medicines, significantly increasing their chances of becoming resistant to future treatment. Due to the stigma attached to the disease, they have few options for counseling and support that are both private and reliable.

The 'Mitra' TB Careline fills this gap by providing confidential counseling, a way for patients to get back on their treatment regime and loops back to their healthcare provider to give them an update on their patient's status. During the Covid-19 pandemic, when patients were unable to access regular care due to lockdown or other reasons, the helpline was able to reach out to their clients and continue to provide them with services. Leveraging the growing IT capabilities, the TB Careline has shown that technology can be combined with care and compassion to make a real difference in health outcomes. By partnering with the government at the state and central levels, KHPT has been able to integrate their helpline approach into the government's framework, thus creating the possibility of long-term sustainability of their approach.

The second case study describes an intervention that is designed to provide familial support for people suffering from chronic conditions that are not amenable to quick cure. The stress of such conditions on both the patient and their families is tremendous and require guidance on coping mechanisms to help them manage the situation. Non-communicable disease (NCD) burden is growing rapidly in India, and it is estimated that 1 in 4 Indians is at risk of dying before the age of 70 due to NCD. The risk factors for such diseases – rates of high blood sugar, hypertension, tobacco and alcohol consumption, among others – are also showing a growing trend, which does not bode well for the future. Another challenge faced by the health system is the shortage of human resources, whether it is doctors or nurses or outreach workers, who could provide the caregiving support that families need. In their absence, families are left without knowledge or resources on how to deal with the medical condition of the loved ones.

The Care Companions Program (CCP) launched by Noora Health recognizes the important role played by family members in helping patients with such chronic diseases to come to terms with their condition as well as make the changes needed to put them on the road to recovery. Since this is an effort that has to last their lifetime, the need to maintain such sustained effort can take a toll on both the patient themselves and their family. The CCP is designed to allay the fears and anxieties of family members and provide



them with awareness and skills to be proactive and knowledgeable care givers. There is evidence to show that such training contributes to reductions in mortality as well. Using available opportunities, such as hospital waiting rooms, CCP has been able to reach out to an impressive number of people: starting in 2012, they now work with a network of more than 150 institutions and have trained more than a million patients and family members in CCP.

These two examples document interventions that are practical as well as scaleable. In fact, both have been implemented at scale, and can be further replicated widely. Allocations to the health sector continue to be extremely low in India, which affects many aspects of health system functioning. Continuity of care is one of the casualties of the system – whether it is in terms of treatment adherence, or care and support, the health system is not equipped to do it effectively. These two case studies show that it is possible to build both access to and quality of care in the health system even in the face of a resource crunch.

II.A: The Care Companion Programme: Transforming Waiting Families into Skilled Caregivers at Hospitals in India

Noora Health²⁰

Joseph Dayal, 43 years old, has two addictions.

He is addicted to streaming Kannada, Tamil, and Telugu films on his mobile phone. He grew up watching the actor Rajnikanth. A small poster of the South Indian superstar hangs from a ledge in his house, just below the family’s home shrine to the Virgin Mary and St. Anthony.

Dayal also loves coffee, a taste he developed as a child. His mother would prepare an after-school snack of tea or coffee and peanuts. As an adult, Dayal began and ended his day with a sugary coffee, drinking up to eight cups daily. He worked for 20 years at a printing press, but for the last decade he has been running a tea and coffee shop in Bangalore’s J.P. Nagar area.



Figure 1: Turning hospital waiting rooms and wards into classrooms

“When people call me to join them for a smoke, I tell them, ‘You go and enjoy and I’ll see you enjoying,’” said Dayal. “If you’re relieved by smoking, I’m relieved by drinking tea.” Constant exposure to secondhand smoke and to high levels of dust and pollution at his roadside stall helped contribute to a serious health condition.

²⁰ Contributed by Ms. Mary Rose Abraham



It began in late July 2012. Dayal had pain in his chest for two days. Thinking these symptoms were just the effects of mere heartburn, he took a few antacid tablets. But the pain persisted, a burning and tightness that he said “felt like wringing water out of wet clothing”. His wife, Fathima Mary, 37, who goes by the name Selvy, remembers that he even fell unconscious on the street. The neighbours were perplexed. Although they recalled Dayal being drunk, they vouched that he neither smoked nor drank alcohol.

A doctor at a nearby clinic advised that he go to the hospital immediately. Dayal spent five days at Sri Jayadeva Institute of Cardiovascular Sciences and Research, one of the largest cardiac centres in Asia. A check-up and ECG revealed that he had suffered two minor heart attacks. He was treated with a drug to break up blood clots that were blocking 30 per cent of his artery. And he was prescribed the same medication as a tablet to be taken six times a day. It helped prevent the blockage from increasing.

Dayal took his medicine faithfully. And he visited Sri Jayadeva Institute every three months or so for check-ups that would take nearly the entire day and cost about Rs. 1,000 each. Dayal closed his tea stall on these days, losing an income of about Rs. 800 each day. His wife insisted on accompanying him and consequently she also lost the wages she earned as housekeeping staff at a school. Selvy had to sell off some of her jewellery and took an advance on her salary to pay for Dayal’s check-ups.

Like most large public hospitals in India, Sri Jayadeva’s medical staff must contend with the burden of overcrowding. With several dozen people waiting to see him, the cardiologist usually had only 10 minutes for their appointment. He gave them as much information as he could in that short time. “The doctor was friendly, but when I asked him what is the actual health condition, he would say that everything looks fine and your husband’s heart is fresh,” said Selvy.

Dayal went to doctors at local clinics as well. They did not explain why he needed to take the medicine, nor describe the complications that could arise if he didn’t. The drugs were also a financial burden on his family. Finally, he stopped taking them altogether in January 2019. The chest pain gradually returned and he was admitted once again to Sri Jayadeva in July 2019.

But this hospital visit was different.

Dayal and Selvy were in the ward when a nurse, Naveen Kumar, came through, inviting everyone to join him in the hallway outside. About 80 people gathered and the nurse began a 45-minute presentation on cardiac care, including causes, symptoms, and lifestyle and diet changes. He played a video and periodically stopped to explain the medical concepts that were covered in the video. Afterward, he invited patients and their families to ask questions.

Selvy had many questions, but didn't feel comfortable asking them in front of the group. Two days later, when Naveen Kumar visited the patient in the neighbouring bed, Selvy and Dayal requested his help. He spent more than 20 minutes with the couple, answering questions.

“Joseph doesn't have diabetes, and he doesn't smoke or drink,” said Naveen Kumar, a cardiac specialty nurse with 10 years of experience. “It could be the effect of pollution, cholesterol levels, or stress.”

Kumar told the couple not to focus too much on the cause of Dayal's cardiac condition, but instead counselled Dayal to take his medication and to make sure he got regular angiograms. He also advised the couple on lifestyle changes.

Selvy took that advice seriously. No more spicy food. No more meat. And less butter and oil in Dayal's diet. Selvy now packs fresh fruit for Dayal for his workday. The family eats fish and lots of fruits and raw vegetables. Selvy said their children, Dayalreena, 18, and Alvin, 14, insist that their mother should cook the food that is best suited for their father's needs and assured her that they would adjust to the new diet regimen.

Selvy also believed that Dayal's caffeine habit was not good for his health and helped him break his addiction. Although he continues to be surrounded by tea and coffee all day, he only drinks one cup of either beverage at night. He continues to take his tablets, now that he has learned about the importance of his medication. Selvy also noticed a change in her husband's demeanour, from being angry and tense earlier to being mostly calm now.



Figure 2: Family members as skilled professionals



“The session at the hospital was so useful,” said Selvy. “No one has ever explained what is happening with his condition. I want to know this information not just for my family, but also to share it with other families. I have seen a lot of people at work, as well as my older sister and my mother, who have lost their husbands early.”

The hospital session that Dayal and Selvy attended is the central component of a pioneering social and medical intervention called the Care Companion Programme (CCP).

The programme recognizes the crucial role of family members in the well-being of a patient.

The programme recognizes the crucial role of family members in the well-being of a patient. But beyond just this recognition, it also empowers them with high-impact medical skills so that they can step up to join doctors, nurses, and hospital staff in healthcare delivery. The patient’s family is often left waiting around the hospital, worried about a loved one’s prognosis and often frustrated because of a lack of awareness and knowledge about medical procedures. CCP transforms hospital hallways and waiting rooms into classrooms where family members are taught to become skilled caregivers. The aim is to establish family caregiving as a standard of care in India and around the world.

CCP was conceptualized and designed by Noora Health, a social venture, and works through local partners, including hospitals and non-profit organizations. Since the programme was first implemented in 2012, it has expanded to more than 150 government and private hospitals across four states in India. By the end of 2019, more than half a million family members were trained as caregivers. And in 2020, already a million patients and family members have been trained through CCP.

India particularly needs specialized healthcare programmes like CCP. The country spends a mere 1.15 percent of its GDP on health, one of the lowest in the world. Coupled with a population of 1.3 billion people, this minuscule resource outlay leads to a tremendous strain on public health services. The country also does not have enough healthcare professionals. While the World Health Organization (WHO) norm is one doctor for every 1,000 people,

India has only one doctor for every 2,000 people. The shortage means that a patient will spend an average of just 2.5 minutes per visit with a healthcare professional.

The dual burden of disease is also a factor. While India still faces the communicable diseases commonly found in the developing world, the rates of non-communicable and chronic conditions typically associated with the developed world such as heart disease, cancer, diabetes, and hypertension are also escalating. An article in the October 2018 issue of *The Lancet* pointed out that the problem is exacerbated because of “multiple chronic conditions and the fact [that] many remain undiagnosed due to lack of awareness and insufficient health-care access.”

Every year, 1.4 million children under the age of five die in India. The WHO says that 70 per cent of these deaths—mostly from pneumonia, diarrhoea, and other health problems—could be prevented or treated with access to simple, affordable interventions at home. In addition, 44 per cent of trauma patients have to be readmitted to hospital because of preventable wound site infections.

Training family members to assume some healthcare responsibilities at home is an opportunity to minimize deaths and to reduce health complications.

There is evidence that CCP has helped in this regard. CCP is implemented alongside rigorous monitoring and evaluation practices. Additionally, the organization has partnered with the Stanford Center for Health Education and Ariadne Labs (a collaboration between the Boston-based Brigham and Women’s Hospital and the Harvard T.H. Chan School of Public Health) to research the programme.

A study in the October 2019 issue of the *Journal of Global Health Reports* reported the effect of CCP on patient health outcomes in a cardiac care hospital in Kolkata.² There was a 71 per cent reduction in post-surgical complications, along with an increase in the health knowledge of caregivers. Other studies have shown positive outcomes for infants, including an 18 per cent decrease in neonatal complications and a 42 per cent decrease in neonatal inpatient readmissions.³ Dr. Anand Bhat is professor of cardiac surgery and medical advisor to CCP at Sri Jayadeva Institute. He believes the programme helps him take better and more efficient care of patients because their basic questions are answered up front.



“I’ve seen a big change in the mentality of family members,” said Bhat. “Earlier, they were so fearful about the patient’s condition and treatment. But that apprehension has come down significantly after the programme.”

The CCP practised in the hallways of India’s hospitals has its origins half a world away, in the corridors of Stanford University’s Hasso Plattner Institute of Design.

Four graduate students—from the fields of medicine, public policy, and engineering—met at an interdisciplinary class, ‘Design for Extreme Affordability’, 4 in 2012 to create human-centred solutions for healthcare needs in low-resource settings. They were assigned to a project with Dr Devi Shetty, a cardiothoracic surgeon who founded Narayana Health, a chain of hospitals that has brought high-quality, low-cost cardiac care to large populations in parts of India.

In March 2012, they visited the Narayana Institute of Cardiac Sciences in Bangalore and talked to nearly all the hospital’s stakeholders, from doctors to security staff. Although they initially focused on managing patient flow and reducing crowding, another idea soon took over. The idea of CCP originated from conversations with Dr Shetty, doctors, nurses, patients, and from everyone interacting with the hospital system.

“The watchmen gave us the crux of what we are focusing on now,” said Dr. Shahed Alam, who is now the president of Noora Health. “They shared with us the insight that the people who are here the most [often] are the families. And they talked about how families spent most of their time waiting.”

The four graduate students decided to focus more on the family members rather than the patients. They noticed that a lack of understanding and knowledge was manifested among the patient’s relatives as a palpable sense of anxiety and frustration in the waiting areas. They did see nurses trying to educate the family members about follow-up healthcare procedures and medication, but the conversations were usually very short, lasting for just a few minutes, and that too when the patient was being discharged. The need to address the lack of proper communication with family members led to the first step in the design thinking of CCP—understanding and empathizing with the user.

From one perspective, the masses of waiting people could be seen as merely crowding the hallways, or even a source of infections for highly susceptible patients. But Dr. Alam said that he and his classmates' open mindsets helped them experience a collective 'aha moment' that this was an excellent opportunity to improve the healthcare system through an innovative approach.

Indeed, someone was already practising a version of CCP. Anand Kumar was a nurse in the ICU at the Narayana Institute of Cardiac Sciences in Bangalore. He saw many patients post-surgery, disoriented from the aftereffects of anaesthesia, often pulling out feeding tubes, and dealt with worried relatives during the restricted visiting hours. When he shared the problem with a doctor, they decided that Kumar should conduct an ICU orientation. After his shift hours, Kumar gathered all the patients who would be undergoing surgery the following day, and their family members, and explained the procedure and described what to expect afterwards. He used photos of the ICU and of the various tubes and monitors as visual aids during his 10-minute presentation. As a result of the two or three classes that he held every day, Kumar said that tube-pulling and other unwanted incidents were greatly reduced. When he was shifted to the general ward, he continued the orientations and also added sessions on t Warfarin, a medication to treat blood clots.

The students observed this early training programme and were determined to build on it, to standardize it, and to scale it. After leaving Bangalore, they relied on Kumar to test the prototypes.

Kumar remembers this task as initially very challenging. He went from family to family, trying to convince them about the advantages of learning more about the healthcare procedures of their loved ones. In the end, he could gather only five people.

One of the first was an older woman who was caring for her husband after cardiac surgery. Kumar taught her how to reduce his chest pain, how to get him out of bed without disturbing the surgical site, and, once they got home, how to prevent him from squatting by adapting a chair for his use in the toilet. These were all simple concepts, but could result in complications if not followed correctly. Right after the class, Kumar saw that the woman had placed a pillow on her husband's chest, just as he had instructed. By the second day, word had spread and 15 people lined up for his class.

The prototypes were carefully designed not only to determine if people had learned the concepts, but also to assess if they could perform and retain the actions and procedures related to the concepts, and whether that learning could be tracked. By the end of the Stanford University course, the students had created documentation of the learning process and of the training material, including flipcharts and videos. The change they wanted to see was family members and patients walking away with more knowledge and less anxiety, and ultimately ensuring better clinical outcomes.

The next challenge was actually implementing CCP. Dr. Shetty was on board with the idea of engaging directly with families and caregivers, and he invited the students to pilot the programme at his hospital. In summer 2012, Dr. Alam and his classmate, a medical student, Jesse Liu, returned and found that navigating the logistics in an entrenched hospital system was the biggest hurdle. They would convince one security guard to allow families to gather in a space, but the next day, he would be replaced by another guard and the new man would need to be persuaded all over again. Another difficulty was finding suitable space for a large group of people in a crowded hospital. But once the family members were brought together, they saw the positive effect of the programme.

“We saw people’s eyes light up,” said Dr. Alam. “It felt really magical. I still remember the initial comments. We were teaching about vital signs and checking the patient’s pulse. Being able to physically feel a patient’s pulse allowed family members to feel like they finally got what’s happening.”

Dr. Alam and Lui still got pushback on logistics and timing, so the classes were erratic, but nevertheless they wanted to make sure the programme continued at this hospital as well as at others. Stanford University provided some seed funding to create videos and to cover travel expenses. Soon there was a fresh opportunity to set up CCP in another setting: Dr. Shetty’s new hospital in Mysore, Karnataka.

Alam, Liu, engineering student Katy Ashe, and public policy student Edith Elliott made additional visits to integrate health education into this hospital’s patient care system before the arrival of patients and family members. These and other experiences convinced the four that they had created something impactful and they felt compelled to establish it as their own full-time venture. Noora Health was named after one of the first family members with whom they interacted.

In 2014, Noora Health was incubated at Y Combinator, the Silicon Valley-based startup accelerator. In 2016 and 2017, Fast Company magazine included Noora Health in its rankings of the world's 50 most innovative companies.⁵

“The core concept of what we do is something that hardly anyone ever pushes back on,” said Dr. Alam. “The reason we have been able to scale because the value and importance are something that people inherently understand.”



Figure 3: Nurses conveying informations

Although concentrating initially just on families, Noora Health soon recognized that another key element of CCP was the trainer. For CCP to be truly integrated into the hospital system, the trainers imparting CCP would necessarily have to be the staff nurses. This meant convincing them not only of the benefits of educating the family but also the importance of incorporating classes into their already overburdened workdays.

Noora Health created a whole new curriculum for CCP training and then looked for someone to train the nurses. By this time, Anand Kumar had left the Narayana Institute of Cardiac Sciences and eventually moved to New Delhi to work at the All India Institute of Medical Sciences (AIIMS), a premier government hospital. But he flew down to Bangalore at Noora's request. He instructed nurses at the private Manipal Hospitals chain in Bangalore. When Noora began to focus on introducing CCP in government hospitals, Kumar left New Delhi altogether and became one of Noora's first hires.

Kumar now leads the training and certification programme, overseeing the training of nurses who will then go on to train other nurses at their respective hospitals. This training-of-trainers model allows rapid scaling as well as fosters a sense of ownership among the nurses teaching the families. Since the inception of the programme, Kumar has trained more than a thousand nurses directly, and 1,500 indirectly.

Over three days, the nurses learn the CCP methodology and each step of the design, in addition to the medical content. A priority for the training programme is to train nurses to convey information effectively, and to teach them communication and public speaking skills. Kumar points out that

adults don't respond to lecturing, and accordingly advises nurses to engage their audience by moving around and encouraging individuals to come forward and participate in demonstrations. Also helpful in ensuring audience engagement is appreciation, such as a compliment or applause. Finally, the nurses put what they learn to the test with a live CCP demonstration with family members.

Especially in government hospitals, patients and caregivers may have little or no formal education.

Attending CCP may be the first time they are learning health concepts in a formal setting, which can be both confusing and intimidating, leading to frustration and despair. Hence, an important part of the nurses' training is developing empathy and patience. This is done through two activities. In the first activity, 'Face Challenge', Kumar shows photos of the faces of five people and asks the nurses to identify the individual who they believe can best understand medical topics. While they may look ordinary, each of the five individuals is a recipient of one of India's highest civilian honours, the Padma Shri award. The takeaway is that biases based on appearance alone lead to judging a person from the outset, and this determines to a large extent your attitude to that person and what and how you communicate with that individual.

In the second activity, Kumar asks nurses to follow his directions in cutting a piece of paper. He speaks in rapid English, complicates the instructions by adding mathematical details, and refuses to repeat his instructions or help the nurses if they get confused, or lost in the middle, or fail to keep up with the pace he has set. This activity helps the nurses realize that family members may similarly get confused and not understand their instructions, especially if they rush through the job of explaining hitherto unknown procedures and outcomes. Communicating clearly and directly in simple language, and including concrete examples and easy-to-follow



Figure 4: Training sessions through WhatsApp

demonstrations, will help family members not only understand the concepts but also practise healthy behaviours at home, thus ensuring positive outcomes for the patient.

Once these master trainers go back to their hospitals, the Noora staff observes them training other nurses to ensure quality of instruction. The programme is not foolproof. Although they may start out enthusiastically, nurses can succumb to the pressure of constant staff turnover and are faced with a heavy burden of work. Noora's design team tries to motivate them through a dedicated WhatsApp group and periodic sessions for re-training. In Karnataka, an incentive model has also shown favourable results, where master trainers receive Rs. 50 for each session they conduct.

Another incentive for the nurses is the time and effort they can potentially save through CCP. Kumar points out that nurses have always counselled families during the discharge process, such as providing instructions on medications and diet. "That takes an average of 150 minutes every day," he explained. "But patients are very distracted when leaving the hospital and a study shows that most medical information is not retained."

At Vanivilas Women and Children Hospital, nurses report that 10 percent of their work is apportioned to family caregivers because of CCP. And there has been a 7 percent reduction in infections of the urinary tract, umbilical cord, and surgical site.

"I was reluctant at first," recalled Dr Geetha Shivamurthy, medical superintendent of one of the oldest government hospitals in Bangalore where more than 12,000 babies were born in the past year. "Because I thought a non-governmental organization would hinder our operations. For six months, we had close monitoring of the Noora team. We developed trust."

CCP is now run in the pre- and postpartum units, with up to three classes a day. The sessions focus on personal hygiene, breastfeeding, nutrition, and Kangaroo Mother Care (KMC), in which babies are given skin-to-skin contact with a caregiver, usually the parent. An additional component is busting superstitions and combatting traditional misconceptions. With little access to medical information, families often rely on traditional wisdom passed down from grandmothers, mothers, and mothers-in-law—practices that may harm the new mother and baby.

Noora Health, in collaboration with its implementing partners, has launched CCP in Karnataka, Madhya Pradesh, Maharashtra, and Punjab.

Noora Health, in collaboration with its implementing partners, has launched CCP in Karnataka, Madhya Pradesh, Maharashtra, and Punjab. Specialized CCP classes address cardiac, cancer, general inpatient, antenatal, postnatal, and high-risk newborn care. And CCP continues even after a hospital stay. Families get additional support at home, through WhatsApp and phone calls, so that their questions are answered, their doubts are clarified, and they are reminded of the skills they have learned.

CCP is expanding quickly, both in terms of numbers as well as content. The number of hospital partnerships for the implementation of CCP has increased by seven times between June 2018 and 2020. Although CCP was first introduced in private hospitals, the focus is now on expanding the programme to government district hospitals and medical colleges where the need for health education for patients and their families is the greatest. That means forming partnerships with state governments. This is followed by an extensive period of needs-finding, which allows the staff to customize the content to the particular language, culture, and health conditions of the area.

CCP continues to expand across the country, adapting to new settings in new states, as well as beyond India. Noora Health is in the process of initiating pilots in Bangladesh.

Ultimately, while the intervention and the goals themselves are simple, what CCP is attempting to do is difficult. In addition to prioritizing the role of family members as the most empathetic caregivers for loved ones, there is also a focus on building and encouraging long-term, sustainable health behaviour change among families and patients.

“We invest a lot in monitoring and evaluation to show how CCP is helping patients and families adopt healthy practices,” said Nikhil Ramnarayan, Noora’s chief of staff. “So we believe that this kind of evidence will help us scale and influence health systems, not just in India, but also around the world.”

1. Appendix: Stories of Users of Noora Health Services

On the ground floor of the sprawling hospital is the eclampsia ward, for mothers who developed high blood pressure during pregnancy. But somewhat inevitably other cases have spilled into the ward as well, an overflow from the chronically crowded hospital.

Nagina Taj, 28, is sitting on the bed with her infant daughter, Ahana. She had gestational diabetes but a normal delivery. Her older child is six years old. During that pregnancy, nobody guided her about food or diet. Taj's sister has been staying in the ward with her. They both attended an antenatal CCP session in which they learned about watching the baby for signs of jaundice and the importance of breastfeeding and nutrition. Earlier, Taj believed the misconception that pregnant women shouldn't eat fruits nor consume much protein, but will now add bananas and eggs to her diet.

A few feet away, Chandrika (who goes by one name), 31, is cradling her baby, her third child, on her lap. She developed placenta previa, a condition that can cause severe bleeding during pregnancy and childbirth. Her son was born prematurely. But the KMC techniques that she and her mother learned in a CCP class have helped the nine-day-old baby to slowly gain weight. Chandrika studied only until the seventh standard. Her mother-in-law insisted that she restrict her water intake and calories during her pregnancies. She was only allowed to drink water at mealtimes. In CCP, she learned that less water intake could lead to constipation and also learned the importance of a good diet. Although she knows her mother-in-law will forbid her from eating fruit, she insists that she now has greater agency and control over her own health and dietary choices.

"I am determined to do what's right for myself and my baby," she said. "When my mother-in-law goes out, I will go and eat fruit."

A commotion breaks out near the entrance of the ward. Neelamma, 30, and her mother, Lakshmi Narasimha, are preparing to leave the hospital with the former's 23-day-old baby. But even as they are packing up, a nurse brings in another woman in a wheelchair. The new mother insists on lying

down, but Narasimha shouts that they need more time to pack up and leave. The hospital's 536 beds are not enough to serve its large patient population. Pregnant women with complications are referred to Vanivilas from nearly all of Karnataka.

That was the case for Muskan Bhanu. The 18-year-old lives with her husband and four other family members in a comfortable third-floor flat in Gauribidanur, a three-hour drive from Bangalore. As the youngest of five sisters, Bhanu is quiet and reserved, letting her older sisters, Mousina and Mujaseem, do the talking.

In the seventh month of pregnancy, Bhanu's legs and hands swelled. The local clinic diagnosed her with high blood pressure and referred her to Bangalore's government hospital.

To beat traffic and avoid crowding at Vanivilas, the family hired an ambulance for Rs. 2,000 and transported Bhanu in the middle of the night. After two days, her blood pressure stabilized, but then shot up again. Doctors at Vanivilas were cautious about treating her condition and could not promise that both mother and baby would survive. Bhanu's labour was induced in her seventh month. She saw her baby for a few moments before the 1.2 kg boy was fitted with an oxygen mask and whisked away to the neonatal intensive care unit. After a week, Bhanu finally got to hold Syed Saad. He was only as long as her forearm, and she was scared to cuddle the tiny baby.

Mousina and Mujaseem took turns staying with their youngest sister in the hospital, sleeping under her bed in the ward. They were in the hospital for 40 days.

The day after Bhanu's delivery, Shanthi S., the trainer at Vanivilas, came to the ward to invite them for a CCP session on postnatal care. Here they learned about signs of respiratory distress, care of the umbilical cord, breastfeeding and burping, and superstitious beliefs that could harm the baby, such as feeding it honey. During her pregnancy, Bhanu did not drink milk or eat fruits, because of a myth that these foods would give her a cold. But the video that Shanthi S. played during the class stressed the importance of eating fruits and vegetables. Bhanu even joked that if her husband, Syed Tabriz, bought vegetables and cooked for her, then she would eat them. He also attended a CCP class.

“It was a really useful class,” said Tabriz. “I started KMC three days after his [Syed Saad] birth. And once we got home, I changed the lightbulb in the bedroom to a 200-watt bulb so it’s warmer for the baby.”

Thanks to regular KMC by both parents at home, baby Saad’s weight has increased to 1.9 kg. A large bottle of hand sanitizer sits in front of the television. Although older relatives resist, the parents insist that visitors sanitize their hands before touching Saad.

As the oldest, Mousina is the unofficial midwife of the family, having accompanied all four of her sisters during their deliveries, and helping to care for the babies afterwards.



Figure 5

“Because of Saad’s condition and what I learned in the class, I have gained confidence for the future,” she said. “When my baby had loose motion, I would take him immediately to the doctor. But now when Saad gets it, I know what treatment to give.”

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About Noora Health

In 2014, we launched Noora as a small group of individuals driven to redefine healthcare. A simple question inspired us – “knowing that patients look to their families for comfort, why not give families the best chance to support them?” We found that families, who care most for their loved ones, could help dramatically improve health outcomes of patients. By equipping them with key health skills, these families could be the keystone to ensuring proper recovery in the hospital and post-discharge at home.

Over the years, Noora has transformed into a collective of subject matter experts, designers, and technologists - all tirelessly striving towards empowering people to become agents of their own health outcomes and wellbeing.

II.B: Counselling and Care on Call: The Story of the TB Careline

Karnataka Health Promotion Trust (KHPT)²¹

Tuberculosis (TB) is the top infectious killer in the world, and India accounts for about a quarter of the 10 million cases that occurred in 2017. TB patients are required to take a minimum of six months of treatment. However, due to an abatement of symptoms or uncomfortable side effects, they often stop taking medication, thereby raising the risk of the TB bacteria developing a resistance to drugs and becoming more difficult to treat. While TB patients are offered in-person visits by government facilities to monitor treatment adherence, many do not opt for this service because they fear being ostracized by their neighbours and relatives. Mitra, a free-of-cost phone-based ‘TB Careline’, provides not only information about TB to patients opting for the service, but also counsels them, links them back to treatment if they discontinue it, and provides feedback to providers about their patients’ status. It is staffed by a team of trained counsellors, and has been operated by KHPT since 2014, reaching out to an average of 500 new patients in Karnataka every quarter. The Careline has reached out to 15,989 patients between April 2014 and September 2020, with 7,647 patients completing treatment.



Figure 1 TB Careline

The service has proved to be flexible and adaptable to the requirements of the health system. The Careline has transitioned from reaching out to patients in the private sector to providing counselling and information about accessing new welfare schemes to all patients registered with the national registry. During the Covid-19 lockdown, counsellors continued to provide outbound call services from their homes in the absence of public transportation, and included updated and accurate information about Covid-19 and its risks to all registered TB patients. The TB Careline has the potential to be scaled up in a

²¹ Contributed by Vrinda Manocha and Dr Prarthana B. S.

cost-effective manner while continuing to provide pertinent information and counselling services to TB patients and caregivers, and also adapting to the emerging needs of communities as well as the health department.

1. Introduction

The TB Careline is based in a modest office located off a busy road in Dharwad city, Karnataka, 400 kilometres from the state capital of Bengaluru. It is a single room on the first floor of the Karnataka Health Promotion Trust (KHPT) office, a bungalow on a residential street. At first glance, it appears to be the average office set-up, the usual mix of monitors, headphones, and desk chairs that say nothing about what the people who work there actually do each day. It is at 9.00 a.m. when five women arrive, plug in their headphones and pull up long lists of numbers that the place begins to buzz, turning into a hive of activity. For it is from this office that these five women, counsellors of the TB Careline, make calls to over 2,552 TB patients across Karnataka, offering treatment monitoring and counselling services free of cost.

Telephone-based counselling on matters of health is not uncommon; a number of services offer support to people with issues of mental health and addiction. Even more common are telephone helplines that offer one-time information when a patient reaches out for it. However, the success of the latter depends on the patient's initiative, access to phones, and a basic understanding of their condition. TB patients do not always fit the bill.

TB is the top infectious killer in the world today, with India sharing a quarter of the global burden of 10 million TB patients (see Figure 2). Ending TB's run is a top priority of the Government of India, which has pledged to eliminate TB in the country by 2025 through the intensive efforts of the National Tuberculosis Elimination Programme, in collaboration with non-profit partners and the corporate sector. However, even with all the house-to-house campaigns, the provision of free testing and treatment and nutrition support to TB patients, the disease persists, mutating into drug-resistant forms and attacking the poorest and most vulnerable populations living in crowded and badly ventilated parts of the city.

The message that the government has consistently put out is that if a person has a persistent cough for two or more weeks, they should get themselves tested. However, the collection of lung TB symptoms—cough,

fever, joint pain, night sweats—is rarely enough to send people running to the doctor asking for a sputum test. Indeed, a study conducted by KHPT in Bengaluru in 2017 found that the delay between the onset of symptoms and the initiation of treatment, due to a variety of factors, averaged 40 days.



Figure 2: Global TB statistics. Source: Global Tuberculosis Report 2020, WHO

That’s what happened to Sandeep, a 30-year-old man of slim build, whose active life of yoga and gym-going did not prepare him for the debilitating abdominal pain that hit him in early 2017. Sandeep, who worked at a factory creating parts for construction machines, went to a health provider in his village, who, he says, took little interest in his condition. Sandeep continued to work in an environment thick with dust, refusing to wear a mask because it irritated him. He became weaker and weaker until his employer noticed and took him to another private doctor. Sandeep’s abdomen was drained of fluid, and he was given an X-ray. “My lung was white on the X-ray,” he remembers. Sandeep was finally diagnosed with TB. His doctor assured him that TB was curable, handing him a green-and-blue card with a toll-free number and a symbol of clasped hands. The card read ‘DOTS Mitra’. (DOTS is the treatment strategy of the national TB programme. Putting DOTS Mitra together indicated that Mitra is supporting the national TB programme.)

2. Background and Evolution

The TB Careline was initially christened ‘Mitra’, meaning a friend or confidante who would provide helpful information about the disease and send reminders to take the medication, but, more importantly, be a source of emotional support to people who may not have understood their condition completely, or grasped why it was important to take medication.

Mitra was born out of an intervention conducted under the Strengthening Health Outcomes through the Private Sector (SHOPS) initiative, a project funded by USAID to improve access to, and increase the use of, health services through market-based models.

Encouraged by the results of a telephone counselling initiative for the consistent use of injectable contraceptives in 2010, SHOPS TB decided to expand the model to tuberculosis patients and healthcare providers (see Figure 3). In April 2014, SHOPS established the TB Careline, a phone-based counselling service for patients, which helped monitor their treatment adherence, provided them accurate information about the disease, and also counselled patients and caregivers throughout the treatment period, and for two years after the completion of treatment.

The SHOPS project created a network of private healthcare providers, and it was this network of 1,149 providers that handed out Careline cards to their newly diagnosed or returning patients, asking them to give the number a missed call. In some cases, the private providers would provide the patient details to the Careline counsellors, with the latter initiating calls to offer services to the patient. The Careline service also proved particularly useful for the private providers, who lacked the bandwidth to follow each of their patients individually; they received monthly updates from the counsellors on the treatment status of their patients.

The Careline service also proved particularly useful for the private providers, who lacked the bandwidth to follow each of their patients individually; they received monthly updates from the counsellors on the treatment status of their patients.

When the SHOPS initiative ended in 2015, it was continued through KHPT, which had established the TB Careline in Dharwad, Karnataka. With the trained team of counsellors in place, KHPT began to look for external funding to secure the future of the Careline, which was receiving calls from networked providers even after the closure of SHOPS. In 2016, Indegene Lifesystems Pvt. Ltd, a healthcare technology company, began to support the Careline operations as part of its corporate social responsibility (CSR) activities. KHPT brought Careline under the ambit of the Tuberculosis Health Action Learning Initiative

(THALI), a four-year project that began in 2016, aiming to facilitate access by vulnerable populations to TB care and support services from a healthcare provider of their choice, largely in urban slum areas. The project had aimed to continue engaging with private healthcare providers and registering their patients for follow-up and counselling. However, in September 2017, due to policy changes within the funding agency, USAID, a strategic shift put an end to private provider engagement in THALI.



Figure 3. The Careline number was earlier toll-free under the SHOPS project and patients were given the Careline card (first row), encouraging them to give a missed call to the number. The number is currently a mobile number (second row). The cards are also available in Telugu.

While the direction of the THALI project changed to facilitating TB prevention and care services through the government, the focus on patient-centred care and support remained the same. The Careline could no longer be promoted through private providers, but the awareness of such a service would be created through THALI’s cadre of community health workers, who worked in the urban slums in 24 districts in Karnataka and Telangana. Nevertheless, the networked providers continued to refer patients to the Careline even after engagement with private providers ceased, accounting for 500 new patients each quarter.

In March 2019, Karnataka state requested the Careline to call up patients in the private sector whose treatment outcomes were not known to enable linkage to nutrition benefits provided to public-sector patients. The counsellors were given a retrospective list of 14,312 patients to work through in two months; these patients had been registered with Nikshay, the national registry, in 2018. The counsellors managed to contact 8,476 patients of which 4,605 could not be tracked due to a lack of contact numbers, wrong numbers, or unreceived calls.

The accomplishment of this task and the feedback provided on the treatment outcomes of the patient reinforced that the Careline objectives aligned well with those of the national programme, and the Karnataka state government began to provide a list of private sector patients registered with the national registry every month. In 2019, the Careline counsellors attempted to track 7,866 private sector patients. The counsellors have followed up an additional 500 new cases each quarter with the provision of the patient list from the government.

The feedback the counsellors provided, not just on treatment outcomes, but also on the number of patients who could not be tracked, has helped the state authorities contact the individual private providers and encourage them to do a better job of collecting patient details. The counsellors have followed up an additional 500 new cases each quarter with the provision of the patient list from the government. In addition to counselling patients and monitoring their treatment adherence, counsellors have started telling patients that they are eligible for Rs. 500 per month from the government through the Nikshay Poshan Yojana towards nutrition support and asking them if they had availed of it. Some districts in Karnataka, based on the information provided, have registered these patients for the Nikshay Poshan Yojana Direct Benefit Transfer (DBT) scheme.

3. TB Patients and the Need for Follow-up

After his TB diagnosis, Sandeep was deeply disturbed. As a healthy, active person, he could not understand why he had developed TB. His parents, with whom he lived, were very upset to see their son bedridden and too weak to move. Sandeep would spend four months at home, unable to go to work, or even to move very much. He wanted to give up treatment, because he didn't think it was making him any better.

With a treatment period of at least six months and a mandate to not miss a single dose in case this lapse creates drug-resistance, TB patients often struggle to take their medication every day (see Figure 4). Patients may have to swallow two to six tablets at the same time each day, and then have to deal with debilitating side effects, which include nausea, fatigue, vomiting, jaundice, itching, rash, tremors in the hand, and red-coloured urine. The side

effects can put a person off treatment entirely, or it may result in days-long delays that prevent their recovery. On the other hand, the treatment may ease symptoms enough after the initial few weeks for the person to feel that they have recovered, and therefore believe that they do not need to take treatment any longer. In both these situations, patients can relapse, and if they are off treatment for more than a month, they will have to begin from scratch all over again.

The road to recovery can be long and gruelling, made more difficult by socio-economic factors like poverty, malnutrition, and stigmatization. TB is an isolating disease; patients have been stigmatized by their own families, co-workers, and friends for having the disease. This stigma continues even after they have completed

treatment. Families, who do not understand that the patient is non-infectious shortly after treatment begins, often place the patient in a different room, with different plates and bedding. During the THALI



Figure 4. A course of TB medication lasts for at least six months, making adherence difficult for patients (image is only for illustrative purposes).

project, it was not uncommon for field staff to come bearing tales

of women abandoned by their husband and his family, and separated from their children for fear that they would infect their families with TB, and that other people would get to know about it. These circumstances are enough to pull patients off their course of treatment and send them into depression.

The fear that the neighbours will find out that they have TB also prevents patients from seeking healthcare. TB patients do not want to be visited at home for fear that people will see a government healthcare worker and start speculating about why she is there. That is partly why they seek private sector care. Careline was instrumental in providing support to those who would not receive in-person care, but also needed follow-up. All they needed to have treatment support on the go was a mobile phone, or even know someone who did.

4. The Careline Call Process

Sandeep knew very little about TB at the time of his diagnosis. “(I thought) I had never had bad habits. So why did I get it?” he says. Sandeep had no mobile phone and his friend called the number on the Careline card. He would bring his phone over whenever the counsellor called, so that she could speak to Sandeep, giving him correct information about his condition and counselling him.

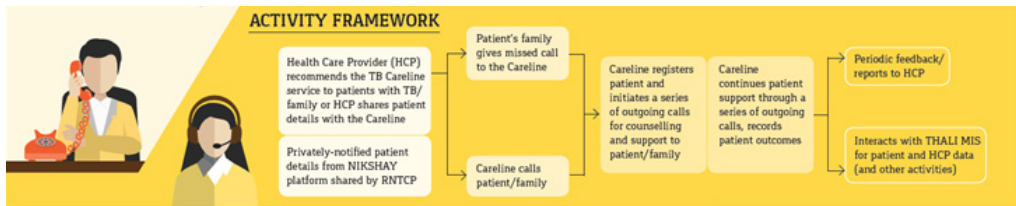


Figure 5. The Careline call flow

A patient given the Careline card is instructed to give a missed call to +91 73497 78223 (see Figure 5 for the Careline call flow). A Careline counsellor returns the call, and, based on the patient’s language preference, allots the patient to one of the counsellors, keeping in mind the existing call load of the counsellor and the counsellor’s experience. Each counsellor on the team is generally a graduate, and much of the training is done on the job. Counsellors are hired on the basis of their interest in engaging with patients. They are given a one-month trial period to understand their motivation and to see if they can handle long hours of talking to patients without ever meeting them. The TB Careline has five counsellors as of November 2020, and between them, they are fluent in Kannada, English, Hindi, Telugu, Urdu, Konkani, and Marathi. The first call to the patient is an introductory one; the counsellor says that she is calling from the Careline, explaining the purpose of the Careline, and registers the patient’s consent to be followed up by phone call. The next day, she calls the patient for the first session of post-diagnosis counselling, asking them if they have disclosed the disease to others, and if any of their friends or family members are showing symptoms.

Counsellors generally encourage TB patients to disclose their condition to family members, to avoid the stress of keeping the condition secret from their family and to enlist their support in taking treatment and in handling side

effects. The verbal screening of the patient's close contacts by counsellors is an important component of Careline services; the counsellor instructs the patient to direct their close contacts to a healthcare provider if they show TB symptoms. The first call generally takes five to ten minutes.

Treatment adherence in two minutes: A call transcript

Counsellor: *Namaste. How are you?*

Patient: *I am fine. How are you?*

Counsellor: *Are you taking your medicine?*

Patient: *Yes, I am.*

Counsellor: *Are you able to eat well?*

Patient: *I am able to eat three times a day, timely.*

Counsellor: *Don't worry about anything now, as you are able to eat well and you are taking your medicine regularly. Do you have any other problems now?*

Patient: *I have no problems now. I am feeling fine.*

Counsellor: *I am glad you are feeling fine, okay, okay . . . As you have planned, go back to your provider on the 4th because you're completing nine months of treatment.*

Patient: *Bye. I'll disconnect now.*

Patient's husband: *Excuse me, madam.*

Counsellor: *Yes, sir?*

Patient's husband: *We are going there [to the provider] anyway. But she is feeling perfectly fine and has no complaints now.* **Counsellor:** *Yes, I realize that she's doing well now, but you should finish your follow-up with the doctor and stop your medication only when he asks you to.*

For the full translation of the audio recording, see Appendix A.

Please note that names have been removed to protect patient privacy.

After the second call, the counsellor speaks to the patient once a week for the first two months of treatment (the intensive phase) and once in two weeks during the next four months (the continuation phase). Counsellors

ask patients how they are feeling, if they are taking treatment regularly, and if they are eating a healthy diet. If the patient says that they have missed treatment doses, the counsellor talks to the patient about how important it is to stay on course with the treatment and to reduce the risk of a relapse. When patients complain about side effects such as nausea, the counsellors tell them about simple home remedies such as drinking kashaya (a herbal health drink), and eating small meals a few times a day rather than one big meal, all the while encouraging them to stay active. If the side effects are severe, they instruct them to visit the doctor. Counsellors also remind them about routine visits for follow-up testing, and continually check that none of their close family members and friends have developed symptoms. Once patients have completed the treatment, the counsellors call them once a month for up to two years to check that they remain TB-free. Follow-up calls generally take two minutes per patient, seven to eight minutes if the counsellors advise them on coping with side effects.

Contact screening: Excerpts from a call

Counsellor: *How many people are there at home?*

Patient's father: *We are a large family, around 15–20 people.*

Counsellor: *Is there anyone over 60 years of age?*

Patient's father: *Yes, there is.*

Counsellor: *Do they have diabetes or any other disease?*

Patient's father: *Yes, they have diabetes.*

Counsellor: *Are they healthy or do they have any complaints?*

Patient's father: *They have no complaints.*

Counsellor: *Do any of them have symptoms like cough, fever, or not being able to eat properly?*

Patient's father: *Yes. They complain about not being able to eat properly.*

Counsellor: *Go to the nearest government hospital to get him/her checked.*

For the entire translation of the audio transcript, see the appendix.

The patient's name and details of the hospital have been removed to protect patient privacy.

The calls are made through a tablet computer, which has replaced the earlier system of using smartphones to make calls; the smartphones were overheating because of extensive daily use. While the calls to patients are not recorded, an earlier Excel-based monitoring system gave way in 2019 to a software programme that brings up their daily call schedules and allows them to track whether patients are taking treatment.

However, the counsellors do not provide medical advice, and if symptoms resurface or side effects worsen, patients are told to visit their healthcare providers immediately.

Careline counsellors are often asked for medical advice by patients who lack access to doctors or do not have the time to visit the doctor themselves. However, the counsellors do not provide medical advice, and if symptoms resurface or side effects worsen, patients are told to visit their healthcare providers immediately. TB counsellors are also mindful of not disclosing a patient's TB status if a caregiver or friend picks up the phone. It's a lot to remember, but with experience, exercising caution has become second nature to the counsellors. "The problems that patients have can't be shared with everybody. We are not doctors, but people open up to us," says Vijayalakshmi, a senior counsellor who has been with Careline since 2014.

5. Adapting Careline to Patients' Needs

The call flow, which specifies call frequency and procedures, may appear straightforward, but it must mould itself to the needs of each patient. Although the Careline functions between 9:30 a.m. and 5:30 p.m., six days a week, the Careline counsellors make and receive calls long after working hours, averaging about 50–70 calls per day. A TB patient may only get access to her husband's phone in the evening after he returns from work, and that is when the counsellors will have to call her. Patients may call to hear a friendly voice if they feel that they have no one to turn to (see Figure 6). "I have a patient with multidrug-resistant TB who lives alone in a big city," Sirisha, a counsellor who has been with Careline for two years, says. "Her ears are ringing because of the treatment, and she has reached a stage where she isn't convinced that she will be cured, even though she has had 16 months of treatment. She hasn't told her family that she is ill and is depressed." Sirisha has told the patient to call her at any time, and her phone rings twice or thrice every week with worried calls from the young woman.

Patients have called the counsellors even at 10:30 p.m., and the counsellors have never said no. Their families, too, have understood the importance of their work and do not have any objections to these late-night phone calls. If the patients are very young, or elderly, the Careline counsellors talk to caregivers about the patient's treatment adherence and often counsel the caregivers themselves for whom dealing with a close family member's illness is difficult. Elderly patients often have long conversations with counsellors, because they have no one else to speak to.

Then there are the difficult cases that require the counsellors to find ingenious ways to prevent the TB patients from putting the phone down permanently. Gracy, who has been with the Careline for just three months, has been dealing with a tough situation with a family living in central Karnataka. "The mother and one-year-old child have TB," she says. "The husband is blaming the wife for giving it to his son. His son is with him, and the wife is at her mother's place. He is not giving me her number." Gracy has been speaking to the husband, reassuring him that TB is curable and that many people have recovered completely. On just one occasion was she able to speak with both husband and wife on a conference call, where she reassured them both that the wife would recover if she took treatment. "He [the husband] is comforted when he talks to me, but he is still angry. I am working on changing his mind." Gracy hopes for a breakthrough that will allow the wife to come home to her family, a message that is sought to be delivered through repeated conversations on the phone.



Figure 6. The treatment period can be isolating for a patient, who may be stigmatized by the family and blame themselves for getting TB.

Shivamma remembers a case where she had to be inventive and resourceful in order to drag one of her patients out of depression. "She was just 20 years old. She was bedridden for two months, surviving on just juice. Her husband had had an affair and left her," she recalls. "She didn't think she would survive." Shivamma had to coax the patient to take her treatment and eat, while simultaneously trying to build her self-confidence and strengthen her will to live. "Her parents would call me, and I would say that I would

not talk to her until she had walked to her plate.” Once the young girl had struggled out of bed and walked across the room to take a bite of food, her parents would hand Shivamma the phone.

6. Challenges and Limitations

Having to be just a faceless voice on the phone presents significant limitations, and the first barrier in the path of the counsellors is securing the patient’s consent. “Refusals have been low, but sometimes patients are afraid to share that they have the disease and are worried others will find out,” says Shivamma. “Some people are busy with work and tell us they will not be allowed to pick up their phone during work hours.” Counsellors have only one or two chances to convince patients that follow-up and counselling services could help them on a months-long journey to recovery. However, if they choose to ignore their advice, the counsellors must respect their wishes.

The lack of face-to-face contact also takes a toll on the counsellors themselves. Gracy may have been able to convince the man in Chitradurga to let his wife come home immediately had she met him, but she has to be content with having conversations over the phone. Counsellors thus have to strike the right balance of patience and persistence in their efforts to change the behaviour of TB patients.

“The thread of communication is very delicate. We can break it by saying one wrong word. Since we don’t have direct communication, our very ‘hmms’ and ‘aahs’ are non-verbal communication and they can tell if we are listening,”

Counsellors have also lost patients because of changed mobile numbers, with no way to track them. In addition to following the call protocols, which involve calling patients lost to follow-up once in 15 days for three months, the counsellors have developed an informal protocol. “We follow up once in 15 days if a number is out of service, but we try the number weekly if it is ringing,” says Shivamma.



Figure 7. The Careline counsellors have discussions with the technical team on their experiences and difficult cases.

There is no linkage between the Careline counsellor and the government health staff, partly in the interest of maintaining patient confidentiality, and thus there is no further support system to help enforce the counsellors' recommendations. Tina, one of the newer counsellors on the team, is struggling with a case of a 15-year-old girl in central Karnataka who has lost her eyesight to TB, and is being shuttled between public and private providers by her parents. Her parents have asked the counsellors for medical help, which they cannot provide. Tina seeks the advice of the technical team at THALI (see Figure 7), but this is hard to do for all but the most difficult cases. Counsellors have sometimes been confronted by patients asking why they are even interested in their health. "We say it is our work. We get no benefit from it, and even if you scold us, we want you to feel better. We want no one else to be affected by the disease," Sirisha says.

At other times, counsellors have called patients, only to find out that they have passed away. "I find it difficult to say anything to the family, but I have to find something comforting to say," says Shivamma. The counsellors have undergone training in bereavement counselling, which has helped them to comfort caregivers about the loss of the individuals they had become close to themselves. Every six months, even after a patient's death, the counsellors call the deceased's family members to ensure that no one in the family has symptoms.

Dealing with patient deaths, losing cases to follow-up (due to a change in phone numbers, disconnected numbers, unanswered calls, or when contact can no longer be established with the patient for various reasons), and handling difficult cases have taken an emotional toll on counsellors, but they have developed their own coping strategies to deal with their feelings. Gracy and Sirisha say they feel very bad when they hear about patient deaths, imagining themselves in the position of the bereaved family, but Shivamma tries to be pragmatic. "There's no use in feeling bad," she says. "I just have to remember my satisfaction in having helped patients in the private sector who do not go regularly for check-ups." The counsellors also draw on each other's experience, taking two-minute breaks from the call to discuss what to say to the patient or caregiver before calling them back.

For many patients, that call tips them from despair to hope. At a time when he was depressed, as were his mother and father, Sandeep said he felt good when the calls came. "It was nice to know that someone cared about my

treatment.” He dragged himself out of bed and focused on getting healthy, and by the time his treatment ended in August 2017, he was already back at work, doing small jobs.

7. Careline’s Impact and the Way Forward

7.1 Value addition by the TB Careline

- i. The TB Careline maintains the privacy of patients who may not wish to receive in-person care.
- ii. Each call is tailored to the patient’s needs, offering a personalized approach to prevention, care, and support.
- iii. Counsellors are also trained to address specialized issues of bereavement as well as paediatric, geriatric, and drug-resistant TB.
- iv. Careline is a system that uses technology without removing the human connect from patient care, making it acceptable to the patient and the caregivers, while at the same time increasing the efficiency of the counsellors.
- v. The Careline is a flexible system that can be adapted to the needs of the government health system (supporting treatment notification and linkages to patient benefits) or the private sector (providing feedback on the patient’s treatment status).

The Careline counsellors have managed to convince about half of the patients who stopped taking treatment to resume their medication.

The TB Careline has registered 15,989 patients between April 2014, when it began operations, and September 2020. In this period, 7,241 patients have completed treatment, 2,552 are under active care, and 605 patients have died. The Careline counsellors have managed to convince about half of the patients who stopped taking treatment to resume their medication. In total, 7,866 patients who have been notified to the state TB programme from January–September 2020 are being tracked currently to ascertain their treatment status. These numbers are a testament to the dedication of the team of five counsellors, who work well past their office timings to ensure that no patient feels isolated, confused, and afraid of what is happening to them. Even during the Covid-19 lockdown, the counsellors worked from home, in the absence

of public transport, to ensure that their call schedules weren't disrupted and that TB patients would not feel isolated in an uncertain time. They calmly explained the risks of Covid-19 and provided accurate information to TB patients at a time where rumours and inaccurate information were rife on social media.

The TB Careline has enormous potential, combining as it does a technological process with the human touch. Not only does it have the ability to reach thousands of patients and follow them for up to two years after treatment, but it also does this in a discreet manner that is respectful of the patient, is convenient to the patient, and, mostly importantly, maintains the patient's privacy.

The Careline is a flexible and scalable system that has the potential to cover every state and district in India. Since its inception as a service for private sector patients, it has expanded to involve a greater number of counsellors with a wider range of language capabilities to cater to both public and private sector patients. The state government has also asked KHPT to provide information on DBT payments under the Nikshay Poshan Yojana scheme, which provides TB patients Rs. 500 per month for nutrition support during the treatment period.

With a larger team and greater language capabilities, the Careline would be a valuable weapon in the government's arsenal to fight TB and eliminate it in India by 2025.

The government has established a TB information service called Nikshay Sampark, which offers callers information on TB treatment and patient services that are available through the national TB programme. Its call centre is staffed by 100 agents speaking 14 languages, who have handled 8.95 lakh calls from patients and healthcare providers across the country since May 2018. Nikshay Sampark does not currently offer counselling services to TB patients, but with its infrastructure and geographical coverage, it has the potential to integrate counselling as a function in its services.

The KHPT team visited the offices of Nikshay Sampark in Gurgaon in May 2019 to share learnings from the work of the TB Careline with the team. KHPT suggested that a part of the Nikshay Sampark system be dedicated to a counselling service and shared the Careline call schedule and workflows

as samples upon which Nikshay Sampark could build their own schedules, workflows, and protocols. KHPT continues to advocate with the national TB programme to integrate the Careline into Nikshay Sampark within two years, with the aim of ensuring that for every TB patient, no matter where he or she is located, support is just a phone call away.

9. Acknowledgement

We wish to acknowledge, first and foremost, the Careline counsellors working in Dharwad, Karnataka, who have for many years been friend, counsellor, and guide to TB patients and caregivers across the state. The support of Indegene Lifesystems Pvt. Ltd and the United States Agency for International Development (USAID) has been invaluable to the Careline's operations. KHPT works in collaboration with the Government of Karnataka as we move towards achieving India's goal of eliminating TB in 2025, and we acknowledge the support of the programme staff of the National Tuberculosis Elimination Programme.

About KHPT

KHPT is a not-for-profit entity founded in 2003 that aims to reduce inequalities in health by building responsive systems through evidence-driven approaches. KHPT works in over 20 states of India, primarily in the fields of Maternal, Neonatal & Child Health (MNCH), Tuberculosis (TB), Adolescent Health (AH), HIV/AIDS, and Comprehensive Primary Health Care (CPHC).

KHPT envisions a TB-free India, with a focus on scaling innovations on prevention, detection, treatment, and care for patients through building the capacities of communities and health systems. The organization is working in collaboration with the National Tuberculosis Elimination Programme to end TB in India by 2025.

Setting the Context

III. Case studies on Counselling and Reformation

An estimated 150 million Indians need active mental health care intervention according to the National Mental Health Survey (NMHS) 2015-2016. Common mental health disorders (CMDs), including depression, anxiety and substance abuse affect a significant section of our society. In low resource countries like India, some of the important factors contributing to the causation and recovery of mental health disorders are social in nature. There is a long-established relationship between mental health and social variables like employment, education, living standards, environment, access, equity, and others. A bidirectional relationship exists between social adversity and mental health disorders; individuals from socially and economically vulnerable groups are at a significantly higher risk of suffering from mental health disorders which in turn contributes to impoverishment. These factors also cause considerable obstacles in accessing and utilisation of mental health services. Mental health care interventions for these groups are particularly challenging.

Providing mental health care to socially marginalised communities has also largely been neglected by the National Mental Health Program (NMHP) in India. The focus of NMHP has been mostly on providing basic mental health services to individuals with severe mental health disorders. The District Mental Health Program (DMHP) in India was rolled out 25 years ago with the aim to provide community mental health services at a primary mental health level is currently operational in only 27% of districts and has a shortfall of required mental health professionals. In India, where there are hardly 0.3 psychiatrists, 0.07 psychologists and 0.07 social workers per 100,000 people, individual mental health care interventions are resource intensive. There is a large 'treatment gap' all over the country, but especially so in rural areas, northern states and amongst the socially disadvantaged.

The sheer magnitude of the problem combined with stigma and discrimination and the existing treatment gap provide some compelling reasons to move towards a public health approach to mental health as advocated by the World Health Organisation. The public health approach

shifts the focus from the traditional individual-focused deficit driven model of mental health to a whole-population, strength-based approach. The framework promotes the adoption of a multi-tiered approach which not only targets the population suffering from severe mental health issues but also proactively addresses the mental health needs of all individuals within a community. The public health approach provides a direction towards reducing the burden of mental disorders by thinking of ways to increase universal access to appropriate and cost-effective services, including mental health promotion and prevention services addressing the needs of at-risk population.

When it comes to addressing the needs of at-risk population, decentralisation and the role of social sector organisations become extremely crucial in a low resource country like India. These organisations play a critical role in health promotion and facilitation of educational activities. Increasing involvement of social sector organisations in providing mental health care interventions can not only help reduce the treatment gap but also help in reaching out to vulnerable communities at risk.

Against this backdrop, the three case studies by ‘Seva Kendra’, ‘Project Second Chance’ and ‘Ishwar Sankalpa’, highlight the need for various stakeholders to work together in providing mental health care to at-risk populations like truck drivers, jail inmates and the homeless. They highlight the need for active involvement of social sector organisations in need assessment and providing mental health support to vulnerable communities.

The first case study by ‘Seva Kendra’ depicts the challenges faced by long distance Multi-Axle container/ truck drivers and the difficult and exploitative work conditions under which they must operate in an unorganised sector. They work for long hours, face multiple health related issues, engage in unhealthy lifestyle practices which impacts their life expectancy. The SAMBANDH program by Seva Kendra was an attempt to improve the quality of life of these workers and provide them with much needed psychological, social, and physical support.

The interventions were carried out in five districts in West Bengal and the project was funded by the MAERSK Group, under their CSR (Corporate Social Responsibility) program. The SAMBANDH program reached out to almost 10,000 truck drivers. Their primary area of intervention was to restore

their self-esteem and provide them ways to change their unhealthy lifestyle practices through systematic psychological and behavioural activities and make them more visible in public domains to help advocate for their rights along with others in the unorganised sector.

The program utilised various innovative ways like street plays, playing cards and performing magic shows along with regular health check-ups, group, and individual counselling to spread awareness and educate. The program also helped the primary beneficiaries to access schemes, social security, and insurance by helping them with the documents and took a softer advocacy and awareness approach.

The outcomes of the program have been quite encouraging, SAMBANDH was able to reach out to many primary beneficiaries; spread awareness about road safety, safe sex, personal hygiene, insurance, and government scheme. They could also convince some of them to reduce their substance use intake, provide health check-ups, HIV testing and teach them yoga and exercises. The secondary beneficiaries like the wives and children also received training in reproductive and child health related issues. This case study offers interesting insights into the challenges of implementing a program like this and important observations in furthering the rights of truck drivers in the unorganised sector.

The second case study 'Project Unlearn' focuses on the reformation of prisoners through context-based educational intervention. The goal of the program was to reduce the rate of recidivism, improve functional literacy, create learning spaces to discuss about relevant issues like gender-based violence, life skills and train internal service providers to support the inmates. They have designed and developed an educational kit called 'Pahal' covering a 90-day curriculum to initiate dialogues around relevant issues along with the regular curriculum and create a layer of peer educators who could help initiate change by implementing the kit and offering cognitive and socio emotional education to the inmates. The language and design of the kit is informed by the observations made inside the prison and inputs from different stakeholders.

The case study takes us through a fascinating narration of the experience of designing and implementing the educational kit, the various challenges encountered in engaging the inmates, making the kit interesting, relevant and age appropriate. The study also shares the experience of training five

volunteers as peer leaders to act as agents of change within the prison system and provide important inputs to contextualise the kit. These peer leaders in their own unique ways were successful in making other inmates attracted towards the educational initiative. The collaboration with the peer leaders also helped the team in creating a set of comic books around issues like gender violence, rape and POCSO to sensitize the inmates. The kit is basically intended to provide other organisations with a teaching aid to target at-risk youth.

The third case study documents the experience of Ishwar Sankalpa, an NGO based in Kolkata, addressing the psychosocial needs of the homeless. Homelessness has been growing alarmingly over the years, growing by almost 40% between 2001 and 2011 at the national level and by almost 50% in West Bengal during the same period. Evidence shows that the homeless face multiple problems – a lack of amenities such as water and sanitation, protection from inclement weather, and harassment from police and other authorities who frequently evict them and keep them on the run. Perhaps as a result, homelessness is often associated with mental illness. Studies have shown high incidence of psychotic disorders, substance abuse and bipolar mania among the homeless; and lack of access to proper medical treatment was one of the causes for them to become homeless in the first place. It is estimated that there are an estimated 400,000 wandering mentally ill people in India, an indication of the staggering proportions of this problem.

Ishwar Sankalpa's program – Naya Daur – takes a unique multi-pronged approach to reaching out to this highly vulnerable population: urban homeless, who are also suffering from psychosocial disability. Starting with the belief that there is an inherent capacity for care and compassion within each community, the program seeks to leverage local support for the homeless in their dwelling site, rather than resorting to relocating them to an unfamiliar location. This low cost model brings together community resources that are commonly available everywhere – the local teashop owner, shopkeepers, and so on – to provide food, medicines and other necessities for individuals in their area who are both homeless and incapable of caring for themselves due to debilitating mental illness. This serves many objectives: it builds a sense of community, where people build a joint responsibility for caring for those most in need; it shares the burden, both financial and emotional, of providing

sustained care and support; and, most importantly, it confronts the stigma associated with homelessness and mental illness directly, showing that it can be treated and managed through sensitivity and compassion.

Following a systematic approach, Naya Daur has created a replicable model for addressing this issue. Their own intervention has touched 1,200 lives in 40 wards of Kolakata, providing them with basics such as food, clothing, healthcare and the human touch. They have enrolled over 200 voluntary care givers in these communities, besides rehabilitating several homeless back into the workforce as well reuniting many with their families. Importantly, they have secured entitlements in the form of Aadhaar cards, Disability cards, bank accounts, PAN cards and gratuity schemes for many of the homeless.

These case studies provide valuable insights into the experience and challenges of designing and delivering mental health care to vulnerable communities and help them lead productive lives. The key takeaway from these case studies is the need to contextualise the interventions and incorporate the experience and knowledge of the primary stakeholders while planning and implementing these interventions.

III.A: SAMBANDH: A Motivational Program for Truck Drivers to Bring about Positive Psychosocial and Behavioral Changes

Seva Kendra Calcutta²²

1. Rationale and Background

SAMBANDH means relationship. The project goal is to build relationships between all the stakeholders of the transport industry by keeping the truck drivers as the prime focus of this intervention. The project is about the social recognition of truck drivers. The objective behind this intervention is to bring forth the issue of truck drivers who live a bonded life and work under near-slavish conditions like others in the unorganized sector.

Road transport plays a very important role in the chains of commodity circulation in India. As end users of this process various industries and businesses that get served by truck drivers. However, such industries and businesses are unconcerned of the exploitative working conditions of truck drivers, which include long working hours, health related issues, practice of unhealthy lifestyles leading to shortened life expectancy.

SAMBANDH provides multiple humanitarian services to improve the quality of life of these silent contributors to the economy so that they can live a life with dignity. The project goal and objectives are focused on the drivers' psychological, social and physical wellbeing and also their dependents. The project wants to not only highlight the lives and contributions of truck drivers but also put forth their needs and aspirations as unorganized industrial workers, nation builders, and as dignified citizens of the country.

²² Contributed by Rev. Dr. Franklin Menezes

2. Problem Statement

As per the Economic Survey 2017-18, the Indian logistics sector provides livelihood to more than 22million people. Further, the Survey estimates that the worth of Indian logistics market would bearoundUS\$215billioninnext two years compared to about US\$ 160 billion currently. The logistics industry is one of the most important and basic industries for the economic growth of a country. The main function of this industry is management of the flow of products from the place of manufacture to the distributors and customers. Thus, the industry also involves the integration of storage, packaging, transportation, security, in short the entire cycle of supply chain management. The end users who benefit from the labour and services of truck drivers are unaware of the near slavish working conditions of truck drivers.

“Due to the various challenges faced during the day, the truck drivers prefer to drive at night. It is very important to provide some basic facilities like roadside medical clinics after every 100 km. alongside all the major highways in India.”

The issues faced by the truck drivers in India were aptly summarized by Late Mr. Mahindra Singh Gill, Federation of West Bengal Truck Operator’s Association: “Due to the various challenges faced during the day, the truck drivers prefer to drive at night. It is very important to provide some basic facilities like roadside medical clinics after every 100 km. alongside all the major highways in India.

There are approximately 90 Lakh truck drivers in India and, if we assume that every truck driver has at least 5 family members then the number of people dependent on this industry is 45,000,000. We demand respect and recognition for all these people who are associated with this industry. Also we need Government schemes to cover the needs of the truck drivers, like other marginalized sector industrial workers inIndia”.

Life on the road is extremely difficult for truck drivers. They continuously drive for 12-14 hours at a stretch, sleep in the truck to prevent robbery and due to inadequate and insufficient parking facilities that provide civic amenities, force many to cook and eat under their truck on the highways. The combined effects of low social status of the profession, immense hardships, poor wages,

lack of social security and life away from families drive many to live recklessly. Substance abuse, alcoholism, engaging in unprotected sex and other life-threatening and risky habits are not uncommon among truck drivers.

3. SAMBANDH Project

The primary beneficiaries of the project are the long distance Multi-Axle container / truck drivers. 80% of the direct beneficiaries will consist of multi-axle container drivers and 20% will be from other categories. The work on the project began in April 2016. The intervention is implemented in five districts of West Bengal. The districts are Kolkata, Howrah, East Midnapore, Hooghly and North 24 Parganas (India-Bangladesh Border). The project is funded by the Maersk Group, under their CSR (Corporate Social Responsibility) program. As of August 31st 2018, the project was successful in enrolling 10,000 Truck Drivers' into the program. The program components are designed to address physical and psychological issues faced by this community.

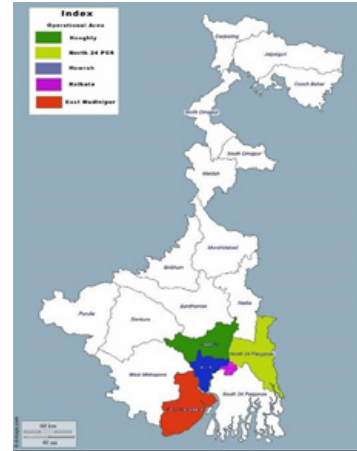


Figure 1: project area map

Additionally the project was also successful in addressing the issue of rights and entitlements of Truck Drivers' in India. Table 1 gives a summary of the last 3 years (2016 – 2017, 2017 – 2018 and 2018 – 2019) activities vs. impacts achieved by SAMBANDH.

4. Focus Areas of Sambandh

The needs and problems of the truck drivers were investigated first so that the areas of intervention could be chalked out based on the findings. Data was collected through direct interactions with primary beneficiaries (in this case enrolment of truck drivers based on one-to-one interview) along with sample interviews with secondary (Focus Group Discussion with the wives and children of truck drivers) stakeholders. Meetings with all major stakeholders (Government and Private) were conducted to understand their point of views about the needs of the primary beneficiaries. Two major focus areas that emerged from the needs assessment were as follows:

- **Recognition and Dignity**

The intended goal of the project is to find positive permanent solutions for inclusion of truck drivers as dignified human resources of the logistic industry. The psycho-social dimension of truck drivers is a single point agenda for SAMBANDH. To change lifestyle practices and the mind set of truck drivers, Seva Kendra Calcutta (SKC) intends to bring about sustainable changes in the lives of truck drivers through systematic psychological, behavioral activities in order to restore their self-esteem so that they can live their life with dignity.

- **Rights and Entitlements**

The general public using the transport system represent every sector of the population and, if their rights get violated, then they can protest and even have the capacity of taking the help from the law to get what is rightfully theirs. Truck drivers are mostly semi skilled workers with very little knowledge about their rights and entitlements. A nation wide awareness on the rights of truck drivers along with other unorganized sector workers could possibly bring this issue of truck drivers into the public domain.

5. Process Narrative

Truck drivers are a neglected group in our society often disrespected by the general public, harassed and approached by NGOs, and government programmes only for HIV prevention treating them like ‘trouble makers’. It is therefore natural that truck drivers are weary of intervention programmes.

5.1. Rapport Building and Creating Awareness

The field officers start the process by spending a lot of time gaining their trust and convincing them that they are here to help and not report about them or increase their troubles. Initially, the project staff received a lukewarm response from other stakeholders when they tried to engage them. The project staff often meet truck drivers when they are in transit which do not provide the ideal scenario for any meaningful, educational or awareness programmes. So instead of doing conventional training or capacity building sessions, interesting workable solutions were devised to interact with truck drivers. We focused on engaging indirectly with truck drivers by doing street plays - called ‘Theatre of Development’ in the area near the parking lot. The play

communicated messages about behavioral change, safe driving, danger of drunk-driving, drug and tobacco addiction. Cleanliness drives were conducted wherein personal hygiene, hand washing, wearing a mask and keeping the vehicle clean are emphasized. The street play worked like an ice



Figure 2 Rapport building with Truck drivers

breaker between the project staff and the truck driver. Similarly, playing cards with trucker drivers that have pictorial messages on them and performing magic shows to communicate key messages to women and children of truck drivers are some of the innovative ways used to engage with truck drivers.

5.2. Humanitarian aid and psychosocial wellbeing

5.2.1 Health camps and medical aid

The next step was to organize health camps which also provided free refreshments to those who participated. This slowly led to the truck drivers getting their health check-up, HIV and eye check-up done, thus gradually building rapport with them. A survey was also started to get a sense of the kind of health issues prevalent among the group but many were reluctant to share information and often gave half information. To increase the interest and gain trust of the truck drivers various activities like providing necessary items for their daily use were initiated like towels, solar lamps, water filters and shirts. These items were important as truck drivers often travelled at night in places where there was no electricity, drinking water and bathing facilities. Thus with gradual friendship and rapport building many truck drivers would not only attend but also convince their friends to attend these health camps. Based on the diagnosis at health camps they were given required medical aid, spectacles etc. This assured them that the project staff had genuine intentions of helping them.

To increase the interest and gain trust of the truck drivers various activities like providing necessary items for their daily use were initiated like towels, solar lamps, water filters and shirts.

With the improved health of the truck drivers, the truck owners also slowly started seeing merit in having healthy truck drivers who are less prone to accidents, and illnesses which indirectly meant better employee performance without them having to pay any expenses. This led to participation of many individuals and associations of truck owners to encourage their truck drivers to participate in the health camps and workshops of Sambandh Project. For this the staff has also made linkages with local hospitals, and medical equipment providers to organize resources.



Figure 3: Health camps

5.2.2. Individual and Group Counseling

After this the next step was to do group counseling and individual counseling. The truck drivers needed more than health check-ups as some of the problems were inherent in the lifestyle of a truck driver. It was important that they themselves took active steps to better their health and family life. Through counseling many of them spoke openly of their family and financial problems and they were made aware of the importance of safe sex and were also taught basic yoga and exercises to keep themselves in good health. Here the nexus of masculinity and mental health has a big role to play as the truck drivers as men do not discuss their personal problems or allow themselves to be vulnerable in front of their peers. Through group counseling and individual counseling many such issues that bothered them found an outlet and made them feel better. The needs of the families of truck drivers came to light and so education classes for children of truck drivers were started and health camps for their wives were also regularized along with other health camps.

The migrant and transit drivers both leave their families behind in the villages located outside the state of West Bengal. A very small proportion of the drivers live with their families locally. The children are often first generation learners with neither the environment nor the people available to support and facilitate their learning process at home. Sambandh initiative provides a daily free tutorial for such children at Kolkata, Howrah and Petrapole.

6. Strategic Approaches of Sambandh

One of the strategic approaches adopted by the programme was to address a range of Low Resistance High Impact issues so that the driver's interests are not compromised or jeopardized in any way and the already precarious relationship with the fleet owners is not worsened. This approach kept the project interventions alive and pulsating even while providing field teams an opportunity to interface with fleet owners on non-contentious issues. It has given the much needed head start to the project and laid the foundation for taking interventions to the next



Figure 4: SAMBANDH staff engaged in counselling

level. These interventions include providing humanitarian aid, conducting health camps, and counseling services which allowed the staff to engage with truck drivers without antagonizing any of the stakeholders.

6.1 Rights and Entitlements

In the second phase of the project the focus was further shifted to rights and entitlements of truck drivers. This was difficult terrain to navigate as Sambandh does not take a right based approach to the problems of truck drivers but instead takes a soft advocacy and awareness route. The staff chalked down various state and national insurance schemes that would be beneficial for truck drivers in states of Uttar Pradesh, West Bengal and Bihar as although the intervention was based in West Bengal the drivers are multi-axle drivers and travel across state and national borders to transport goods. Schemes like Samajik Suraksha Yojana (social security scheme) in West Bengal cater to unorganized workers that cover accidental coverage, children's education and daughter's marriage in some cases. Similarly, Pradhan Mantri Jeevan Jyothi Yojna is also beneficial for truck drivers. In the second phase, the project stopped providing any incentives like before to encourage participation in health camps because now the truck drivers themselves have become agents of influence and change.

There are limits to the kind of work the project aims to do. As mentioned earlier, the project does not engage in direct mobilization leading to unionization for demanding rights but helps the truck drivers to gather

important documents to apply for insurance and social security. The truck owners and other stakeholders are willing to help as this reduces their cost in case of accidents. However, the truck owner and associations have their own concerns and have been discouraging and against any kind of group formation among the truck drivers or even informal WhatsApp groups of truck drivers to coordinate events and health camps. These were in fact preconditions laid down prior to allowing Sambandh project staff in the premises and interacting with truck drivers. They fear that such an initiative might be used for unionizing in future and then would lead to demands that the truck owners and other stakeholders are not willing to tolerate.

6.2. Attitudinal change within Logistics Industry

As mentioned earlier, truck drivers being a mobile group even if they are available at some time of day, are not in the right frame of mind always to be engaged in fruitful discussion. They are restless about the wait and frustrated about the loss of working hours and the income thereof. In order to deal with these challenges the field staff and members have made parking spaces the epicenter of their activities and have identified several key stakeholders who could help in communication. These stakeholders range from security personnel of parking spaces, owners and staff of eateries (Dhabas), supervisors (munshis) of transport companies. These passive stakeholders then become active collaborators and help coordinate events, workshops, storing training material and communicating messages back and forth.

6.3. Social Bonding Matches

The relationship between truck drivers and their owners is not hostile but it cannot be classified as friendly or affable either. It has been a vicious cycle of deep mistrust of one another from which neither can break free owing to their interdependence. Friendly football/ cricket/ kabaddi/ volleyball matches were organized regularly to break the ice and bring the two parties together. Such friendly matches are organized between truck drivers and traffic police also who are perceived as the main tormentors of truck drivers. Mix groups matches with drivers, fleet owners, and supervisors of companies are also organized.

The relationship between truck drivers and their owners is not hostile but it cannot be classified as friendly or affable either.

7. Activities and Impact of the Sambandh: Table 1

Activities	Impacts
To address issues like Road Safety, Safer Sex, Insurance and others, 105 events were organized for the drivers.	Approximately 3,500 drivers were aware about Road Safety, Safer Sex, Insurance and others issues.
Psycho-social counseling group and individual with Yoga and Physiotherapy sessions for 2,754 drivers.	A sincere desire is noticed among 2,754 drivers about reducing their intakes of substances related to addictions and importance of exercise.
General health camps for 4,166 drivers	4,166 drivers received treatment free of cost.
Eye camps for 1,850 drivers.	In the eye camps 1,850 drivers came for checkups and 971 got prescribed spectacles.
HIV testing and screening camps for 5,486 drivers	50 were referred for treatment in hospitals and 22 farther referred for ART linkages, out of 22 drivers seven received nutritional support.
Street Drama & Magic show 130 events.	3,850 drivers were engaged in street drama and magic show
Social Security awareness camps,26 events.	700 drivers were made aware of Government Social Security schemes.
Social Security linkages for 124 drivers.	Government scheme benefits availed by124 drivers.
Special day celebrations like Independence Day, Republic Day, Drivers Day etc. 30 events scheduled	Approximately 1,000 drivers joined in celebration of Special days.
Social Bonding programs, 10 events.	1,200 drivers took part in games with police, truck owners, parking space authorities etc.
Education fairs, 11 events.	Approximately 2,500 drivers came for these Education fairs.
Supplementary education center for the children of truck drivers, 3 units.	In 3 Supplementary education centers 45 children of drivers enrolled to provide tutorial support.

Activities	Impacts
Reproductive Child Health training for the wives of drivers, 3 training events.	179 candidates (wives of truck drivers) received training on Reproductive Child Health and related issues.
Distribution of solar lanterns, torches and water filters to the drivers.	1,790 drivers received solar lanterns and torches, and water filters received by 983 drivers

The above table 1 is self-explanatory about the achievements and the road ahead for SAMBANDH to complete its journey as a catalyst to start a movement for restoring dignity of truck drivers in India.

8. Challenges

8.1. Heterogeneity of Drivers

Multi Axle truck drivers are a hugely diverse group of workers who differ from each other on a range of parameters.

8.2. Nature of employer

A driver could be driving his own vehicle or employed by a small/medium/large size owner. He could also be employed directly under a transporter or a logistic company. It is estimated that only 40% of drivers are directly employed by logistic companies or transport companies. The remaining 60% are subcontracted through a range of small/medium fleet owners or through middle men linked to them.

8.3. Terms of employment

A driver could be a permanent, temporary, contracted or subcontracted employee depending on who is employed by.

8.4. Distance travelled

A driver could be running a shuttle operation from the port/dock to a nearby godown or driving intra-state West Bengal or inter-state with all India permit or driving to neighboring countries like Nepal, Bhutan and Bangladesh. This

8.5. Residence

A driver could be a local, migrant or one in transit.

Although all of them face some kind of exploitation but depending on the above factors the nature and extent of exploitation and problems faced may vary. Sambandh does not at present have distinct measures for different groups but understands that it is important to provide need based interventions

8.6. Aversion to mobilization

One of the objectives of the project is to improve working conditions as well as improving truck driver's awareness and access to better wages, health care and insurance. This necessitates the mobilization of drivers but this is not acceptable to the truck owners. They fear that mobilization may lead to demand for better wages and entitlements. The argument put forth by the fleet owners for the non-extension of provident fund (PF) and insurance benefits is the uncertainty of the drivers' employment tenure. But in reality there are several drivers who have worked for the same employer for decades. Thus the field officers who interact with truck owners and parking lot owners have to navigate very carefully without antagonizing any of them. As it would lead to animosity, pulling out of drivers from the programme and there is also a possible threat for the field officer himself/herself.

9. Possible Remedies

9.1. Human Resource management

It has been challenging for the staff to work due to the unfriendly approach of the stakeholders in the parking spaces, docks and premises of the fleet owners towards any kind of project activity. With no washrooms in these work areas and working in the sun under umbrellas for long is difficult. The staff is oriented towards the macro perspective of the project and the responsibilities are marked well because the involvement of a large number of stakeholders from the port authorities, parking space owners, fleet owners, truck drivers, hospitals and local people can be overwhelming.

9.2. Different focus points of psycho-social counseling

Due to the heterogeneous groups of truck drivers the kind of psychosocial counseling they need might differ and the counseling staff needs to be prepared for the same. The counselors create favorable ambience by putting up curtains or screens to ensure privacy. Some of the beneficiaries are prioritized like underage drivers; those struggling with substance abuse or detected HIV have to be given additional attention.

10. Advocacy Efforts

10.1. Cohesive Corporate strategy

The bigger players among the transport and logistics companies themselves have a mandated CSR to comply with and few of them have. They can also be approached to exert influence on the players down the supply chain to take up some component of driver's welfare as part of CSR strategy.

10.2. Research on the industry

During the course of interactions with drivers who drive across the country, it came to light that different states might have different working conditions and in some states it might be better and fair. By pushing research in this area we can narrow down on best practices of the industry in other states. The learning can help advocate for better policy interventions.

10.3. Development of Parking spaces

There are two kinds of parking spaces- free and paid and both have much left to be desired in terms of the facilities they offer the drivers. These spaces are leased out to private parties and they are expected to maintain and run it. Often these areas are poorly maintained, basic facilities like toilets and bathrooms are lacking and without any separate space for drivers to rest, cook and eat they do all of these in/under the vehicle itself. The parking authorities only charge money and take no responsibility for vehicle security so the drivers are forced to sleep in the truck at night. Considering the stressful time spent by the drivers on the road, a parking space with good amenities would be a welcome relief to them.

The parking authorities only charge money and take no responsibility for vehicle security so the drivers are forced to sleep in the truck at night.

11. Way Forward

The Sambandh project we believe is unique in its approach towards the well-being of truck drivers. Over the years we have tried to emphasize that truck drivers require holistic care; not just targeted public health interventions. By engaging with a range of friendly, indifferent and hostile stakeholders and different kinds of truck drivers, we understand that the interventions in this domain need to be dynamic and self- reflexive. A programme designed in a specific area may or may not work the same way in all areas simply because of the difference in nature of stakeholders, local formal governance rules and informal power dynamics in each region. We aim to promote the Sambandh project approach which focuses on ground realities and practicalities and advocate the same to be taken up in other states as truck drivers are a big part of our everyday lives everywhere.

12. Acknowledgements

We would like to thank all the entities who have made the Sambandh project possible.

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About Seva Kendra Calcutta (SKC)

Seva Kendra Calcutta is registered with registration number S/13865 as the relief and developmental society of the Catholic Archdiocese of Calcutta, under the West Bengal Societies Registration Act XXVI of 1961 since December 14, 1973. We have been at the forefront in providing and facilitating developmental work to the poor and needy people in different parts of West Bengal since 1973.

III.B: Project Unlearn: A Case Study of the Reformation of Prisoners

Turn Your Concern Into Action (TYCIA)²³

1. Introduction and Background

This case study presents a situational analysis of our work in Tihar Jail No. 5. Tihar Jail is one of the largest prison complexes in South Asia. It has nine central prisons which house approximately 17,000 prisoners whereas the capacity is for 10,000 prisoners (Govt. of NCT of Delhi, 2020).

The TYCIA Foundation works with the inmates of Tihar Jail No. 5. The total number of inmates varies between 700 and 900; 70 per cent of the inmates in Jail No. 5 were undertrials. Out of this total group, about 65 per cent are below the poverty line. The literacy level of inmates is as low as 60 per cent or worse. Most struggle to read and write. Inmates, by and large, were dependent on their families for their livelihood before coming to prison. Most inmates held unskilled jobs or were unemployed. Many are illiterate, unorganized, and trapped in an unhealthy cycle. Most are from marginalized backgrounds, and mostly come from semi-urban and rural backgrounds.

Tihar Prison has been trying for a long time to adopt strategic development initiatives through in-house efforts as well as in collaboration with NGOs engaged in the areas of de-addiction, education, and skilling. The Better Life Pri-School was set up as a vehicle for the reformation of prisoners.

In Project Unlearn, the Pehal curriculum creates a safe space for young people who are at risk to initiate conversations focused on crimes against women, a burning issue in India.

The curriculum is developed with the help of inmates of Tihar Jail No. 5, keeping their interests, needs, and learning style in mind. It consists of board games, playing cards, and activities designed to motivate youth to participate

23 Contributed by Eleena George and Gauri Sharma

and engage in discussions on issues related to violence. Real-life incidents and cases are woven into discussions to make these more relatable. The vocabulary used is carefully chosen for ease of understanding and learning.

Numerous studies have established a clear link between low literacy and crime. The inability to read and write well may not be a direct cause of criminal behaviour, but low literacy and crime are related. Pehal aims to make an illiterate individual functionally literate in a span of three months. This helps at-risk youth acquire the skills they need to find and keep jobs and to escape the trap of poverty, which helps them to stay away from a life of crime. Studies also indicate that prison-based correctional education and literacy programmes reduce recidivism, the tendency of a convicted criminal to reoffend and thus return to prison. On average, inmates who participated in correctional education programmes were 43 per cent less likely to recidivate than inmates who did not participate. This translates to a reduction in the risk of recidivating of 13 percentage points for those who participate in correctional education programmes compared to those who do not (RAND, 2013).

The other noteworthy aspect of this initiative is the creation of a layer of peer-educators and leaders to ensure the sustainability of the project and its long-term impact. They are trained as facilitators, which, in turn, raises their self-esteem, increases their capacity for social integration, and decreases their chances of behaving violently.

2. Identification of the problem

The team of the Organization with Prison Authorities identified a range of problems by using various participatory tools. The baseline and need assessment survey that we conducted with the cooperation of the prison authorities in Jail No. 5 revealed the following:

- 60 per cent of inmates have a competency that is below the 5th grade.
- 17 per cent of inmates can't read and write the alphabet.
- 23 per cent of inmates are first-generation learners.
- More than 90 per cent of inmates held jobs in the unorganized sector.
- Less than 10 per cent of inmates are employable as measured on industrial parameters.

- About 33 per cent of inmates have a history of mental health resulting from a disturbed childhood, addiction, etc.
- More than 23 per cent of inmates have a long history of being in conflict with the law and need psychological support to come out of this vicious circle.
- More than 60 per cent have been charged with committing crimes against women.
- More than 40 per cent have a history of drug and substance abuse.
- The recidivism rate is 24 per cent. Of this, rape, gang rape, and offences under the Prevention of Children from Sexual Offences (POCSO) Act, 2012, account for 78 per cent.

3. Description of the initiative

The overall goal of Project Unlearn is to reduce crimes against women by bringing about a meaningful and effective reformation among young offenders through pedagogical intervention by developing and implementing context-based education and life-capacities modules and curricula.

The programme's primary focus is to develop and implement a context-based education for youth at risk. An educational kit called Pehal has been developed with the help of inmates, keeping their needs and interests in mind. The kit not only focuses on the literacy curve but also aims to initiate dialogue on topics that are usually left unaddressed, for example, crimes against women and the issue of consent. The second aim of the initiative is to create a group or tier of peer-educators and leaders who act as changemakers in implementing the educational kit and in ensuring that all inmates who attend the classes walk out with basic education, be it cognitive, social, or emotional.

1. **Vision:** We envision a criminal justice system that recognizes the condition and status of incarcerated youth with empathy and understanding.
2. **Mission:** To reduce the rate of recidivism by engaging incarcerated youth in correctional initiatives and life-skills education.
3. **Objectives:**
 - To reduce the rate of recidivism
 - To improve the level of functional literacy

- To create an effective learning space and environment for helping inmates to think critically about issues of gender-based violence, life skills, etc.
- To initiate behavioural change and to facilitate inmates in addressing their life challenges themselves

4. Alternatives and Decision Criteria

The prison, as we all know, is an institution that is set up to punish or detain men, women, and children as part of a functioning criminal justice system. Incarceration has a long and varied history in different societies all over the world.

Despite being a harsh penal and correctional institution, a prison can sometimes also be a blessing in disguise for many inmates, who, after their release, choose to live as socially conscious and morally aware citizens. We believe that a prison as a correctional institution should ensure that all those who enter it should be transformed before they leave and rejoin mainstream society. The failure to achieve such a transformation defeats the whole purpose of a correctional institution.

A typical day in an Indian prison usually starts at 6.00 a.m., no matter what the season is—summer, winter, or the monsoon.

A typical day in an Indian prison usually starts at 6.00 a.m., no matter what the season is—summer, winter, or the monsoon.

The alarm rings for the entire jail; the wardens make the rounds to ensure that everyone is awake. Senior inmates use the washrooms first; newcomers might have to wait for a very long time for their turn. Inmates have to stay and deal with bullies and authority figures throughout their time in jail. As time passes, some inmates manage to find their own way of getting along with people around them and also find a safe place to be in. Some inmates try to avoid any attention and stay away from all problems. A few end up creating a group or squad for themselves for survival. A few live in a state of constant fear. These prison dynamics are very common among inmates as this is the only way they can survive in this hostile environment. It is crucial

for an inmate to prove that he can survive in prison, and proving one's worth and asserting one's authority becomes an inmate's way of life both inside and outside the prison.

“Waqt ke saath sab bhai ban jate hain ya waqt unhe bhai bana deta hai”
(With the passage of time everyone becomes a bhai [literary brother, but also meaning leader, bully, big man, veteran, godfather] or time makes them into a bhai.)

Many of our students believe that the prison is so powerful that it can impact (mostly negatively) an individual's well-being at all levels—social, emotional, psychological, physical, and cognitive. They often cite examples of their fellow inmates, noting that a few of them were first-time offenders, and how they became bhais (a term used by prisoners to describe themselves as a leader in prison, or a seasoned or veteran prisoner). A few inmates recall their initial days in the prison when they were so timid and scared that they did everything, thinking that by pleasing the authorities they would get an early release, and how they have now almost given up on their cases, and are finding ways to survive as they know that their cases are going to take a lifetime. The constant struggle for survival, the relentless pressure to prove their worth, and the imperative need to carve out a space for themselves in the prison hierarchy, makes inmates believe that they are indeed criminals and that nothing is going to change for them, neither inside nor outside. Of course, even those who are outside the jail have to struggle to prove their worth, to carve out a place for themselves, and to hold on to their precarious social position. However, for inmates, the same struggle inside a prison is often a daily, relentless, and unnerving battle for survival. Experiences inside the prison are soon manifested in the prisoners' behaviour as well, which then becomes a hindrance in conducting reformation activities inside the prison. Prisoners often do not participate due to disinterest but also to retain their 'cool' status. In other words, they refuse to engage in certain events that they believe might undercut their hard-won position and status of a bhai. The constant fear of losing the title that defines their identity and power in prison at times compels them to engage in certain activities that they never intended to, thereby not just risking their lives but also jeopardizing the duration of their sentence.

Prisoners often do not participate due to disinterest but also to retain their ‘cool’ status.

As mentioned above, the inmates in this particular jail are mostly school dropouts. On being asked to recall fond memories of their school, some had nothing to share. Some described how they bunked classes to smoke or to drink alcohol with friends. Some spoke about their fraught relations with teachers. Others said that their socio-economic status was a primary reason for dropping out of school. Some were simply not interested in attending school; they did not find it worth investing their time and energy attending school or any educational programme. Their usual response was: “Jab bahar nahi padha toh yahan jail mein aake padhkar kya milega?” (When we did not study when we were outside, then what will we gain by studying here inside the prison?). Such statements led the team to appreciate the inmates’ perceptions and views while keeping their context and situation in mind. The sad reality is that the educational system has failed to convey to school dropouts that the pursuit of education can be a lifelong experience and can be explored throughout one’s lifetime. Some inmates feel that formal education is useless because it does not teach one about real life. Moreover, when they meet people who have completed class 12, or who are completing their studies but have still ended up in prison and are helpless, they mock the educational system even more.

These are some of the constant struggles one faces in working with prisoners towards their reformation and hence any intervention must take into consideration the prison setting and the prisoners’ frame of mind.

Inmates often become numb to all beatings and ignore the pain they have endured for years.

Another factor that affects the reformation of prisoners is their reaction to being reprimanded or punished for their anti-social behaviour. Inmates often become numb to all beatings and ignore the pain they have endured for years. They fear corporal punishment, but nevertheless manage to find ways to cope with the pain. Their bodies become conditioned to such physical pain after a point, so that many know how long the pain will last—for how many hours, or how many days. Sometimes the infliction of pain, and physical evidence of violence in the form of bruises and injuries, works in their favour, as it gives them an excuse to avoid work that is assigned to inmates by their fellow

prison mates or by the jail authorities. In all this chaos and stress of surviving, pleasing the powerful, and fighting their cases in court, their interest in education is little or nil, an understandable reaction on their part. Hence, it is quite a challenge to gain and hold their attention, or to interest them in education, and help them find value in the same.

Moreover, our experience revealed that the existing educational intervention rarely initiates dialogue on crimes and offences to an extent that might help inmates understand the wider world and their place in it, or to reason, or to express their views and concerns. We feel that it is critical to ensure that individuals inside a prison are allowed to embark on a journey that assures them of a better life after they are released.

Simply warehousing offenders and convicts will not help inmates prepare themselves for a life beyond crime. It would be naive to think that putting deviants in a place far away from society is a better solution. We should remember that 'once a crook is not always a crook'. Indeed, imprisonment and isolation exacerbate the problem because inmates are exposed to the influence of other bhais in prison who provide education of a different kind. Therefore, through our intervention, we sought to ensure that inmates get to use their time to re-educate themselves for a productive life on the outside. We wanted to create a culture centred around a safe space where inmates could share their knowledge, narrate their experiences, and express their views without fear of being judged or punished. This is a space where they can discuss and understand various issues, and learn from each other through activities, games, discussions, debates, and workshops. Based on our experience and readings, we can firmly state that no amount of prison time is appropriate or justified if one focuses only on meting out punishment and imposing discipline, and does not help and guide inmates to reform themselves as socially responsible and economically able citizens. In short, to rehabilitate prisoners, we first need to improve and strengthen our reformation-based activities in order to prepare them for life outside the prison walls.

Initially, our intention was to attract inmates and to motivate them to at least sit in the class for one and a half hours. We made sure to impart knowledge slowly. Hence, we would teach for twenty minutes and then slowly increase the teaching time, which at present is one and a half hours. We realized that we need to build the interest of inmates slowly and gradually

and we also understood the importance of truly absorbing concepts. Since we were working within the system, we had to follow the instructions and meet the expectations of the prison authorities. We made every effort to strike a balance, that is, to teach and make it as fun and interesting as possible, and, most importantly, to ensure that all instructional material was age-appropriate. We engaged prisoners in classroom activities like playing games and watching movies. It was clear that our students enjoyed interacting with us, or even simply sitting in the class. We took this opportunity to start teaching them basic arithmetic and language.

However, in prison, people learn to adapt quickly, and this flexible attitude helped the students accept the fact that all the materials in the classroom have to be shared

Receiving new pencils, fresh notebooks, chalk, stationery, etc. increased the students' interest and boosted their morale. It didn't feel like we were interacting with young adults, aged between 18 and 21 years, who are referred to as 'criminals'. They took pleasure in marking and personalizing notebooks by writing their names on the cover, and scribbling, drawing, and writing on them. All the materials provided were collected at the end of every class, as the inmates were not allowed to carry any item to their barracks. This restriction disheartened them, because they knew that the chances of getting the notebooks they had already used, and which they had personalized and now regarded as their own, the next day were quite low. Indeed, this turned out to be the case. The same notebooks were shared with two other batches as well. However, in prison, people learn to adapt quickly, and this flexible attitude helped the students accept the fact that all the materials in the classroom have to be shared and that they could not claim any item exclusively for themselves. They continued to be excited and curious about attending classes and we were able to gain their trust to some extent.

Classes in the prison never went the way we had planned. We might start by doing division sums, but would then take a break to talk about a recent movie or to sing songs, and might end with a discussion about the ill effects of consuming drugs and how drug abuse had led to imprisonment for many of the students. Sometimes, we discussed gender roles and stereotypes. It was interesting to hear some students admit that their stereotypical view that only girls and women do domestic work had changed after coming to the prison, as here they were required to sweep floors, clean washrooms,

wash their utensils and clothes, which they would have never thought of doing while living with their families. Keeping in mind the proverbial phrase ‘when life gives you lemons, make lemonade’, our team tried to incorporate the students’ own discussions, observations, and experiences into lessons on various concepts and help them perceive of the prison as a learning centre in all ways.

During this process, a few inmates volunteered to help us conduct the classes. They helped their fellow inmates to understand certain concepts, or explained a particular word in their language or particular vocabulary. We noticed that students picked up and comprehended things far more quickly when they were taught in a language (vocabulary) and style that is usually used in a prison setting. We identified five volunteers and asked them to help us create a separate curriculum for the inmates. The time spent by these five inmates in prison ranged from seven months to four years. They were well aware of prison dynamics and had cleared their class 10 or 12 exams. Initially, we asked them to just help us conduct the classes and to observe the needs and interests of the students. They sometimes helped inmates in their barracks too. Soon these volunteers came to the notice of the jail authorities; they assigned them duties in the education ward and this gave them an opportunity to become peer leaders. With this power came a sense of responsibility to meet the expectations of other staff members too. This had a positive impact on the other student prisoners and they too showed an interest in being volunteers and assisting in conducting classes.

The volunteers held an informal orientation for first-time offenders and newcomers on prison rules and timings as well as all the programmes organized by the education ward. They emphasized the importance of education not just from an academic perspective but also as a tool for changing their life course. Slowly, the peer leaders became the ‘go-to’ people for many inmates and staff members for organizing events in the education ward.

With peer fellows and a few other inmates, we created learning materials for conducting classes. We had to depend on our own resources since there is no internet access in the prison. The peer leaders spent a great deal of time in the library and held meetings by themselves, coming up with content and games that would work inside the prison. Every day, we sat together after

the class to discuss ways of incorporating their material into the curriculum. We developed a few products that peer leaders could use in their respective classes to conduct sessions.

When the peer leaders realized that they were spending their free time writing letters for inmates, they collectively decided that writing letters and applications should be part of the curriculum.

A few peer leaders helped fellow inmates write applications to the prison authorities, mainly addressed to the superintendent, seeking permission to make phone calls, asking for names of visitors to be added to the visitation list (mulakaat), requesting a particular job inside the prison (mushakat), or writing a letter of complaint. When the peer leaders realized that they were spending their free time writing letters for inmates, they collectively decided that writing letters and applications should be part of the curriculum. As a result, some semi-literate inmates started writing applications on their own. A few inmates, using prison vocabulary, created the Hindi alphabet chart for inmates who could not read or write. This helped in motivating students to learn the alphabet phonetically in a simpler and more fun-filled way. Not only were the students interested but they also learned at a faster pace.

Gradually, we realized that we should not limit our classroom teaching to language and arithmetic. It was also important to focus on other aspects such as gender-based crimes. The peer leaders noted all the queries and doubts that usually emerged during classroom discussion about gender-based crimes, especially those related to rape and POCSO. Since many students shared their individual cases during discussions, we along with the peer leaders wove these experiences into stories and featured them in comic books. The comic books covered topics like rape, POCSO, dowry, and consent. Playing cards and a board game were also made with the help of inmates after incorporating their experiences and learning. It was important to train our peer leaders to become facilitators in their classes and to sensitize them about these topics too. We started holding small workshops for peer leaders to instill a sense of teamwork, to create awareness, and to sensitize them about complex social issues.

With the help of the peer leaders, we created another group or tier of volunteers to assist the former in conducting classes. This helped in creating a group of responsible leaders and instilled a sense of collective responsibility. A few students were motivated to appear for the class 10 and 12 exams which were conducted by the prison authorities through the Indira Gandhi National Open University (IGNOU). Seeing their fellow inmates being able to read and write motivated other inmates to at least learn to write their names or to read the alphabet before they left the prison. Many realized that they might not get this opportunity and time after their release. Also, they knew that circumstances and conditions outside prison, due to their domestic and social responsibilities and roles, would prevent them from spending time on studying even if they wanted.

In prison, we learned that mobility of any kind gives the students a sense of freedom. Staying in barracks and not doing anything is difficult and often results in fights. Coming to class and spending one and a half hours, or more, interacting with other inmates from different barracks and wards helps them pass time in a better and more constructive manner. A few prisoners said that since the education ward is closed on weekends, time passes really slowly for them, as they don't have anything to occupy their mind. Hence, they look forward to Monday, so that they can constantly keep themselves occupied with different activities, which helps them divert their thoughts and put aside tension and anxiety about their cases and their remaining time in prison.

Even inmates who are illiterate or semi-literate are encouraged by the contextually designed curriculum to participate in classroom discussions. Since we mainly discuss the issue of consent and gender-based issues, students always share their views without hesitation. This also encourages us and makes the team feel that to some extent we have been able to create a 'safe space' for them to discuss issues that are generally ignored, sidelined, or suppressed. Since many inmates are inside the prison on charges of sexual assault, it is essential to discuss these issues at length. The inmates have learned to patiently hear when someone is speaking, even though they are only paying attention in order to counter the speaker's arguments, but it usually leads to a healthy non-violent discussion.

5. A success-cum-human interest story

Vijay (name changed) is inside for committing crimes against women. He has never been to school and initially had no interest in being part of the class. He spent most of his time loitering and often got into fights with fellow inmates. Even when he agreed to attend classes, he found excuses to leave, or slept through them, or sat on the last bench and daydreamed (perhaps of his release from jail). He never got involved in any of the class activities. We tried to interact with him, but he didn't share much. He outrightly said that he did not see any value in the class and had no interest in 'reforming' himself. This was his first time in prison and he felt that nothing would really change for the better for him.

Vijay made a few friends and spent most of his time with them. They were from the same barracks. One of them was a friend from outside. When his friend, Amit (name changed), wanted to sit in the class and participate in discussions, Vijay would tease him, saying "Itna bahar toh nahi padha [par] ab ja ke sari padhai yaad aa rahi hai tujhe" (You did not study this much outside, but now you want to learn everything). Amit laughed every time Vijay made this comment, but for some reason he continued to attend the classes and paid attention, even though partially, so that his friends would not disparage him. Gradually, after a month, Amit was able to recognize a few alphabets in English and Hindi, and was able to solve simple addition and subtraction problems. Vijay mocked him even more, but eventually he agreed to sit in the class for one hour at least. Initially, we thought he was just pretending to pay attention, as he did not copy what was written on the board, but soon we understood that he was genuinely struggling with the lessons and the fear of being derided prevented him from sitting in the class and learning. The moment Vijay started taking interest in the class, his friend Amit and a few others he knew were released, which increased his loneliness in the prison. Things were becoming difficult for him, as he started getting worried about his court hearings too. His family is supportive and visits him regularly, but he could sense pressure from his parents and felt that he had disappointed everyone in his life. Because of all this, his motivation to attend class and to learn flagged once again. To add to the problem, he was convicted and got a sentence of five years. He was shifted to a ward where all the convicts were staying. He was assigned to work in the kitchen. He soon realized that he missed coming to class and took permission from the authorities to sit in

the class for an hour when he got time off from his kitchen duties. He didn't participate much, but sat silently in a corner. However, he participated with enthusiasm when we discussed the issue of consent and related legal aspects. He cleared the doubts of his fellow inmates. The peer leaders encouraged Vijay to speak up in class. After some time, thanks to all the attention and assurance he was getting in the classroom, he was motivated to study. He approached a peer leader and asked for help in reading and writing Hindi. One of the fellows took charge of helping him read and write Hindi and English. Though he is still in jail, Vijay continues to attend classes. He has started to read both Hindi and English alphabets and tries to read newspapers and books independently to increase his fluency.

Though he is still in jail, Vijay continues to attend classes. He has started to read both Hindi and English alphabets and tries to read newspapers and books independently to increase his fluency.

6. Intervention

As a team, we agree with Victor Hugo's observation, 'He who opens a school door, closes a prison.' Education plays a key role not only in shaping an individual's life but also in influencing the larger society, in determining family security, social good, and national development. Goal 4 of the Sustainable Development Goals (SDGs), a collection of 17 interlinked goals set in 2015 by the United Nations General Assembly, calls for quality education and lifelong learning for all, and one of the indicators (4.6.1) shows the proportion of youth and adults with functional literacy and numeracy skills. Similarly, Goal 16 states: 'Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.' Goal 1 states: 'End poverty in all its forms everywhere.' Even though Goal 16 is linked to the criminal justice system yet none of the goals and indicators discuss the situation of prisoners specifically.

Project Second Chance strives to improve the lives of the incarcerated. Through our work in Tihar Prison, we have sought to improve the quality of life and enhance the employability of under-trial inmates by strengthening their engagement in alternative educational and livelihood programmes by involving them in the development of a separate curriculum for them. We

plan to reach out to other jails and to develop similar spaces where inmates can learn and express themselves.

The aims of the intervention are to:

- i. Facilitate a structured and constructive transformational programme for inmates
- ii. Encourage behavioural change among inmates during their time in prison
- iii. Reduce the rate of recidivism
- iv. Develop well-trained and highly capable internal service providers to provide timely support to inmates
- v. Reduce the stigma against those who have been incarcerated

After briefly describing our ongoing work under Project Unlearn, we will now discuss our context-based educational curriculum.

The Pehal educational kit has been conceptualized and designed to educate inmates and other potential students beyond the regular curriculum. The aim is to make an impact at the cognitive, psychological, and emotional levels. The kit covers a 90-day curriculum. Its design and language are inclusive and inspired by the student's milieu for ease of comprehension and maximum impact. The contents incorporate data points from the need assessment research done at Tihar Jail, Delhi, as well as valuable inputs from stakeholders, inmates, and experts. The kit is structured to apply to constituents and audiences beyond inmates. It can be used as a teaching aid by organizations that work with at-risk youth across the country. The products were chosen and modified to engage the inmates productively and to allow them to find answers to their problems through discussion and dialogue rather than a more orthodox didactic approach focused on dictating morals and cultivating virtues.

Pehal offers a new way of looking at life, especially at gender-related crime and violence, from the eyes of a young adult.

Pehal offers a new way of looking at life, especially at gender-related crime and violence, from the eyes of a young adult. The kit consists of five products that facilitate the process of learning, acquiring basic literacy skills, and developing better life skills.

- 1. Patte par charcha (Discussion over a game of cards):** This product inspires participants to engage in conversation while playing a game of cards. We designed and customized playing cards to educate the inmates. Each of the four card suits focuses on information and trivia that could serve as a conversational starter and as food for thought. The topics are personalities who became famous after spending time in prison, fun facts about prisons from across the world, the constitutional rights of a person during arrest, and motivational quotes on second chances in life.
- 2. Buniyaad (Foundation):** This product aimed at neo-literates lays the foundation for reading an alphabet chart. It is based on the traditional alphabet chart, but uses words that inmates can relate to and that often feature in their vocabulary. Two words are paired with each letter to subtly promote positive ideas and to create a distinction between good and bad. These pairings are also meant to trigger conversations among inmates.
- 3. Soch (Thinking):** This product inspires thinking through an innovative board game that takes inmates on an enjoyable journey of chances and choices. The board game's interactive approach promotes inmate engagement during their recreational time. Players roll a dice to move across the board. Each tile on the board requires the player to select a card from a deck. The card contains random questions on the inmates' learnings in class, forfeits, and simple fun activities. The game teaches inmates to evaluate various scenarios based on the new values they have learned in class and rewards them for their engagement. The topics covered are consent, harassment, and gender equality, along with general knowledge and the game of forfeits.
- 4. Nazariya (Viewpoint):** This product is a compilation of four sets of stories, presented as a comic-book series, inspired by true events in the life of inmates. Each story aims to provoke questions about our own preconceived notions and to learn to appreciate another person's perspective and point of view. Since the reading skills of inmates vary considerably, they often read stories together in groups. The four storybooks are designed in a typical comic-book format, covering topics that most inmates can relate to: consent, domestic violence, dowry, and sexual abuse of children. The storylines are inspired by true events as narrated by the inmates, and the contextual setting is designed to make it more appealing to and relatable for inmates. Each act described in the stories has related questions that act as triggers for discussion and self-realization.

5. Drishti (Direction): This product looks at learning beyond the three Rs (reading, writing, and arithmetic) through an innovative lens focusing on reform and well-being. Since the inmate population consists largely of school dropouts and non-readers, the curriculum is aimed at making an illiterate inmate functionally literate.

We learned that in order to curb crimes against women, a holistic approach is essential. It is important to not only work with incarcerated youth but also to prevent them from committing such crimes in the first place. We conducted a survey inside the prison to identify high-crime neighbourhoods and communities that are vulnerable to crime. Thereafter, we started working closely with organizations in these communities to implement the Pehal kit and to engage at-risk youth in a meaningful conversation on gender-based violence through workshops and sessions. We reached out to various stakeholders engaged in working with youth in conflict with the law or those who are at risk of engaging in anti-social activities.

The Pehal educational kit along with the training programme is sold to prisons, correctional institutions, non-profit organizations, or any organizations working for the welfare and reformation of at-risk youth using education as a tool for bringing about positive behavioural changes and for increasing literacy. The educational kit comes with a service for training trainers to become facilitators and to conduct workshops and sessions.

7. Impact

As mentioned above, Project Unlearn aims to achieve gender justice and to nurture responsible citizens by re-educating and sensitizing inmates and at-risk youth about gender-based violence and crimes against women using a contextually designed curriculum called Pehal. We believe that increased awareness, knowledge, and sensitivity related to these topics along with a degree of functional literacy will have a positive impact on the attitude of inmates towards such crimes. Steps to reduce levels of actual abuse of and violence towards females appear promising and effective, although our evaluation has largely focused on short-term outcomes, as behavioural change is difficult to map in a short period. Hence, to evaluate the change in attitude and the increase in awareness among youth after they have attended our programme, we plan to use two tools, the Gender Attitude Index Tool and the Legal Index Tool. These are in the process of being designed and will be implemented in due course. The layout will be as follows:

Gender Attitude Index Tool: This tool assesses the impact of the intervention on gender attitudes as revealed by normative statements by participants. This comprises questions on gender-based violence.

Legal Index Tool: This tool assesses the increase in legal knowledge and awareness of gender as revealed by normative statements by participants. This comprises questions on the legal consequences of inmates’ actions and behaviour.

Table 1: Monitoring and Evaluation Tool

S. No.	Outcome	Indicator
1	Improved literacy	Assessment of competency level pre-intervention and post-intervention
2	Increased leadership competence	Percentage of peer leaders trained by former peer leaders
3	Increased sensitivity towards gender-based violence	Percentage increase of score on Gender Attitude Index Tool (baseline vs. end line)
4	Increased awareness of legal ramifications of gender-based crime	Percentage increase of score on Legal Index Tool
5	Creation of safe and comfortable setting where participants can discuss culturally sensitive topics	Percentage increase between baseline and end line

We truly believe that awareness of gender-based violence among youth would result in attitudinal and behavioural changes related to traditional gender norms and violent behaviour, but these interventions will require more rigorous evaluation.

8. Future plan of action

- Designing and development of the curriculum in Hindi, English, and other regional languages
- Implementation of a pilot study of the curriculum
- Implementation of the curriculum in prisons in Delhi, in other state prisons, and in vulnerable communities
- Standardization of the Pehal educational kit

In conclusion, we envision that the Pehal educational kit will facilitate step-by-step changes not just in acquiring an education but also in honing the thought processes of prisoners and youth who are vulnerable and at risk

of falling into anti-social behaviour or who have been involved in criminal activities. The purpose of the kit is to bring about changes at all levels, including cognitive, psychological, emotional, and moral. All the components of the kit are interconnected and facilitate the transformation of youth at risk so they can lead a good and productive life after their release from the correctional institution

9. Acknowledgements

We first and foremost thank our stakeholders who have helped us grow and understand the concept of prisoner reformation and rehabilitation based on their real-life experiences. Thank you for trusting us with your stories. We also thank the prison authorities for supporting us in our daily endeavours. We thank our organization, TYCIA Foundation, and our team members for believing in and supporting our ideas, and for helping to transform these ideas into our vision and goals. Lastly, we express our never-ending gratitude to our families who have supported and encouraged us to work in the criminal justice system.

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About TYCIA

TYCIA, which stands for Turn Your Concern Into Action, is a non-profit, community-based organization working on creating equal opportunities for marginalized communities through education and livelihood opportunities. It aspires to improve the living conditions of marginalized communities through community initiative, participation, and sensitization. TYCIA, which was founded in 2011, has worked among marginalized communities in urban slums in Delhi and in remote interior pockets of the most underdeveloped parts of Madhya Pradesh. It has reached out to more than 10,000 beneficiaries.

Our interventions aim to achieve large-scale positive changes through economic and social programmes. In 2017, we, with the support of a few other organizations, set up a school called Better Life Pri-School in Tihar Jail No. 5, in Delhi, which houses young offenders in the age group of 18–21 years. We engage with them by providing quality education and life-skills interventions.

III.C: Naya Daur - Marking the beginning of a new age

Iswar Sankalpa²⁴

1. Problem Statement

According to the government, “Houseless Households” refer to families who do not live in ‘census houses’/ homes with a roof, and are found on roads, pavements, under the flyovers, railway platforms and the like. Between the two censuses in 2001 and 2011, the numbers of these houseless households in urban India showed 37% growth (from 1.87 lakh to 2.56 lakh). This is majorly due to the unavailability of the various social schemes; most of which are meant for the ones in the rural areas. During the same period, West Bengal recorded an increase in the number of homeless households by 48% (from 19,385 to 28,647).

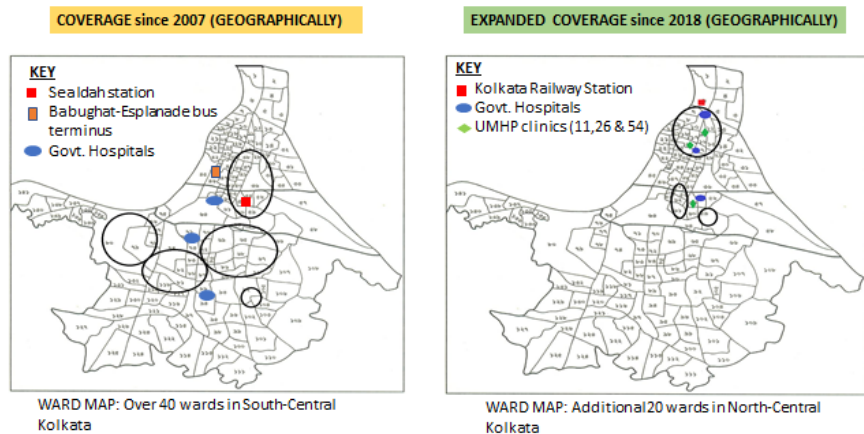


Figure 1: Ward maps indicating the coverage of our program

Sabuj (2014) in his study on the Homeless people of Kolkata, elaborates that, out of the 141 Kolkata Municipal Corporation wards, homeless people were found in 118 wards. These people had no safety (belongings got stolen), varied weather conditions made their life difficult, living conditions were

²⁴ Contributed by Piyal Kothari

unhygienic and they were frequently evicted by the police or harassed and tortured by other community people.

Homelessness might lead to mental health issues or vice versa. They are two pervasive issues that societies need to urgently address, as both have a negative impact on the lives of individuals and communities (Kaur and Pathak, 2016). A couple of studies have been conducted to understand prevalence of mental illness in homeless population in developed and developing nations; one of them states that out of the 140 homeless persons admitted to the department of psychiatry of a North Indian medical university (Feb'05 - July'11), 90.7% were diagnosed with psychiatric illness and 55.7% had more than one psychiatric disorder. 84.3% of the total admitted²⁵ experienced mental illness before leaving their home and 54.3% left home due to mental illness. After treatment, it was possible to reintegrate 70% of the patients into their families. No treatment or inadequate treatment for the mental illness

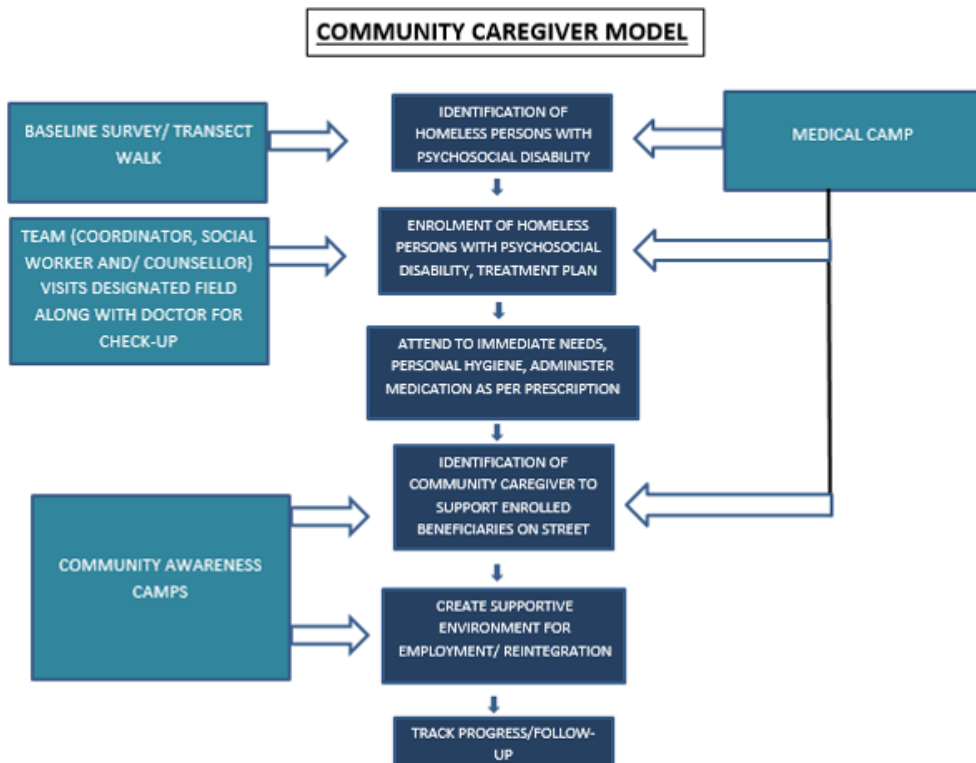


Figure 2: Community Caregiver model

²⁵ Psychiatric illness is interchangeably used with mental disorder/ mental illness – no difference (it is an umbrella term) Psychotic disorder are severe mental disorders

was found to be one of the common causes for homelessness. Additionally, amongst the psychiatric illnesses in homeless persons with mental illness, 65% were found battling psychotic disorders, 44.3% were found to be in the grips of substance use and 12.9% were grappling with bipolar disorder/ mania (Tripathi et al., 2013).

In 2007, Iswar Sankalpa conducted a Baseline Survey of Homeless Persons with Mental Illness within the 141 wards of Kolkata. The survey, conducted over a period of 8 months, **identified over 466 persons in need of immediate medical treatment and psycho-social support.** The disorder profile of persons identified in the Baseline study is illustrated below in Figure 3:

Other findings include the following:

1. The majority of the people were 18-35 year.
2. 20% of cases had major physical ailments
3. 90% of the men had physical injuries
4. While women were the most vulnerable to sexual abuse and harassment, men were also subjected to physical abuse.
5. A large number, mainly men, were prone to substance addiction

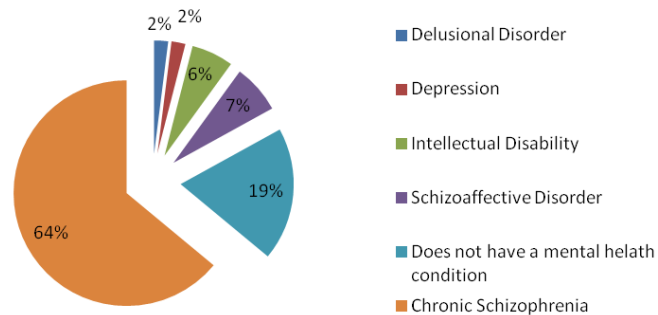


Figure 3. Disorder profile pie chart

There are about 400,000 wandering mentally ill persons in India. They are found battling mental distress and physical abuse especially in urban areas. They hail from economically poor and socially marginalized sections of the

society. Nine out of the ten have diagnosable and treatable mental health conditions and four out of five have co-morbid physical health issues. This picture becomes all the more complex given the fact that India lacks adequate supply of mental health services and the ones that exist, are inaccessible in majority of the cases. Homeless persons with mental illness are a special population, for they need to be picked up from the streets to be taken to the hospital, they lack an identity, no past history is available either due to memory loss and/ absence of a familial support and most of them suffer from severe mental disorder calling for a rehabilitation either through reunion with respective families or establishment of shelter homes (Singh, Shah and Mehta, 2016).

Unemployment and poverty have also been found to be intrinsically connected to homelessness and mental illness. While there is no causal link between poverty and mental illness, the two states can feed into each other – while poverty and its attendant stressors are a breeding ground for mental disorders, untreated psychiatric disorders can lead individuals and families into unemployment, social alienation and poverty. Poverty, homelessness, mental illness coupled with physical health issues forms a grim picture of persons living on the streets for years.

Civil Society Organizations in this field are few like *Health Initiative Group for the Homeless* (a joint initiative by the Institute of Human Behavior and Allied Sciences, *Aashray Adhikar Abhiyan*, and Delhi State Legal Services Authority), *Koshish* (by Tata Institute of Social Sciences in Delhi and Mumbai), *Adaikalam* by Banyan in Chennai (Lancet, 2016). The National Report on the Status of Shelters for the Urban Homeless (2014) outlines that the number of permanent shelters for the urban homeless is woefully inadequate in India and the allied services are virtually absent in the shelters. The accommodation capacity is far below the normative stated by the Supreme Court and the National Scheme of Shelter for Urban Homeless. In Kolkata (West Bengal) against a need of 44 shelters, there exists only 29 permanent shelters for the urban homeless, out of which only 14 are operational. Government agencies at both state and national levels fail to take responsibility and have no policy or planning for Homeless persons with mental illness in particular.

2. Naya Daur - Theory of Change

While we offer alternate forms of living and holistic care and support -it allows for individual choices, adapting the support according to individual preferences and needs (*The client's choice centres all decisions and interventions offered, starting from accepting food, to taking medicines, degree and manner of interaction with the team, sharing information about the families, engaging in employment...*). The belief that intervention, medical or otherwise, should be kept at the minimum level, with minimum disruption of a person's life ensures that treatment and support is provided to the extent that is desired and accepted by the person concerned, while trying not to subsume his or her existential self under the rubric of modern psychiatric and developmental discourse.

By including neighbours and local communities as strategic partners in facilitating change, we aim to reduce the stigma against mental illness propelling not only 'clinical but also social recovery of the clients.'

By including neighbours and local communities as strategic partners in facilitating change, we aim to reduce the stigma against mental illness propelling not only 'clinical but also social recovery of the clients.' By making institutional stakeholders, especially the government, take responsibility for the health and development of a vulnerable group of people, can make the desired change sustainable in the long term. Through a community-based model, we hope to elicit and understand the meaning of 'madness' in local cultural contexts, and bring them into its theorization and practice. We believe that a different concept of mind – its health, its pathology – born out of community experiences, and perceptions can help evolve a more viable and sensitive notion of community care in the field of mental health. In the long run, we hope to offer an alternative model of understanding (alternate to what is being taught and practiced in hospitals and extension clinics-contributing to pathologization and marginalization of human beings) of mental distress as well as caregiving for the distressed and that interventions need to be designed at every stage of the continuum: stress-distress- disorder-disability. (Refer to Figure 4)

3. Process Narrative

The Community Outreach Programme underscores the political stance of the organization – an attempt at development of an alternative pathway of community care for homeless persons battling psychological disabilities which will surpass the need of uprooting them on the pretext of providing care and treatment. The process of care thus follows the principle of minimal & necessary medical intervention with maximum community engagement.

This model of community-based treatment and care entails the following steps -

3.1. Identification, engagement with, and enrolment of homeless persons with psychosocial disabilities:

During the community survey conducted a decade back, the target areas for intervention were selected (having high concentration of potential clients) and social workers were allocated specific field(s) of work. Since then, identification of potential clients has been primarily through-

1. Observations and Rapport establishment:

- a. Social workers make notes (identification sheet) about potential clients (ones who are evidently homeless exhibiting signs of psychosocial disability) and keep them under observation for a minimum 15 days while deliberating upon their enrolment into the programme since service delivery would get hindered in cases of extremely wandering population.
- b. After identifying and before enrolling the potential client, the social workers undertake an arduous journey of rapport building with them to pave the path for reception of services.
 - i. This process involves creating a sense of familiarity through regular visits, For example, During this phase, the outreach worker would visit the client every day with the mission to initiate a conversation – For example:
 - “Would you want to have tea/biscuit/water”
 - “What is your name?”
 - “How long have you been here?”Then would proceed according to the pace and choice

of disclosure by the person and make consistent visits. The identified person would be made to feel that this meeting is desired and important too for the stranger/ outreach worker who is visiting without fail

- ii. The outreach worker builds rapport with the person by talking to him/her about what s/he does during day, what s/he finds engaging in daily life casual conversations “My name is Ashish” - let him/her know their name, For example:

“What is your name?”

“My house is in Badabazaar; where is your house?”-

“Do you have a friend here or someone who gives you food?”

“I will come again tomorrow, stay here only”

“Namaste!”

- iii. The Social worker/Outreach worker creates a space of trust through loving gaze, caring words, a non-threatening touch, and provision of basic need- some food and water. The development of this therapeutic relationship is very crucial but not a time bound goal, calling for immense patience and motivation on the part of the front-line workers. This process on an average requires a month-long engagement till the client becomes comfortable with the social worker.

- c. Once rapport is established, the Psychiatrist visits the site along with a psychologist/ counsellor for a comprehensive health assessment of the identified person(s); upon multidisciplinary team consensus and recommendation, the person(s) are enrolled into the programme for continued service. An individual care plan is drawn up too.

2. Mental health camps organized within the community: Apart from direct observation, the team also conducts mental health camps with the support of community organizations; these camps in the community spaces bring health services directly to the potential clients who otherwise wouldn't be able to access them (wherein they are assisted with bathing, provided food, fresh pair of clothes, basic materials for personal hygiene, counselor's meet-up and doctor's check-up)
3. At the time of enrolment, a thorough assessment of the client is carried out: their history is elicited by the counsellor and doctor, a quick overall physical health check-up, a mental status examination (General appearance of the potential client, Speech, Mood, Thought Content, Thought Process, Memory...are studied) and a baseline psychosocial assessment (standardised scales such as Indian Disability Evaluation and Assessment Scale, Life skills Profile are administered) is conducted

(levels of self-care, social skills and the like are gauged) and a provisional diagnosis is made. Based upon this, an individual care plans drawn up (Figure 5)



Figure 5: Program staff making individual plans

- An important spillover impact of the enrolment process is that it 'visibilizes' the very 'invisible' population, establishing the fact that they are approachable. A caring hand directly extended (physically and figuratively) to the apparently 'roadside mad' man/woman questions the prevailing public notions about them- that they are violent, a constant threat, a hopeless case and as good as dirt.' **Moreover, on witnessing the social workers interact, touch, bathe, feed and engage with them, quite a few community members get encouraged to join hands.**

3.2. Providing Treatment, Care & Support to Enrolled Clients

The treatment regimen for the enrolled clients primarily involves planning modes of intervention along the following lines-

- 1. Basic Health-care:** The clients are provided a one-time meal (if not available within the community) and encouraged and assisted to maintain their personal hygiene by the social workers on a daily basis. The social workers regularly visit to ensure the clients take a bath (usually at community *Sulabh* Complex), trim their hair & nails with the help of a local barber, and wear fresh pairs of clothes (provided). They are accompanied by the social workers as and when required. First aid service and hospitalization in cases of emergency is also provided.
- 2. Pharmacotherapy:** Social workers make efforts at obtaining consent of the clients for treatment. Once sought, they inform them about regular doctor consultation wherein the doctor would visit the client on



Figure 6: Social worker helping the client to take a bath

the street itself for check-up (usually every 15 days to a month) for free. The social workers then provide medicine(s) to the client directly everyday as per doctor's prescription barring weekends. (Refer Figure 7)

3. Psycho-social care: The enrolled clients are visited by the organization's counsellor once almost every two weeks for some caring and motivational interaction to expedite their social recovery. Daily communication with the client is goal-oriented in the way that it seeks to motivate the client to take decisions regarding their well-being, regain control of their life and develop hope for the future. These counsellors also administer psychometric scales every quarter to quantitatively record the overall levels of improvement since the time of enrolment-

- a. Indian Disability Evaluation and Assessment Scale (official tool used to assess disability in persons with mental illness and for their disability certification)
- b. Life Skills Profile: A measure to assess general functioning of the clients
- c. Positive and Negative Syndrome Scale: Scale used for measuring symptom severity in clients battling Psychosis
- d. Global Assessment of Functioning: A scale to understand how well a client is functioning in her/her daily life

Individual care plans (ICP) are prepared in conjunction with the client, who is supported to make every decision through a process of informed consent by the staff. ICPs are based on the clients' personal goals and an intervention is collaboratively developed with the Naya Daur team. The plan is revisited every quarter to assess the progress made and to change the goal/plan if required. The staff understand that clients may be unable to decide at a particular point in time, thus they continually check with clients. The multidisciplinary team holds case conferences, quarterly reviews and annual needs assessments for each client where clients' recorded will and preferences are incorporated into their ICP. Clients' voices and feedback are informally incorporated in service design and implementation.

3.3 Identification and engagement of Community Caregivers

The social workers at the time of enrolling potential clients try to mobilize the support of local community members too; i.e. they negotiate with them for co-facilitating the care and treatment process. On having observed the

clients for long the social workers learn about their sources of survival – the individuals in the community who may be providing tea, some water, food, clothes to them already. The social workers then approach these caring souls to partake in the treatment process.



Figure 7: Counselor providing medicines

These caregivers anchor the care, treatment and recovery process of the clients in numerous ways.

Above all, they act as proxy families and develop as a source of emotional and social support for the clients in the community- someone who would pleasantly acknowledge the presence of the client through some daily interaction too.

The idea is to tap on this invaluable community resource (someone acquainted with the existential pattern of the client and someone who is a known face to the client) and channelize their inherent compassion towards the client's recovery. The negotiation to convince them to participate in the care and treatment process involves debunking the myths associated with homelessness and mental illness and assuring them of complete organizational support. The support offered by these caregivers is completely voluntary in nature and in majority of cases it is sustained by the palpable improvement observed in the client's overall health status. Additionally, they are invited to Naya Daur's annual caregivers' meet to encourage peer support.

3.4. Rehabilitation, Reintegration & Follow up

Progression towards this phase is the ultimate aim of the programme and it is usually slow and extremely difficult; the onset of this phase is dependent on client's improvement in overall functionality (reduction in symptoms, improvement in levels of self-care, communication, social engagement) Introducing to rehabilitative spaces & engagement in supported employment: The day care centres run by the organization are usually used as rehabilitation space for recovering clients wherein their personal hygiene is taken care of, they are engaged in vocational therapy (beading, making art and craft products...) and functional literacy classes. This also helps them get some

respite from the 'stony streets.' If for better outcomes street care is felt insufficient then the two shelters (for males and females) are also offered to them as options for continued care and development.

- i. Usually, the caregivers engage the clients in their own small shops/ occupation when they find them improving (assisting in roadside eateries, selling small goods, cleaning stores are some of the odd jobs the clients are involved in). In other cases, they are encouraged to look for some opportunities too within the community wherein there would be reasonable[2] accommodation
- ii. Alongside, the visiting counsellor offers motivational sessions to the concerned client to begin and sustain a more productive life. The social workers also negotiate with the caregivers to offer some monetary incentive to the clients in return for the work they do. The social workers follow up on the client's engagement in jobs.
 - a. Enabling Clients' Access to Entitlements: The team also advocates for client's access to identity markers (Aadhaar & Voter Id) and entitlements such as Disability Card since political recognition and benefits are crucial for sustaining client's recovery and rehabilitation.
 - b. Tracing their families and reuniting them: Usually as the clients regain cognitive functioning post continued treatment, they are able to recollect and share their family and home details. If the client wills, the organization's team follows up on the same to trace it. If located, families are informed about the client and made aware of the condition and future course of action. Once the client returns home, the team continues to follow up through phone calls, home visits (usually if within West Bengal) and OPD run by the organization to ensure after-care.

If the families cannot be located, or refuse to take the client back or if the client himself or herself refuses to return, then alternative arrangements are sought- reintegration into the community space itself with the help of their caregivers (in many cases the caregivers extend a roof over the client's head). It is only after 5 years of successful community reintegration (i.e. when the client is staying with his/ her family or within the community comfortably) that the follow-up is discontinued, marking the client's exit from the programme. However, their re-entry into the programme is always possible.

4. Challenges

4.1. The nature of the target population, mental health condition and the care & treatment space:

- a. The target population (homeless persons with psychosocial disabilities) are a highly itinerant group and an extremely vulnerable population; attempts at bringing them into a care and treatment regimen (with their due consent) while upholding their right to freedom of choice is challenging for it results in drop-outs from the programme and supported employment (if present).
- b. Even if they receive our care and treatment, the course of recovery while being on the streets is seldom linear due to the presence of myriad extraneous non-controllable variables such as lack of shelter, absence of familial support, presence of street predators, vagaries of weather, absence of identity documents, severity of mental health condition to name a few. In certain chronic cases, treatment and support may be required for the client's complete life -span. Moreover, even if the client exhibits signs of recovery, there always exists a risk of relapse due to a combination of physical, psychological, socio-emotional and socio-economic factors. Thus, even a small movement in the desired direction is a matter of celebration.
- c. Above all, the very site of intervention- the streets, robs the organizational team of the power to channelize the care and treatment process in a particular direction (which is relatively easier in a closed setting such as a shelter/ a clinic). A lot then depends on their power to negotiate, build and maintain rapport with the clients and strong network within the community. This also means a relatively longer period of engagement before discernible changes are noticed in the client.
- d. One of the other great challenges is addressing the target group's propensity for substance use for the drugs that are easily available on the streets. Rapport building process is highly challenged by (potential) clients who do not cooperate due to florid symptoms (anger outbursts, heightened suspicion...). Because it's a wandering population's difficulty to find them each at the same place and at the same time the social worker might have to do multiple visits.

4.2. The ignorance & indifference at the community level:

Even while the care model is based upon the idea of tapping compassion and care in community settings, there is lack of awareness and widespread ignorance with relation to persons battling mental illness and homelessness. The prevalent stigma and associated discriminatory practices often makes it hard for the team to garner cooperation from community members in pursuit of their goal. It is only the team's motivation and belief in the work which aids them to march ahead even in very hostile and unfavorable spaces.

4.3. Lack of political will to address the issue:

Homeless persons with psychosocial disability aren't featured in the developmental discourse since they are perceived as a public threat and the compartmentalization of government departments and services makes it extremely difficult to expect any meaningful result.

- a. The State health department is reluctant to work with the said population for they are homeless, falling outside their purview of interest; and the State Social Welfare department too refuses to address the issue since the population is battling mental illness. This oscillation makes it extremely difficult for the team to ensure the rights of these individuals.
- b. Additionally, fragmentation of general and mental health care services at the state level also compounds the existing problem. The organization is always at the risk of having to rebuild support of concerned government officials in cases when they leave, or are transferred or complete their term.

5. Formal and Informal Strategies

- a. Organizing Community Awareness Camps: Social workers along with other team members also organize community mental health awareness camps in association with local community bodies to dispel myths around homelessness and mental illness, to encourage voluntary participation of the community in caregiving and to generate kind donations for the clients. This is usually to develop greater acceptance for the target population and enable their social inclusion.

- b. Annual caregivers' meet: This is organised for the community caregivers so that they can meet each other and feel good about the work they are doing. They are also psycho-educated by the team- trained to provide services to the clients and this platform is also used to acknowledge their support. The caregivers are most often part of the informal economy themselves and do not have high economic security which can cause the caregiver to go through his/her own set of problems while taking care of our clients and burn them out. Meeting other caregivers, creates a sense of community and reinforces their belief in the work they do and also exchange ideas and strategies to provide better care.
- c. Case conference every 3 months to track success: Every 3 months the client progress is studied based on the monitoring tools and observations made by the social worker, counsellor and the doctor. Based on this further steps of care provision are decided that are unique to every client based on his/her present progress.
- d. Other important formal strategies are **networking and advocacy** with key stakeholders (government, hospitals, employers), use of **social media** to raise awareness and **psychoeducation of families** for greater acceptance.

6. Informal monthly ambulance strategies:

During the medical check-up every month, the social worker, counsellor and the doctor go around the field area to meet the clients and check their progress and decide few informal steps about how to proceed with the care and treatment process by incorporating clients' will and preferences. This is an interesting process because the ambulance is also a space where sociological knowledge about the client's health and well-being guides the medical knowledge and prescriptions. Thus upholding the foundational value of a community mental health care model.

The psychiatrist discusses the status of the client with the social worker and counsellor on these visits. The issues hindering the progress can be issues like the client not wanting the food given by the social worker and eating junk food, not taking up work, defaulting on their agreement on non-consumption of drugs or alcohol etc. The team reasons with the client and asks him/her as to what difficulty they are having? Why don't they like the food? what kind of work they want to be engaged in? Why did he feel like smoking or drinking the other day? Because the team has established a good rapport and trust, clients often confess their non-compliance and seek help.

The process of counselling the client, negotiating with the client and making sure he follows the individual care plan is a long and seemingly never-ending process but the team believes in strengths based approach and providing supportive/motivational counselling. Moreover, the programme is developed in a way that it does not see faltering of the client as a problem but as part of the progress itself. Thus the care and treatment is rooted in the social location and environment of the client and not in their medical diagnosis.

A New Lease of Life: Bijon's Story

A nameless, homeless, fierce looking man in his 30s in tattered clothes roamed around *Bijon Setu*, the *Kasba* flyover near *Ballygunge* railway station –triggering fear, disgust and sometimes sympathy from the locals and the passersby. His long-matted hair and beard, unwashed body and malnourished frame showed signs of living on the unkind streets for many days. Yet he was oblivious to his physical state and challenged the world with his angry eyes. One kind hearted lady, who often passed him by on her daily commute, was deeply concerned. Her path crossed with Iswar Sankalpa (IS) and she alerted us about the man. The man's story of change started on a day in July 2014 when an IS outreach social worker of the Ballygunge field, *Swapan* visited him. It was not an easy task to win his trust. He wouldn't accept food or water, or even speak to *Swapan*. Daily visits and caring gestures, finally made him respond to his negotiations after a few weeks. Once he gave consent for intervention, IS psychiatrist checked him and found him battling severe mental health conditions. *Swapan* involved the local community members- *Sunil babu* ran a soft drink vending stall and *Kanan Biswas* was a tea stall owner under the flyover. Both came forward to help the man willingly. In absence of a name, he came to be known as '*Bijon*' named after the flyover where he usually roamed.

Psychosocial interventions from Iswar Sankalpa helped *Bijon* become clean and calm. He accepted medicines, hygiene care, food and counseling therapy and slowly started regaining his memory. He remembered his real name as '*Md. Ashif Iqbal*' and that he lived at his maternal uncle's home in *Rajabazar*. A visit to his home by the IS restoration team revealed *Bijon*'s past. He had lost his mother at an early age, he was left at his uncle's home by his father who moved on to start a second family. Uncared for, he befriended local boys who introduced him to drugs which deteriorated his mental health

condition. The neighbors and family members were troubled by the nuisance created by *Bijon*, they beat him brutally. Physical, mental and social abuse made his mental health condition worse and he often wandered away.

Overtime he recorded stark improvement. He continued to dwell at the flyover, as he wasn't ready to go back home. His memories of past experiences of brutal abuse and neglect haunted him. He happened to like his new friends *Swapan*, *Sunil babu* and *Kanan Mashi* and found a new home in the caring community around the flyover. *Anirban*, a volunteer at IS visited him regularly, motivating him to engage in work. *Bijon* helps *Sunil Babu* sell the drinks. IS continues to strengthen the community network of support, care and love around *Bijon* as the final step of community-based rehabilitation for him.

Bijon's story is a significant example that mental health care can be facilitated outside the boundary of institutions. In the cradle of community care, *Bijon* has had a second chance at life as a functional, productive human being who can sustain himself with the basic dignity that all citizens are entitled to.

Naya Daur is focused on allowing its clients to recover and feel healthy at their own pace. Here are two cases of Abdullah and Ashok and their timelines to show that every case takes its own time.

Abdulla's treatment and resettlement timeline

August 2007	Abdullah, aged around 60, was found at the Hastings in a poor hygienic condition, sitting in the dark covered with garbage. He was sitting in the posture of offering namaz. He did not speak at all when we met him. After a few days through gestures he expressed that Allah ordered him not to talk to anybody. Our field workers brought him to one the health camps.
August 2007	Mohamad Nihal, a grocer volunteered to take care of Abdulah. He started providing him food, clothes and helped maintain personal hygiene. After regular treatment and medication he showed improvement in selfcare, hygiene. Within a year he started working at Nihal's shop, started communicating. He could speak english and informed us that he was from Maharashtra and his name was Suresh Kambli. He previously worked at Nanavati hospital (Mumbai) in the Radiology department.
September 2008	Initially He earned around Rs.1500 per month, then started securing about Rs.3000 per month. Nehal continued to support him with food, clothes and other items.

October 2016	Ishwar Sankalp withdrew all the services from Abdullah (Suresh) as he started living with his caregiver Nihal who had embraced him as his own. For further care and treatment, he was tagged to a government hospital. He was the first community resettled in the case of IS.
October 2018	Abdullah (Suresh) participated in workshops and conferences of IS and shared his story with people. On 26th October'18 he along with IS secretary Sarbani Das Roy participated in 'Kaun Banega Crorepati' television reality show.
June 2019	The turning point in Abdullah's (Suresh) story was when the reintegration team traced his family after almost a decade through his daughter who worked as a nurse in a private hospital in Mumbai. His family willingly received him after he went missing for the last 32 years. There was a history of mental illness in Suresh Kambli's family.

Ashok's treatment and resettlement timeline

January 2019	A person aged around 32, was identified at <i>Sealdah</i> station, South Area. Initially he could say only his name - Ashok. He was in poor hygienic condition. He wore multiple clothes and was non-communicative but was co-operative and could follow instructions.
March 2019	Due to severe anemia he was treated at a government hospital and was eventually taken to a private facility. During this period he revealed details of his family members and his home.
April 2019	He desired to return to his home at <i>Samastipur</i> , Bihar. His family was traced and he was handed over to his family with whom he reunited after 5 years.

Key Achievements - Facts and Figures that matter

The community mental health programme has brought about small but significant changes in the lives of the clients, that of their voluntary caregivers, families (in cases of reunion) and evoked State response too.

1. Over **3500 lives** have been touched and transformed through street care in the last 13 years of working in over 60 wards of the city; all of them were guaranteed basics of life- food, clean clothes, health care and human touch
2. Each year nearly **200 homeless persons battling psychosocial disability** are found under regular care and treatment process

3. **60+ Medical camps, and 250+ Mental Health Awareness camps** have been organized in the communities **reaching out to over 4000 people** since the beginning
4. The care network has been widened in the last decade to include **250+ voluntary community caregivers** who have not only extended care but also referred potential clients to the social workers
5. **7% of the total active clients usually get absorbed in odd jobs** in the community through caregivers every year
6. **120 street clients** have been reunited with their respective families across Indian states

The team has worked relentlessly to enable clients' access to entitlements:

Entitlement	Frequency
Gratuity Relief Scheme Benefit	16
Aadhaar Card	40
Disability Card	7
Bank A/c	4
PAN card	9

Dedicated field work and advocacy enabled street clients' access to government hospitals for treatment which was earlier denied to them. Additionally, the organization was successful in getting a space within a police station to run a day care centre for them in 2009; this was a breakthrough since they were perceived as a threat by the guardians of law and order.

In the year 2017-18, 66% of the 137 total active enrolled clients who were recipients of direct service recorded an improvement in their overall levels of functionality as per their IDEAS (Indian Disability Evaluation and Assessment Scale) global score, a scale which measures the current status of the clients across 4 major domains: self-care, communication and understanding, interpersonal relationship & work.

Key Learnings - Evolving through experiences

The organization has never romanticized its maiden mental health care model or endorsed it as “the approach” to meeting health care needs of homeless persons with psychosocial disabilities for it was realized early on that the care model fell short in cases of extreme vulnerability- for homeless women battling psychosocial disability in particular, for persons with severe co-morbidities, physical health conditions and for persons addicted to hard drugs. These experiences compelled the organization to develop a multi-pronged approach to address the issue at hand. As a result of which, the birth of the following programmes took place to meet the individual needs of the clients-

Response of the organization to the needs of the target population

1. Naya Daur (2007): An outreach intervention wherein the team along with the community caregivers provide health and allied services to the urban adult homeless persons with psychosocial disabilities on the streets itself
2. Sarbari & Morudyan (2010, 2015): Special shelters for urban homeless women and men battling psychosocial disabilities respectively; providing a safe space for their recovery and rehabilitation; Thus, the maiden programme while continuing to serve the street clients also evolved as a crucial gateway of identification and referral of those in need of sheltered care for better clinical and social outcomes.
3. Day care centres (2009): There are two of them, one within the premises of Hastings Police Station and the other in the community. These centres offer therapeutic space for rest, focused activities and recreation for the target population.
4. Urban Mental Health Programme (2012): It is the mental health clinics run in 5 ward health units of the city in collaboration with the Municipal Corporation with the objective of integrating mental health care with general health care and to make the former accessible to underprivileged population
5. Reintegration: It mainly has three focus areas; Vocational training and supported employment, reuniting clients with their families and enabling their access to entitlements

6. Nayagram (2016): Assisted community living programme in Kashipur, South 24 parganas for those homeless women with psychosocial disability who have become much functional but for whom returning home is not an option. It is to build a home away from their home and enable them to (re)gain financial independence.
7. Crust & Core (2018): A training unit cum cafe to help the clients attain a sustainable source of income and respectable position in society.

The need for continuing the *Naya Daur* programme emerges from the understanding that the evidence generated before the eyes of the community is irrefutable and way greater than one which takes place within the confines of the shelter – that when the community witnesses changes in the ‘roadside mad,’ their belief in the possibility of change augments and stigma associated with homelessness and psychosocial disability reduce. Thus, in 2018, a decision was taken to expand the programme and apply a decade’s experience to 20 new wards in North-Central Kolkata.

One of the other great lessons learnt is that fact that ‘restoration of the family unit’ will not necessarily be the answer to a successful reintegration for there could be cases wherein the families may not get traced and even if they do get traced, the members wouldn’t be ready to take the client back into the family due to various reasons (financial constraints, misperceptions around mental illness...). There are cases where the client doesn’t wish to return to their families too. Thus, alternative living arrangements for recovered clients are being thought of; in some cases the community caregivers have offered spaces to dwell safely within the communities. In 2016, Assisted Community living programme was started by the organisation in Kashipur, a bucolic village in West Bengal to help female recovered clients start their life anew.

It is long realized that thrust has to be laid upon finding alternative solutions for the ailing and aging homeless persons with psychosocial disability since the option of engaging them in economically productive options in the community is ruled out and they would need constant care and support.

Plans to continue the Change (Building sustainable pathways of care)

- a. Community Caregivers: The programme aims to conduct capacity building sessions for community caregivers to gradually make them recognize the importance of their contribution, retain them and enable a more focused service delivery. It aims to make them models of inspiration to absorb many others from the community into the care network. By building and strengthening this social support system in the community for the target population, the foundation for its sustainability will be laid. Plan is to institute a 'caregivers' committee' as well which will stir the community work in the desired direction; exercising their responsibility towards fellow vulnerable citizens.

Currently, the focus is on also facilitating community awareness and training for effective participation of the community members in the programme. This is to widen the community care network: enlist their support as caregivers of the clients. It is expected that the community will continue to extend support to the programme through donation in cash and/ kind (food, clothes, materials for maintaining hygiene and the like) and also make referrals for treatment. Community ownership and stake in the programme will enable the programme to sustain financial support beyond current funding. The aim is thus to raise community resources to reduce direct programme costs.

- b. Involvement of State Bodies: In the long run, the aim is to tag almost all the clients to government hospitals and the ward health units of the government for physical and mental health care treatment. Iswar Sankalpa (under its Urban Mental Health Programme) is currently running five mental health clinics in partnership with the Kolkata Municipal Corporation (KMC) by integrating with primary health centres in wards 74, 82, 11, 54 and 26 of the city. By offering capacity building support and partnership with KMC, the organization wants to move mental health care from professionals to general medical practitioners with the aim to help them provide services at these wards. The health workers will use their skills to identify prospective clients and provide basic counselling support. Thus, gradually, the clients will be availing health services from these centres, creating a shift in the responsibility: the interventions by the organization will reduce, concurrently increasing those by the government. Eventually, as per the National Urban Health Mission, all the 144 wards of the city will have a mental health OPD. The community caregivers are being encouraged to help the street clients receive treatment from these facilities by accompanying them.

c. Developing as a Technical Resource and Decreasing Direct Service: The ultimate aim is to develop as a technical resource for other NGOs and state-run bodies to help them identify and address the needs of homeless persons with psychosocial disability. SOP (Standard Operating Procedure) of the organization's programmes have been prepared to be shared with relevant stakeholders to enable them to replicate the programme (if at all) in future. Thus, the onus would not lie with the organisation solely to address the problem at hand. It will be a collective effort towards addressing the same.

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[1] Psychiatric illness is interchangeably used with mental disorder/ mental illness – no difference (it is an umbrella term) Psychotic disorder are severe mental disorders

[2] Any change to a job, the work environment, or the way things are usually done that allows an individual with a disability to apply for a job, perform job functions, or enjoy equal access to benefits available to other individuals in the workplace.

About Iswar Sankalpa

Iswar Sankalpa is a non-profit organization started formally in 2007 with the hope of reaching out to the 'forgotten' and 'untouchable' population – the homeless persons with psychosocial disabilities on the streets of Kolkata. Today

we are a multi-pronged service delivery organization providing intervention for both the homeless and urban home-based poor population in Kolkata battling psychosocial disability.

Our work is rooted in the vision and mission: “To ensure dignity and holistic well- being of persons with psychosocial disabilities, particularly those from underprivileged sections of society, and to do so in a humane manner, in addition to empowering them in attaining their rights.”

We are a dynamic organization, upholding our clients’ Right to Life while working in conjunction with the community, government and other stakeholders. We undertake a complete journey with the clients: right from extending mental health care and allied services to enabling them to re-integrate into the society. We consciously refer to our target population as ‘clients’ even though there are numerous terms such as service users, beneficiaries etc. We choose to use the term ‘client’ because it connotes a partnership, a transaction wherein both are equally responsible.



Setting the Context

IV. Community Engagement

Community engagement broadly refers to civic engagement of the state on non-state actors like a civil society organisation, with a specific rural, urban, forest or pastoral community. The motivation for such engagement may arise to provide effective service delivery, welfare, entitlement including changing social norms and behaviour. Such engagements are typically about identifying specific contexts of the communities in terms of their cultural practices, existing perceptions and behaviours in which a welfare, service delivery, entitlement or a behaviour change programme is to be designed and delivered. Community engagement has broader social values in developing trust between the actors and communities, as well as ensuring the community's effective participation in the programme design itself.

Community engagement becomes extremely challenging when the motivation is towards behaviour change for a social development outcome. Individual and collective behaviour are deeply embedded in religious traditions, cultural and political beliefs. Numerous examples exist in the experiences of social sector organisations as well as the state to show that even apparently simple change of behaviour is not easy. To avoid Dengue, we are advised to not to allow water to clogged in flower tubs, AC machines, air coolers, open tanks, etc. For proper treatment and recycling of domestic waste, we are advised to segregate waste at home before handing it over to the municipal worker. We are asked to use toilets supplied to us by the government, for toilet use is known to improve the overall hygiene in urban settings where population density is very high. All these involve change of individual and collective behaviour from our current practices. State and non-state actors engage with communities to explain, advise, alert, warn, and also enforce such behaviour.

Changing social norms is also often considered an important goal of community engagements. Social norms about age of marriage for girls, girls' education, domestic work, masculine and feminine works, property rights of women, evil social practices like Dain or honour killing needs intense and prolonged engagements of the state and non-state actors to change for the better.

What does community engagement entail? Is it only about communications, messaging, individual and public conversations? Are there other strategies? What works in specific contexts? The two case studies presented here attempt to answer some of these questions. In the case of 'Supporting Men as Responsible Partners and Caring Fathers' community engagement involved creating 'Cause champions' through a group mechanism of young men and fathers who spearheaded the work of changing norms of domestic labour where husbands and fathers become equally responsible. Typically, dishwashing, sweeping, cooking, bathing children, cleaning toilets and many other duties are regarded as woman's job. To make men take responsibility of these would require a change of attitude toward these works and also attitude towards women and girls of the household. The case study shows that developing some men as champions of such change is an effective strategy for two reasons – advocates of change have already changed their own attitude and behaviour creating a moral force, and secondly, men who sacrificed the same privileges are stronger messengers than others.

In the other case study depicting changing community's attitude towards home toilets in urban slums, the strategy has been two-fold – involving the community in mapping the need, logistical planning to build trust and secondly involving the community to share costs thus developing stake and ownership of the toilets. In a slum, identifying individual households, their sizes, available spaces for toilets, water availability, piping, waste collection and transfer etc. are tricky for multiple reasons. Without the support the community, effective logistical planning of home toilets is impossible. While this is one challenge, the second challenge is how to convince the people of the efficacy of the toilets and thereby slowly change the community's attitude and behaviour. The case study describes how it has achieved both, thus changing the community's behaviour quite effectively.

There are lessons to be learnt from both cases in terms of imagining effective ways of community engagements beyond simple communications and messaging.

IV.A: Supporting Men as Responsible Partners and Caring Fathers

Centre for Health and Social Justice (CHSJ)

1. Context

Women and children in India face several vulnerabilities, many of which are rooted in the patriarchal nature of the family and the role of men within the household. While the state makes efforts to protect the rights of women and children, the importance of engaging with men is increasingly being recognized in addressing these inequalities. In a patriarchal society, men wield disproportionate power over the lives of women and children. Patriarchy also limits men's concern (or expression of concern) for their children and encourages various forms of disciplining, leading to control and punishment. The need, then, is to challenge patriarchy and to create new ways for men to express concern for their children through caring roles. The lack of care and the absence of opportunities faced by children, particularly girl children, is not just an issue of state accountability. The situation requires working with both the family and the community as units of intervention, and, more specifically, with fathers, so that fathers (in addition to mothers) become the first champions of, and activists for, child rights in the public domain. Critical reflection by men on their role within a paradigm of child rights and gender equality can initiate changes in social norms related to early marriage, dowry, and the status of women and girls. Men's close interactions with the community on these issues can help build larger and more meaningful discourses on child rights, women's rights, and health rights, and improve linkages with, and demand accountability from, public servants, office holders, and functionaries.

2. Theory of Change

The intervention, 'Enabling Men as Responsible Partners and Caring Fathers', was launched by the Centre for Health and Social Justice (CHSJ) in the state of Jharkhand in partnership with three local non-governmental organizations (NGOs). Its programme theory drew from CHSJ's earlier work with men in the states of Uttar Pradesh, Maharashtra, Madhya Pradesh, and Rajasthan, which was able to promote transformative change through a process of identifying and building capacity among 'role models' who then 'inspired' members of peer groups. Using the same approach, the project in Jharkhand worked through animators (potential role models) and groups of men and adolescent boys.

- The animator, receiving systemic capacity-building inputs from the project, becomes a role model for other group members by demonstrating changed practices in his own life and family, particularly with regard to breaking traditional, stereotypical gender-based roles that affect the position of women, girls, and boys in the family.
- The peer group provides a safe and supportive space for men as fathers to reflect on their power in the family and also serves as a platform for exercising peer accountability. This also helps men as fathers to see the difference in their desires and aspirations for their daughters and their desires and aspirations for their sons.
- Another group of adolescent boys is also mentored by the animator and by the fathers' group to adopt changes early on in their lives and to become caring males who are more committed to bringing about social change.
- Since these types of changes disrupt existing social norms, they need active support from, and participation by, the community to be effective. Public discussions and community campaigns are carried out under the project to raise community awareness and sensitization. Such discussions also help raise the project's main concerns and issues in key community institutions like the panchayat and in traditional religious places that perpetuate discriminatory norms. The fathers' and boys' groups are also involved in social accountability processes and in the monitoring of public services.
- The community processes propel advocacy to influence institutions, particularly education committees, parent-teacher associations, and school committees, to take up issues of gender-based discrimination and child rights violations in such institutions.

Current Reality

Men as fathers

- Non-involvement in child care, no participation in household chores
- No reproductive responsibilities
- Relationship of authority with children, control over mobility of family members, dominance in decision making in family
- Abuse and discrimination within household, esp. towards women and girls

Status of women in community

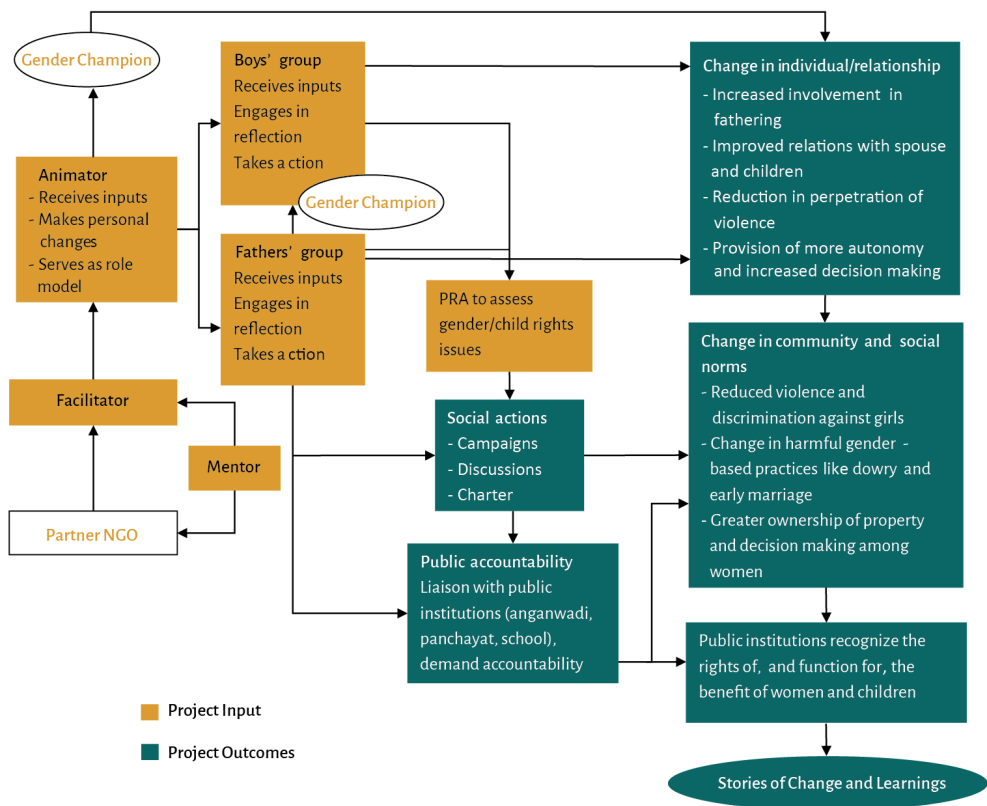
- Violence against women and girls
- Discrimination
- Heavy reproductive health burden and consequently high morbidity
- Lack of control in decision making
- Lack of economic rights and freedoms

Status of children

- Abuse and violence (of both boys and girls) from various quarters – parents, peers, intimate partners, friends
- Poor nutrition, esp. among girls
- Poor literacy, high dropout rates, esp. among girls
- Early marriage, esp. dire consequences for girls such as early pregnancy
- Lack of autonomy in decision making related to own lives, including marriage
- Child labour, child trafficking

Public institutions

Insufficient provision of services – AWC, school
 Limited participation of parents in school committees
 No recognition of child rights among PRIs



- The community processes hold all stakeholders accountable—ranging from the service providers to the implementers of the project.

3. Intervention Rationale

From September 2015 to August 2018, CHSJ worked in three districts of Jharkhand to promote new models for engaging men as responsible partners and caring fathers within a gender equality and child rights framework.

The men considered child care activities like bathing the child, cleaning the child after defecation, and feeding the child as women’s responsibility

A baseline study carried out by CHSJ in the project area comprising 30 villages located in the three districts of Ranchi, Bokaro, and Gumla (10 villages in each district) found that men in the role of the father were reluctant to acknowledge or admit their responsibility of taking care of their children, mainly due to the perceived need to maintain existing social norms. The men considered child care activities like bathing the child, cleaning the child after defecation, and feeding the child as women’s responsibility, while they saw their own responsibility as providing necessities like food, clothing, and meeting certain other needs of their children. The mother took the child to the doctor in case of illness, while the father or brother got the medicine. Children mostly shared their thoughts, feelings, and needs with the mother; some children also shared their thoughts with older siblings and with members of their peer group. It was mostly the mother who the children talked to if they did not feel safe. In cases where the children feared the mother, for instance, when there was a fight between the parents or if a parent was angry, the children looked for some other safe space or turned to a person they trusted for solace or comfort. It was not the father who listened to the children’s concerns or shared their feelings. In the project area, the burden of care work was heavy and fell largely on women and girls. At the time of project implementation, the National Family Health Survey 2015–16 (NFHS-4) data revealed that the proportion of rural households with access to improved drinking water ranged from 46.6 percent (Gumla) to 70.1 per cent (Bokaro); availability of improved sanitation facilities ranged from 11.6 per cent (Bokaro) to 17 per cent (Ranchi); and availability of clean fuel ranged from 4.1 per cent (Bokaro) to 12.1 per cent (Ranchi). Thus, the burden of care work was bound to be heavy in the project area.

The NFHS-4 data showed that the stunting of children under five years was in the range of 46 to 52 per cent in the three districts, being the highest in rural Ranchi and the lowest in rural Bokaro. As is true for the whole of India, male sterilization accounted for an insignificant proportion of the total modern forms of contraception in the rural parts of all three districts. Just 41 per cent of rural women aged 15–24 years said that they used hygienic methods of protection during menstruation. For Jharkhand as a whole, 38.8 per cent of rural women aged 15–49 years covered by NFHS-4 had ever experienced physical or sexual violence from an intimate partner (the figure for only physical violence was 27 per cent), which is higher than the all-India figure of 31.4 per cent. The perpetrator in 96 per cent of cases was the husband. Only 2.4 per cent of the women interviewed stated that they were violent against their husbands. Only 31 per cent of women and an equal percentage of men covered under NFHS-4 believed that it was all right for a man to hit a woman for one of the following reasons: if the woman goes out without telling him, if the woman argues with him, if she refuses to have sex with him, if she does not cook properly, if the man suspects the woman of being unfaithful, or if she is disrespectful towards the in-laws. The NFHS-4 data reported a balanced sex ratio at birth in rural Ranchi and Gumla, but the sex ratio at birth was skewed in favour of males (at 914) in rural Bokaro district. A practice not reported under NFHS-4 is the practice of witch-hunting in some Adivasi communities, wherein a widow or a single woman is labelled a witch by relatives or other people in the village usually to usurp her property and to drive her out of the village, and at times even to kill her.

On the whole, the data pointed to the secondary status of women and girls in rural Jharkhand, including in the three project districts. It also pointed to the anomaly that gender discrimination appeared higher in Bokaro district which has a smaller tribal population even though the day-to-day conditions for women seemed better.

The National Policy for Women, 2016 refers to the need for interventions to free women's time, and this was one of the focus areas of the project. The National Policy for Children, 2013 outlines the responsibilities of the state and of parents in ensuring the survival, development, protection, and participation of the child in all activities, free of gender discrimination. The National Early Childhood Care and Education (ECCE) Curriculum Framework states that workshops for parents are to be organized covering children's

health, their physical and emotional development, as well as behavioural issues. This project intended that members of the fathers' groups along with members of women's self-help groups (SHGs) set up under the National Rural Livelihoods Mission (NRLM) and the project's partner NGOs should play an important role in holding duty-bearers to account in the implementation of laws, policies, and schemes, and in the setting up of committees, for the well-being of women and children and for the removal of gender discrimination. The fathers' groups were also intended to come together to hold the perpetrators of violence and discrimination to account when the rights of women, girls, and children in general were violated. At another level, the aim was to have lessons from the project feed into policies that have little to say on the role of men as responsible partners and caring fathers while simultaneously working towards gender equality and the promotion of child rights.

4. Process Details

'Enabling Men as Responsible Partners and Caring Fathers' was developed as a pilot intervention for supporting men in undertaking domestic chores and care work and for assuming responsibility for furthering gender equality; it also sought to increase their awareness of child rights and responsible fatherhood. Its particular focus was addressing the men's relationships with their partners and their daughters through the framework of gender equality and child rights.

The project was rolled out with the support of the implementing partners, Chotanagpur Sanskritik Sangh in Gumla, Srijan Foundation in Ranchi, and Sahayogini in Bokaro. A project facilitator appointed by each implementing partner formed fathers' and adolescents' groups in every project village and selected an 'animator' or peer leader from among the more interested fathers in every group.

The animators and facilitators together went through intensive and participatory capacity-building and perspective-building training organized by CHSJ in collaboration with the implementing organizations. The training comprised seven workshops spread over 25 days, covering the project's objectives and features, such as the concepts of patriarchy, gender, masculinity, child rights, and care giving from the perspectives of gender equality, child rights, reproductive rights, and social accountability in the areas of health and nutrition, leadership, facilitation, and participatory rural appraisal.

Regular sessions were then held for fathers' groups and adolescent boys' groups on similar topics. The partners of animators, parents of adolescent boys, service providers, and local government representatives were the indirect stakeholders. Early in the programme, a social mapping and participatory rural appraisal exercise was carried out to prioritize the needs, concerns, and interests in every village. A year or so into the programme, the three implementing organizations started conducting community campaigns on International Women's Day and on 16 Days of Activism Against Gender-based Violence to create awareness and increase sensitization.

The project included 'mentors', who were outside experts meant to guide the facilitators and animators, and 'observers', who were selected from within the project village but who were not part of the groups and whose job it was to record changes and to point out the desired changes that were not taking place.

4.1. Monitoring and Information System (MIS):

With a view to monitoring the project's processes, MIS reports were used by the project team to capture progress, outputs, and outcomes during the project period. There was provision for recording stories of change at the level of animators, fathers, and adolescents, and the information gathered through this system was used to document and record stories of change both in writing and through videos. There was also a mechanism for recording through stories the collective responsibility assumed by the fathers' or adolescent boys' groups in regard to gender equality, like preventing early marriage, combating domestic violence, and re-enrolling children who had dropped out of school. The baseline and endline surveys conducted by the project captured quantitatively the changes in gender relations and the changes in men's participation in household chores and in child care, as well as their attitudes towards gender, masculinity, violence, and child rights.

There was also a mechanism for recording through stories the collective responsibility assumed by the fathers' or adolescent boys' groups in regard to gender equality

5. Project Outcomes

With the three-year project coming to an end, an evaluation was commissioned by CHSJ, which was carried out by an independent feminist researcher, Ranjani K. Murthy. Looking at the project's outcomes at the individual, community, and other levels, Murthy examined the project from the perspective of different stakeholders as follows:

5.1. Changes at the Individual and Family Levels

5.1.1. Changes in animators

The most significant change reported by animators during the group exercises that were carried out as part of the evaluation process was their increased participation in domestic work (cooking, cleaning vessels, sweeping, cleaning toilets), followed by child care (bathing children and getting them ready for school). Several animators stated that in the past they were afraid of doing such work in public, as other men would tease them, saying 'You are being henpecked.' A few animators reported making greater or equal investment in the education of daughters as compared to sons, ensuring that their children were immunized, taking care of their partners' health and happiness, curbing excessive drinking, and controlling their anger and tendency towards violence as the most significant changes. One animator said, "Earlier I used to get angry and beat my partner and children. Now I do not." Another said, "I was opposed to my partner working. Now she works as an SHG facilitator and record keeper." He helps her with account keeping.

Of the six spouses of animators who were interviewed, a partner who had completed her graduation described her husband as follows:

The best husband, who engages in care work (including cleaning my own clothes and the clothes of our six-month-old daughter when she defecates), was by my side during delivery, does not get angry, occasionally drinks but does not get drunk, gave me a cloth absorbent sanitary pad to use, decides jointly on contraceptive spacing, does not force himself on me sexually when I am tired, allows me to keep the jewellery that my parents gave [me], and visits them with me whenever I want, transfers money into my bank account (and does not ask for accounting), and encourages me to get back to work as soon as my child is older. When we go to my parents' house, he does

housework there too. Sometimes I get up after him with my child and he goes to work without disturbing me. I give him four on four marks on each corner of the star: care work, supporting my mobility, independent bank account, reproductive health and my rights, and controlling his anger.

Two other partners of animators who were interviewed had been married before the programme began and hence could better share ‘before’ and ‘after’ accounts pointing to differences in the behaviour and attitude of the husband: husbands helped more than before with child care (two), husbands did household work in public (one), husbands cleaned toilets now (one), husbands helped themselves to food instead of expecting to be served (one), husbands took them out more often, including to the partner’s natal home (two), husbands watched movies together with the partner on the mobile phone (one), husbands were less angry than before (two), husbands now give them more money for running the household (one), husbands have now adopted methods for child spacing (one by animator, one by partner), husbands did not force themselves on the partner (one), and husbands came along with the partner to take their child for immunization (one).

5.1.2. Taking control of her body: The story of the partner of an animator

Through a body-mapping exercise, the high school-educated partner of an animator from Gumla district said that she could now go out without the permission of the animator (her husband) while earlier they used to argue about it. She feels she has control over her feet. She is the president of her group, but used to seek her husband’s help in maintaining records. Hence, she feels that she had only partial control over her hands and would like to learn how to manage accounts. She said that she takes decisions regarding reproduction and contraception (and hence has control over her womb). Her husband wanted to stop having children after the birth of three girls, but she wanted a boy. Now that she has delivered a boy, she takes oral pills. It was a joint decision. She was scared that her husband would become weak if he underwent a vasectomy. With regard to food, she stated that they share food that was available while giving priority to feeding their children. Earlier, her husband used to beat her if food ran short, but does not do so now. Indeed, after joining the group he has stopped beating her altogether, as well as stopped forcing her to have sexual relations when she is tired or when there is no privacy. On the whole, she feels she has control over her body now. She

said that her husband washes his clothes now as well as the clothes of the children, but she did not allow him to wash her clothes as her mother-in-law did not like it. Her husband sometimes cleans the children after they defecate and go to the toilet. She feels that her body gets rest sometimes. Recently, her husband's sister came to her natal house for a safe abortion, which the animator (her husband) had arranged through a doctor. She said that in their group as well they talk about women's equality. At times they argue, but after each argument her husband would win her over by feeding her.

5.1.3. Changes in fathers

For most fathers, membership in fathers' groups was the first time that they had come together as a group of men to change themselves in respect of gender issues and child rights

For most fathers, membership in fathers' groups was the first time that they had come together as a group of men to change themselves in respect of gender issues and child rights, though a few fathers were members of Panchayati Raj Institutions (PRIs) or statutory committees where some gender issues were discussed. The most significant change mentioned by fathers was helping with housework (fetching water, cooking, sweeping, buying vegetables, washing clothes, and cleaning toilets, in that order) and getting children ready for school (giving them a bath, dressing them, ensuring that they ate breakfast, dropping them to school). Only a few fathers admitted to routinely engaging in housework or child care activities, and sharing the load equally with their partners, which matches the findings of the baseline and endline surveys. The next important shift in behaviour mentioned by fathers was taking children for immunization, which they said they did not do before. A father from Bokaro who broke traditional gender norms in regard to the raising of sons and daughters said, "I have now accepted that my son wants to pursue music and my daughter wants to pursue medicine." A father from Bokaro admitted to getting drunk and hitting his wife and son (the latter with a belt) earlier, and having stopped doing this now. A member of a fathers' group living with disability, who was a contractor for executing construction work and who had entered into a marriage of choice before the fathers' group was formed, observed, "I am now open to shifting my base if my wife who is pursuing her PhD in English gets a job in Ranchi. She likes to wear salwar-kameez and it is her choice."

A son from Bokaro, also a member of an adolescent group, said, “My father is better behaved, but has not stopped hitting me or my mother. But he has stopped using the belt [to hit us].” The spouse of a member of a fathers’ group from Gumla admitted that her husband now “supports her [decision] to work outside and [has] dropped her to work and picked her up to bring her back.” A daughter from Gumla observed that she felt more loved by her father now than she did before, and that he was proud of her playing football.

5.1.4. A father who stood for justice for his daughter

I have been a member of the fathers’ group in my village, in Ranchi district, from the beginning. A little over a year ago, my minor daughter (studying in the seventh class) was raped by three people from the same village. It was 12.30 in the night and she had not returned from the celebrations of a wedding. There was dancing, and she stayed back while I returned home with my wife and other younger daughter. My older daughter told me that she would return with her friends. She came in a daze, weak and crying. My wife started scolding her for coming late, but I realized that something was amiss and gave her a cup of tea. She was and is my pet. I went to file an FIR [First Information Report] in the police station after informing a few ward members. The sarpanch was not supportive. The police inspector refused to file an FIR. I had studied only till the fourth class, but used to read the newspaper regularly. I recognized the phone number of the superintendent of police and called him. He was supportive, but told me that once I filed the FIR, there was no going back as the case came under the POCSO Act [the Protection of Children from Sexual Offences Act, 2012]. That night I did not sleep. By the time the superintendent of police came and we finished filing an FIR under the POCSO [Act], it was 6.30 a.m. We took my daughter for a medical checkup. There was pressure from all sides, including some of the fathers’ group members who were related to the perpetrators, to compromise (in terms of money and marriage). Me and my wife (who is a member of a women’s group) did not want to compromise. We encouraged our daughter to memorize what she had told us and the police, and not to change the narrative if she was grilled. The three perpetrators were put behind bars. And a month back (after a year), the verdict came in favour of my daughter. Now we hold our heads high, and my daughter is now in the eighth class in the same school opposite my house. I would have done the same even if I was not in the fathers’ group, but I may not have succeeded as I did not know how to talk. I would not have had the support of the facilitator

and the lawyer associated with the project's implementing NGO. Even if the perpetrator was one man, I would not have got my daughter married to him. It will not be justice to him and there will be more such crimes.

5.1.5. Changes in adolescents

A majority of members of adolescent boys' groups stated that they had started helping with housework only after joining the group. The next area of change (mentioned by 25 per cent or less of the adolescent boys' group members) was that they had stopped hitting younger siblings and helped them with their studies, had become less controlling of their sisters, and ensured that their other brothers did the same. In Ranchi and Gumla, boys observed that girls now came and played in the maidan (open ground). Around 10–20 per cent of group members admitted to teasing girls before and claimed that they had stopped doing this now. When asked, members of one group observed that food at home was now distributed equally among all family members, especially in homes where both adolescents and fathers were part of the programme (around 20 percent of participant households).

The parents and the older sister of a member of an adolescent boys' group in Ranchi district said:

Our son/brother used to be out of the house all the time. He was hardly at home, leave alone helping with housework. We were worried as to what he was doing. He used to get angry and throw things and at times talked disrespectfully. He did not know how to talk to elders. Now all that has changed. Further, if he catches any boys whistling at girls, he stops them and tells them not to [do so]. Whatever he may miss, we encourage him not to miss the meetings of the adolescent boys' group.

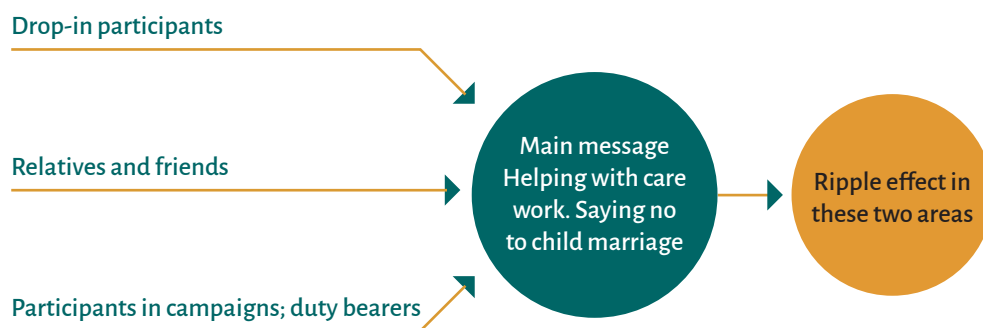
The parents and relatives of six members of adolescents' groups observed that the boys now studied, helped with housework, and listened to and respected adults more than they did before. One relative said that an adolescents' group member had dropped out of school before joining the group because the teacher had publicly shamed him for getting into a fight. The adolescents' group and a member of the fathers' group who was part of the school management committee helped him and another boy who was not in the group to resume their education (although this was in another school).

Similarly, a widow in Ranchi district said she was happy that her son (a member of an adolescent boys' group) now helped her in washing clothes, which reduced her work burden. She felt that her son had friends of better character after joining the group. The parents of an adolescents' group member in Gumla district observed that this son was different from their other two sons; he helped with housework, 'looked after' his sister, and resolved disputes in the family. A member of an adolescent boys' group in Bokaro extended support to his father when the father made a will giving him and his only sister equal shares in the family property. This happened before he joined the group, and he understood the implications of his actions and came to appreciate them after joining the group.

School teachers and members of school management committees also commented on the positive changes seen in members of adolescent boys' groups. The principal of a middle school in Bokaro observed that three children in her school were members of an adolescent boys' group; two of the boys had graduated. The children were more confident, more respectful, and cleaner in their personal appearance. None of them engaged in 'eve teasing', which was not true of the other students in her school.

5.1.6. Changes in non-participants

The several pathways through which information on the 'caring fathers and responsible partners' initiative reaches non-members are listed in the figure below:



Drop-in participants are those who come when they can to the meetings of the fathers' group and adolescents' group, as noted during the evaluation meeting. According to one of the two mentors interviewed, non-members

always come when the fathers' group meeting or the adolescents' group meeting is held. Drop-in participants and some male relatives (brother, brother-in-law, for example) of members of a fathers' group started 'helping' with housework and care work, in particular, fetching water, cooking, and dropping children to school. However, a few drop-in participants stated that non-participants cleaned toilets, cleaned children after defecation, or publicly washed clothes or utensils. An animator's partner observed, "My husband counsels his brother who drinks heavily. Now he has reduced [his alcohol consumption], and gives money for household expenses." The non-members of groups that took part in campaigns who were interviewed said that they understood the consequences of child marriage (Ranchi and Bokaro), had become aware that they were equal to boys (a girl from Gumla took part in a cycle rally) and that men can make chapattis too (women's SHG member in Bokaro).

Duty-bearers and office holders who are not members of these groups are also being sensitized on gender equality. For example, a sarpanch was earlier a strong proponent of getting a rape survivor and the perpetrator married. After sensitization by the animator and the facilitator, and by the father of the survivor himself, the sarpanch started slowly supporting the survivor. Anganwadi workers (ANWs) and auxiliary nurse midwives (ANMs) who were interviewed during the evaluation process were aware of the project and said that now more men bring their children for immunization. In Ranchi, a gram sabha meeting that was meant to be devoted to gender equality was used by the project to spread the message about the importance of immunization for children.

Discussions with stakeholders show that child marriage has, more or less, stopped in the villages that were evaluated, and that men are 'helping' with housework more than before

On the whole, two messages have been communicated successfully to non-members—the importance of 'helping' with domestic work and care work and the undesirability of child marriage. Discussions with stakeholders show that child marriage has, more or less, stopped in the villages that were evaluated, and that men are 'helping' with housework more than before (although their participation is far from equal).

The private is public: Action of a fathers' group on domestic violence

I am a member of a fathers' group in Bokaro district. Before we became active, there was commotion [in the neighbourhood] from the late evening onwards. Loud arguments by both [men and women] and violence, usually by husbands against wives. It was difficult to come out [of the house]. Originally, we thought this was a private matter, but through the fathers' groups we came to know that domestic violence is a public issue. We started intervening, taking the support of a few non-members who were respected. To bring about harmony, we share with men in our neighbourhood particularly some of the insights we have gained from the fathers' group on patriarchy, anger management, and care. Now there is more peace in our street than before, though we cannot claim 100 per cent success.

Observations of a teacher in Ranchi

Our school is a private high school. Girls and boys come to study. We have always had complaints from the high school girls that boys from their classes and seniors pass lewd remarks or whistle [at them] and follow them. After the animator and the facilitator of the NGO from Ranchi took three sessions on masculinity and gender equality, such incidents have come down. As new students come every year, we want to continue the process.

Murthy synthesized the findings using the following evaluation frameworks.

1. Masculinities

The narratives of animators, fathers, partners, adolescent boys, and their relatives reveal that the project in a short span of three years has helped the members of fathers' groups and adolescent boys' groups to move away from 'violent masculinities' to a considerable extent. Further, in their own lives, they have started doing more work that is traditionally considered 'feminine' and now more openly express emotions towards their partner and their children. These shifts in behaviour and attitude are more marked among the younger fathers, the more educated fathers, and the fathers living in free choice (or 'love') marriages. These shifts have led to the increased well-being of children and women, and to greater decision-making powers of women regarding children (and to a lesser extent, in terms of reproductive

and sexual matters). Changes have taken place more in the private space of families, and less in the public space of the economy and politics.

2. Synthesis using the empowerment framework

The power exercised by animators, other fathers, and members of adolescents' groups over partners, sons, and sisters has reduced, though, as they themselves admit, power is yet to be equally shared. This is reflected in a decline in violence against partners, children/sons, an increase in joint decision making with partners, the near absence of child marriage, and the granting of more freedom to daughters than before. Sisters, by and large, are less controlled by brothers in adolescents' groups. In terms of men's power to improve the well-being and lives of partners, daughters, and sisters, they have reduced the workload of women by helping with care work, which, according to partners, has given them time to rest and relax (the majority), to go to the market (a few), and to start home gardens (a few). Some animators and fathers have encouraged partners who are not members of women's groups to join these groups and to gain access to social capital, whereas earlier they were opposed to this idea. Animators, members of fathers' groups, and partners report joint decision making on reproduction (how many children to have), though son preference continues to persist. However, the burden of permanent contraception falls mainly on women (only one father had undergone a vasectomy). Partners of animators alone were asked whether they were given space to refuse sexual relations with their husbands, and a majority said yes (this was true for the majority of partners from the time of their marriage; this was true for a few partners after the project was implemented).

At the community level, collective action was seen to prevent physical violence by husbands (successful in 50 per cent cases), to discourage child marriage (successful in the majority of cases), and to prevent children from dropping out of school. Collective action was also successfully undertaken to improve access to water (self-help), and to seek justice in the case of rape (partly successful). However, taking collective action was problematic when perpetrators and survivors belonged to fathers' groups / adolescents' groups. With regard to the exercise of 'power within' (deep-rooted attitudes), animators, by and large, had more progressive attitudes (but not necessarily in terms of taking action in the event of rape), followed by adolescents' groups and then fathers' group (and also women's SHGs).

3. Synthesis using social relations and institutions

The intervention has helped change the relations of members of fathers' and adolescents' groups with their partners and with sisters in the families of animators, fathers, and adolescent boys involved in the programme. Ripples of effect can also be seen in the larger households. However, the relations are not as yet equal, and this is more evident among fathers. Words like 'help', 'allow', and 'permission' were used, and words like 'share', 'freedom', and 'choice' were used less frequently. Issues of reproductive and sexual equality were articulated when the respondents were prompted, and this discussion took place mainly among the animators. These changes need more time to take root, and it would be unrealistic to expect a major transformation in attitude and behaviour to take place in just three years. What does seem to have become norms are women's participation in SHGs, increased acceptance of girls' education, and the ending of child marriage. Nevertheless, these norms are influenced by other factors too, like the government's National Rural Livelihoods Mission (NRHM), the Beti Bachao Beti Padhao (Save Daughters, Educate Daughters) campaign, and the partner NGO's intervention. It was seen that the message of the man as a responsible partner and caring father reached a larger audience when PRI members, teachers, and school management committee members were part of the fathers' groups.

With regard to influencing the state machinery to accept the concept of responsible and caring fathers and parents, the fathers' groups are slowly beginning to use the state machinery to prevent child marriage and to hold perpetrators of rape to account. They are bringing these issues into the debates with service providers, as well as PRIs, although not to the extent of holding the state to account. An important barrier in influencing the state machinery to encourage the notion of responsible fatherhood and caring parents is that, as per government regulations, only 'mother' committees and 'kishori' (young unmarried girls / women) committees are to be formed by Integrated Child Development Services (ICDS) centres; this requirement excludes fathers as parents and adolescent boys as actors in giving space to their adolescent daughters and sisters respectively.

4. Comparison of Baseline and end line Metrics

A baseline survey was carried out by CHSJ in 2016 with 291 participants across the three intervention areas. The survey tool captured information around the following domains: social and demographic profile of men, men's attitudes towards gender and child rights, men's participation in household chores and child care, and perpetration of violence. For the endline survey, a survey tool was developed based on the baseline questionnaire in order to allow comparison. The endline survey was carried out in May–June 2018. The final sample consisted of 339 men who were randomly selected from among members of fathers' groups in the 30 intervention villages.

Regarding the social and demographic profile, the respondents were between the ages of 19 and 62 years, with most being in the age group of 20–25 years. In Gumla, the group members were much younger compared to the group members in the other two districts. The majority of the respondents in Gumla and Ranchi belonged to the Scheduled Tribes and followed the customs of Sarna Adivasi Dharma (tribal religious beliefs); in Bokaro, they belonged to the Other Backward Classes and followed Hinduism, followed by the Scheduled Tribes and Scheduled Castes.

A comparison of the quantitative surveys carried out by CHSJ indicates the following changes having taken place in men's attitudes to gender and their behaviours with respect to their wives and children in the project area.

5. Gender relations and division of labour in the household

The project sought to strategically change the rigid gendered roles and responsibilities that existed at the beginning of the intervention. In the baseline survey, it was very clear that daily household chores were considered the duty of women, and men seldom contributed. Even if men did household chores, they would do these tasks only for themselves, like washing their own clothes or cleaning the plate they had used.

Table 1: Proportion of men not contributing to household chores

Responsibilities	Baseline				Endline			
	Bokaro (%) (N=90)	Gumla (%) (N=106)	Ranchi (%) (N=95)	Total (%) (N=291)	Bokaro (%) (N=117)	Gumla (%) (N=113)	Ranchi (%) (N=109)	Total (%) (339)
Wash clothes of family members	69 (76.7)	91 (85.9)	85 (89.4)	245 (84.2)	20 (17.1)	23 (20.4)	18 (16.5)	61 (18)
Clean house/courtyard	83 (92.2)	100 (94.3)	88 (92.6)	271 (93.1)	22 (18.8)	15 (13.3)	11 (10.1)	48 (14.2)
Prepare food	84 (93.3)	98 (92.5)	86 (90.5)	268 (92.1)	24 (20.5)	8 (7.1)	10 (9.2)	42 (12.4)
Serve meal	87 (96.6)	94 (88.7)	88 (92.6)	269 (92.4)	38 (32.8)	33 (29.2)	16 (14.7)	87 (25.7)
Wash utensils	89 (98.9)	100 (94.3)	90 (94.7)	279 (95.9)	53 (45.3)	23 (20.4)	18 (16.5)	94 (27.7)
Fetch water	66 (73.3)	90 (94.9)	48 (50.5)	204 (70)	21 (17.9)	10 (8.8)	7 (6.4)	38 (11.2)

The baseline data clearly indicates low levels of participation by men in chores like cleaning the house, washing the clothes of the family, cooking and serving meals, washing utensils, and fetching water, as a huge number of men did not contribute to any such activities at the beginning. The endline findings (Table 1) show that the proportion of men who did contribute at all had considerably shrunk. Of those who mentioned doing any or all of the chores, it is important to note that every man contributed to domestic work in different capacities; some men did it 'sometimes', some did it 'most of the times', and some did it 'always'. Although a large proportion of men started contributing to household chores by doing all tasks, not all did so on a regular basis.

Out of the many chores (Table 2), fetching water seemed to be the most commonly performed chore across the three districts. Fathers' group members in Ranchi and Gumla contributed more to household work than

those in Bokaro. This finding was consistent with the baseline findings too, where it was seen that tribal populations in Ranchi and Gumla saw it as being more acceptable for a man to do household work than by respondents belonging to other castes in Bokaro.

Table 2: Proportion of men contributing to household chores

Responsibilities	Endline							
	Bokaro (%) (N=117)		Gumla (%) (N=113)		Ranchi (%) (N=109)		Total (%) (339)	
	Do the chores	Do most of the times or always	Do the chores	Do most of the times or always	Do the chores	Do most of the times or always	Do the chores	Do most of the times or always
Wash clothes of family members	97 (82.9)	28 (23.9)	90 (79.6)	38 (33.6)	91 (83.5)	29 (26.6)	278 (82)	95 (28)
Clean house/ courtyard	95 (81.2)	32 (27.4)	98 (86.7)	44 (38.9)	98 (89.9)	39 (35.8)	291 (85.8)	115 (33.9)
Prepare food	93 (79.5)	28 (23.9)	105 (92.9)	39 (34.5)	99 (90.8)	42 (38.5)	297 (87.6)	109 (32.2)
Serve meal	79 (67.5)	23 (19.8)	80 (70.8)	31 (27.4)	93 (85.3)	24 (22)	252 (74.3)	78 (23.1)
Wash utensils	64 (54.7)	15 (12.8)	90 (79.6)	33 (29.2)	91 (83.5)	25 (22.7)	245 (72.3)	73 (21.5)
Fetch water	96 (82.1)	53 (45.3)	103 (91.2)	65 (57.5)	102 (93.6)	76 (69.7)	301 (88.8)	194 (57.2)

Overall, the data also indicated that group members moved from taking no responsibility for household chores to bearing a secondary responsibility. However, the onus of the final/ primary responsibility of the work still lies with the woman.

6. Decision making by women

The overall decision making by women regarding various matters was very low in the baseline. Women had maximum say in decisions related to the household and those related to children. In comparison, women's participation in decision making as reported by men increased in regard to all aspects (Table 3), though it is much less in Bokaro as compared to the other two districts.

Table 3: Involvement of women in decision making at home on their own or jointly with elders/male family members

Routine decisions	Baseline			Endline		
	Bokaro (%) (N=90)	Gumla (%) (N=106)	Ranchi (%) (N=95)	Bokaro (%) (N=110)	Gumla (%) (N=106)	Ranchi (%) (N=101)
Spending money on food	19(21.2)	13(12.3)	24(25.3)	83(71.6)	85(75.2)	91(83.5)
Spending money on clothing	22(24.4)	24(22.6)	34(35.8)	80(69.9)	94(83.2)	88(80.7)
To buy mobile phone*	19(21.2)	14(13.2)	19(20)	63(57.3)	80(72.7)	74(69.8)
Agriculture-related decisions	21(23.3)	23(21.7)	12(12.6)	57(50.9)	90(81.1)	67(61.5)
Major household decisions						
To buy major assets like TV, motorcycle, etc.*	24(26.7)	24(22.6)	44(41.2)	75(78.1)	80(83.3)	79(78.1)
To take a loan	29(32.2)	26(24.5)	50(52.6)	79(79.8)	66(83.5)	80(87)
Decision to manage incomes						
Husband's income*	38(42.2)	29(27.4)	37(38.9)	71(62.3)	70(65.4)	60(58.3)
Wife's income*	19(21.2)	37(26.4)	28(38.9)	44(77.2)	51(83.6)	67(93.1)

Routine decisions	Baseline			Endline		
	Bokaro (%) (N=90)	Gumla (%) (N=106)	Ranchi (%) (N=95)	Bokaro (%) (N=110)	Gumla (%) (N=106)	Ranchi (%) (N=101)
Decisions related to children						
Whether children should go to school or not	54(60)	65(61.3)	70(73.7)	83(83)	93(91.2)	88(91.7)
Deciding number of children to have	53(58.8)	93(87.7)	86(90.5)	99(90)	104(98.1)	94(93)
*N is different						

Men’s involvement in child care and maternal care

Child care and maternal care are always seen as ‘women’s concerns’ and this was reflected in the baseline study of this project as well. Mothers, aunts, grandmothers, elder sisters (children), and other female family members were involved in all aspects of pregnancy and child care. The fathers belonging only to the Oraon and Santhal tribes looked after their children when the mother was not available or was busy doing other work; some of these Oraon and Santhal fathers fed the children and washed the clothes of their children. However, the mother was the primary caregiver. Following several rounds of discussion and debate, men slowly realized the importance of their role as equal partners in parenting, where their participation would lead to the better development of their children and to improved relations between them. The stories of change revealed this shift in attitude and behaviour, showing that many fathers had started spending more time with their children. The quantitative data also reflects a significant change in men’s participation in activities related to pregnancy and child care.

7. Care during pregnancy

Table 4: Respondents' involvement in pregnancy care

	Baseline				Endline			
	Bokaro (%) (N=19)	Gumla (%) (N=36)	Ranchi (%) (N=15)	Total (%) (N=70)	Bokaro (%) (N=20)	Gumla (%) (N=29)	Ranchi (%) (N=12)	Total (%) (N=61)
Good participation >80% score	0	4 (11.1)	0	4 (5.7)	2 (10)	5 (17.2)	1 (8.3)	8 (13.1)
Satisfactory participation 50–80% score	2 (10.5)	9 (25)	1 (6.7)	12 (17.1)	8 (40)	9 (31)	4 (33.3)	21 (34.4)
Unsatisfactory participation <50% score	17 (89.5)	23 (63.9)	14 (93.3)	54 (77.1)	10 (50)	15 (51.7)	7 (58.3)	32 (52.5)

**Total score=7. Pregnancy care includes – accompanying the wife for at least one antenatal checkup (ANC), getting supplementary nutrition for her, discussing arrangements for the delivery, taking care of the wife and making sure she gets some rest, taking care of household chores during pregnancy so that the wife can rest.*

Table 4 provides a comparison of the baseline and endline survey findings regarding the men's participation in pregnancy care. During pregnancy, all men except some in Gumla had accompanied the wife at least once on a visit to a clinic for antenatal care. Men also started fetching supplementary nutrition from the anganwadi centres (AWCs) and also from outside. There was also a significant increase in men taking up the work otherwise done by the wife, so that she could get some rest during pregnancy.

In Bokaro and Ranchi districts, it was common for men to accompany the wife for delivery (to a government hospital). The proportion of men who do this is now around 90 per cent across the districts. There is an increase in the percentage in Gumla district as well.

10. Caring for children

The needs of children in various age groups are different; acknowledging this fact, the intervention aimed to ensure that fathers are involved in the caring and rearing of their children as per their different and specific needs. The data overall showed that some fathers took their child care responsibilities seriously and were performing some child care tasks.

Table 5: Respondents' involvement in child care

	Baseline				Endline			
	Children below 2 years (score=14)							
	Bokaro - 19	Gumla -36	Ranchi -15	Total - 70	Bokaro - 20	Gumla -29	Ranchi -12	Total -61
>80% score (>11.2)	0	0	0	0	4(20)	2(6.9)	1(8.3)	7(11.5)
50-80% (7-11.2)	4(21.1)	17(47)	3(20)	24(34.3)	8(40)	15(51.7)	7(58.3)	30(49.2)
<50% (<7)	15(78.9)	19(52.8)	12(80)	46(65.7)	8(40)	12(41.4)	4(33.3)	24(39.3)
	Children between 2 and 6 years (score=13)							
	Bokaro - 36	Gumla -75	Ranchi -57	Total - 168	Bokaro - 49	Gumla -63	Ranchi -53	Total -165
>80% score (>10.4)	0	0	1(1.8)	1(.6)	6(12.3)	11(17.5)	12(22.6)	29(17.6)
50-80% (6.5-10.4)	2(5.6)	22(29.3)	4(7)	28(16.7)	16(32.7)	23(36.5)	10(18.9)	49(26.7)
<50% (<6.5)	34(94.4)	53(70.7)	52(91.2)	139 (82.7)	27(55.1)	29(46)	31(58.5)	87(52.7)

	Baseline				Endline			
	Children between 7 and 12 years (score=11)							
	Bokaro - 42	Gumla -52	Ranchi -52	Total -146	Bokaro - 49	Gumla -63	Ranchi -53	Total -165
>80% score (>8.8)	1(2.4)	3(5.8)	0	4(2.7)	17(34.7)	23(36.5)	8(15.1)	48(29.1)
50–80% (5.5–8.8)	5(11.9)	11(21.2)	3(5.8)	19(13)	13(26.5)	35(55.6)	14(26.4)	62(37.6)
<50% (<5.5)	36(85.7)	38(73.1)	49(94.2)	123 (84.2)	19(38.8)	59(7.9)	31(58.5)	55(33.3)

10.1. Caring for children below two years

Regarding the care of children below the age of two years, the father's involvement in all child care tasks increased, but the frequency of engaging in these activities was still very low. Fathers were more involved in activities that require some degree of mobility outside the house and when the child was unwell, whereas fathers did not perform, or did not prefer, activities that were required to be done more regularly (bathing the baby, feeding the baby, cleaning the baby after soiling, washing the baby's clothes). The belief that very small children cannot be handled by men is deep rooted and persistent. Child care activities and their frequency differed across the districts. For instance, in Bokaro and Ranchi, a large proportion, around 90 per cent, of fathers accompanied their children to health care centres for immunization, but in Gumla the corresponding figure was only 69 per cent. Activities like bathing the baby, feeding milk to the baby, washing the baby's clothes, and cleaning the baby after soiling were almost negligible at the time of the baseline, and remained low across the districts at the time of the endline, with less than 30 percent of fathers choosing to do these tasks. Taking the baby for a stroll or to a doctor was high during the baseline and increased further by the endline. More fathers were also spending time with the baby and playing with the child.

10.2. Caring for children between two and six years

Once children are two years old, they are more independent, though still dependent on the primary caregiver for most of their activities; the fathers of children between two and six years realized the importance of their parenting roles and actively participated in some parenting tasks. As mentioned earlier, men find themselves more suited to taking care of children once they begin walking. This was also evident from the data which showed that the fathers of children below two years were not engaging in activities like feeding, bathing, or cleaning the child after soiling. However, these tasks were being done by some fathers with children in the older age group. Even though many fathers started contributing by assuming these responsibilities, the activities were still not being done 'often'. Among all the activities, fathers participated often when the child was in some distress or was sick and needed to be taken for treatment.

10.3. Caring for children between 6 and 12 years

The involvement of fathers with older children in the age group of 6–12 years increased in the period between the baseline and the endline. As seen in the case of the other age groups, the father's participation was the highest when the child was ill. Other aspects of child care like cooking for children, taking care of children's needs related to school like getting them ready in the morning, helping the children with their studies, discussing issues faced by children at school or with their friends also showed improved participation by the father.

The overall attitude of men with regard to child care and their relationship with their children was positive. Men made efforts to spend more time with their children, not just to fulfil their basic needs but also leisure time, which is essential for creating and sustaining the father–child bond. The majority, around 80 per cent in Bokaro and Ranchi and 87 per cent in Gumla, claimed in the endline survey that they now spend more time with their children.

Table 6: Time spent by fathers with children after joining the project

	Endline		
	Bokaro (%) (N=103)	Gumla (%) (N=104)	Ranchi (%) (N=100)
More than before	78(75.7)	90(86.5)	82(82)
Less than before	3(2.9)	5(4.8)	3(3)
As much as before	20(19.4)	8(7.7)	12(12)

11. Attitudes towards gender, parenting, child rights, masculinity, and violence

The section on attitudes in the endline survey comprised 36 questions on various domains like gender roles, parenting and child care, children's autonomy, masculinity, sexuality, and violence. To calculate the composite score, every progressive answer was given a score of 1. After adding the scores, the final scores were divided into three categories: 'traditional', where the score was less than 60 percent of the total; 'moderate', where the score was between 60 and 85 per cent; and 'equitable', where the score was more than 85 per cent. Table 7 shows the composite scores.

Table 7: Attitudes of male respondents (score of progressive response)

	Bokaro (%)		Gumla (%)		Ranchi (%)		Total (%)	
	Base (N=90)	End (N=117)	Base (N=106)	End (N=113)	Base (N=95)	End (N=109)	Base (N=291)	End (N=339)
Traditional	77(85.6)	62(53)	83(78.3)	26(23)	78(82.1)	38(34.9)	238 (81.8)	126 (37.2)
Moderate	13(14.4)	47(40.2)	22 (20.98)	70(62)	16(16.8)	60(55.1)	51(17)	117 (52.2)
Equitable	0	8(6.8)	1(.9)	17(15)	1(1.1)	11(10.1)	2(.7)	36(10.6)

A comparison of the composite scores of the baseline and endline surveys reveals a shift in attitudes from more traditional and rigid to more equitable and flexible. This shift can be seen in men changing their stance and

accepting new, more equitable norms. However, all men have not yet adopted an equitable attitude; most of the men are in the moderate zone. There is a variation across domains, with some attitudes having changed more than others. What follows is a short description of the attitudes that changed significantly and those that are still slow to change.

11.1. Spousal relationship and intimate-partner violence

The situation as revealed by the baseline survey was quite dismal, with very poor communication between spouses, as seen in the lack of discussion on important matters and the absence of leisure time spent together. The endline survey findings clearly show an immense improvement in communication between spouses, like increased discussions about various aspects of the household, children, and each other’s problems. However, there still appears to be some reluctance in discussing sex. There have been a few instances of couples taking decisions jointly on contraceptive use, but, by and large, this aspect has not changed, perhaps because the wives of most of the men have been sterilized and they have completed child-bearing.

Table 8: Relationship between married couples

	Baseline			Endline		
	Bokaro (%) (N=90)	Gumla (%) (N=106)	Ranchi (%) (N=95)	Bokaro (%) (N=110)	Gumla (%) (N=106)	Ranchi (%) (N=101)
Discuss household chores with wife	30(33.3)	23(21.7)	40(42.1)	71(65.1)	79(73.1)	70(69.3)
Consult wife before buying major assets / migrating for work / incurring other expenses	20(22.2)	21(19.8)	19(20)	59(54.1)	83(63.1)	63(62.4)
Discuss child care/ parenting issues	27(30)	43(40.6)	42(45.3)	72(66.7)	87(81.3)	78(78)

	Baseline			Endline		
	Bokaro (%) (N=90)	Gumla (%) (N=106)	Ranchi (%) (N=95)	Bokaro (%) (N=110)	Gumla (%) (N=106)	Ranchi (%) (N=101)
Discuss future plans for children	31(34.4)	39(36.8)	41(43.2)	73(67)	95(87.2)	84(83.2)
Discuss husband's personal problems	25(27.8)	30(28.3)	17(17.9)	64(59.8)	80(73.4)	58(58)
Discuss wife's personal problems	23(25.6)	31(29.2)	19(20)	67(62)	76(69.7)	60(60.6)
Discuss wife's health	27(30)	40(37.7)	23(24.2)	67(62)	86(79.6)	67(67.7)
Discuss husband's health	27(30)	36(34)	30(31.6)	68(62.4)	80(74.1)	66(68)
Discuss wife's preference in sex	11(12.2)	18(17)	10(10.5)	44(40.4)	55(50.5)	37(37.4)
Discuss family planning/ contraceptive use	7(7.8)	23(21.7)	4(4.2)	37(33.9)	54(49.5)	22(22)
Take wife for outing	4(4.4)	6(5.7)	0	35(32.1)	20(18.5)	22(22)
Accompany wife on visit to her relatives	4(4.4)	9(8.5)	3(3.2)	40(37)	39(36.1)	26(26.3)

The change in behaviour as expressed by men in their stories of change indicates how their lives improved and how changes, both small and big, brought about by the animators and by a few group members made their family environment better and improved their relationships with their partner and with their children.

11.2. Intimate-partner violence

Along with an improvement in spousal relationships, an overall reduction in intimate-partner violence was also seen, especially in Gumla and Ranchi, between the baseline and endline surveys.

The most drastic reduction was evident in the proportion of men in Gumla who reported that they had stopped having sex with their wives without consent. However, the data shows a mixed picture. In Bokaro especially, the reporting in the baseline survey on intimate-partner violence was perceptibly lower than in the other two districts. This could be attributed to the more feudal and conservative context of Bokaro as compared to the other districts. In the endline survey, however, there was increased reporting of violence by men, which suggests that there was perhaps a deeper understanding of violence in the community and a greater willingness to not accept such behaviour (intimate-partner violence) at the end of the project as compared to the beginning of the project.

Table 9: Men reporting having abused wife in the past year

Type of violence	Baseline			Endline		
	Bokaro (%) (N=90)	Gumla (%) (N=106)	Ranchi (%) (N=95)	Bokaro (%) (N=110)	Gumla (%) (N=106)	Ranchi (%) (N=101)
Verbal abuse	21(23.3)	50(47.2)	60(63.2)	36(32.7)	35(32.4)	51(51)
Beating/physical abuse	8(8.8)	14(12.5)	16(17)	13(11.8)	9(8.3)	14(14)
Sex without consent	12(13.4)	38(36.9)	22(23.4)	24(28.1)	12(11.1)	20(20)
Restrict wife from going out	29(32.2)	46(44.7)	54(57.4)	22(20)	23(21.5)	26(26)

12. Challenges Faced During the Project

The group members expected direct benefits from the project like increased livelihood opportunities. They did not see tangible and immediate results from the pursuit of gender equality, as this was not initially regarded by the project leaders and strategists as an issue that was of close interest or concern to the men. This challenge was overcome by sensitizing the members and by sharing motivational and encouraging stories of other men's experiences. A few months into the project, the group members started showing an interest in the meetings and their attendance improved. Some group members, however, lost interest in attending the sessions and they also negatively influenced others with their insistence that their masculinity was being threatened or their claim that the project offered them no direct benefit and hence was of no use to them.

13. Sustainability

The project theory is based on the self-sustaining nature of the intervention; this self-sustaining nature, in turn, is based on the fact that the animators and the members of the fathers' and adolescent boys' groups all belong to the local community. The members are continuing to work together in peer groups and are sustaining the momentum of change. They are also linked with the Ek Saath national campaign that involves men and boys in changing gender-based discriminatory social norms which CHSJ has been spearheading in several states across the country, including Jharkhand. This campaign has provided group members of the project a platform for sharing their knowledge, learning, and experience with other like minded men who are part of the national campaign, keeping them engaged as part of a broader network of men working for gender equality.

14. Acknowledgements

CHSJ thanks all the community members in the project villages who have been responsible for internalizing and taking forward the project's principles. We thank the project's local implementing partner organizations, Srijan Foundation, Sahayogini, and Chotanagpur Sanskritik Sangh, and the project's mentors. We also express our gratitude to Ranjani K. Murthy who conducted the evaluation of the project.

About CHSJ

Centre for Health and Social Justice (CHSJ) is a national civil society resource organisation working on policy issues related to social justice perspective-oriented governance and accountability primarily in the domains of health justice and gender justice. CHSJ focuses on networking, capacity building, research and evidence-based advocacy as primary strategies in its work which is grounded in 10 states on different themes. CHSJ seeks to strengthen governance and accountability in public health and gender justice through technical support, research, and policy advocacy. It is registered as a Charitable Trust with headquarters in New Delhi and field interventions in more than 10 states of India. Community action for Health rights, reproductive and sexual health rights, masculinities and gender form the predominant themes of CHSJ's intervention at present.

IV.B: One Home One Toilet

Shelter Associates²⁶

1. The Problem Statement: A Global Issue

Inadequate sanitation is much more than just an inconvenience - it costs lives, dignity and productivity. Poor sanitation means dying children, uneducated girls, vulnerable women, troublesome old age, distress to the disabled and unhealthy living conditions. 2 billion people across the world still do not have basic sanitation facilities such as toilets or latrines. Of these, 750 million still defecate in the open. Open defecation is a problem because it results in wide-scale health, personal safety and environmental risks.

22% of India's population defecates in the open²⁷ The problem is more widespread in rural areas, but more concentrated in India's urban areas. The high density in urban settlements exaggerates the risks posed to the 13% urban households that practice open defecation (WHO). These urban households tend to be in slums, making them key target areas for any sanitation programme.

1.1.Threat to Children

Open defecation poses a serious threat to the health of children in India who succumb annually to diarrhoea killing 188,000 children under the age of five. Children weakened by frequent diarrhoea episodes are more vulnerable to malnutrition, stunting, and opportunistic infections such as pneumonia (UNICEF).

1.2.Safety & Dignity

Out of India's 120 million adolescent girls, 63 million (52.5%) lack access to private toilets. On an average, women and girls in Indian cities hold their

26 Contributed by Pratima Joshi (Executive Director, Shelter Associates), Kalika Lotlikar (PR & Communication Manager, Shelter Associates), Mehul Banka (Research Analyst, Shelter Associates) and GIS and Research team at Shelter Associates.

27 (<https://data.worldbank.org/indicator/SH.STA.ODFC.ZS>)

bladders for 13 hours a day to avoid going to unsafe public toilets. Such coping mechanisms leave them at risk of Urinary Tract Infections (UTI).

1.3. Poorly maintained Community Toilets

Cities look at Community Toilet Blocks (CTB) as a 'One Glove Fits All' solution. These toilets, however, are not the most effective solutions as they are high on maintenance, have inadequate toilet seat to person ratio and incur high capital costs.

1.4. Gaps in solutions offered by the Govt.

Government programs, despite considerable spending, have failed to resolve this problem in a sustainable manner. India's Swachh Bharat Mission (SBM) is working hard to provide household toilets. The programme has not been effective, however, because of lack of usable slum data, delays in the release of funds, lack of needs assessment, lack of community mobilization and inadequate supervision.

2. The Intervention

Shelter Associates was founded in 1994 by a group of architects and urban planners with a vision of an India where every citizen has access to basic infrastructure and secure tenure. To do so, we work with communities to provide technical support for, and facilitate access to improved sanitation and housing. These efforts help us move towards our goal of ensuring equal distribution of rights and resources by enabling access to basic infrastructure and social housing to the urban poor.

Recognizing the importance of individual sanitation, Shelter Associates innovated beyond the SBM model to not only facilitate better toilet installation but also sustained toilet usage. We deliver sanitation through our 'One Home One Toilet' (OHOT) programme. Constantly improved over the last 8 years, the model has achieved scale, replicability and long-term impact. OHOT has delivered over 22000 (Till Dec 2020) household toilets across Maharashtra in the cities of Pune, Pimpri-Chinchwad, Kolhapur, Thane, Navi Mumbai, Sangli and Panvel impacting over 3,70,000 people directly and indirectly.

In this case study we will discuss the main components of our OHOT model, key differentiators of the model, its impact and challenges we have faced in achieving this impact.

Components of ‘One Home One Toilet’ model

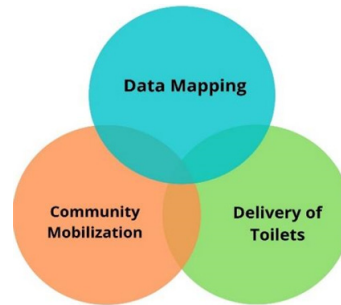
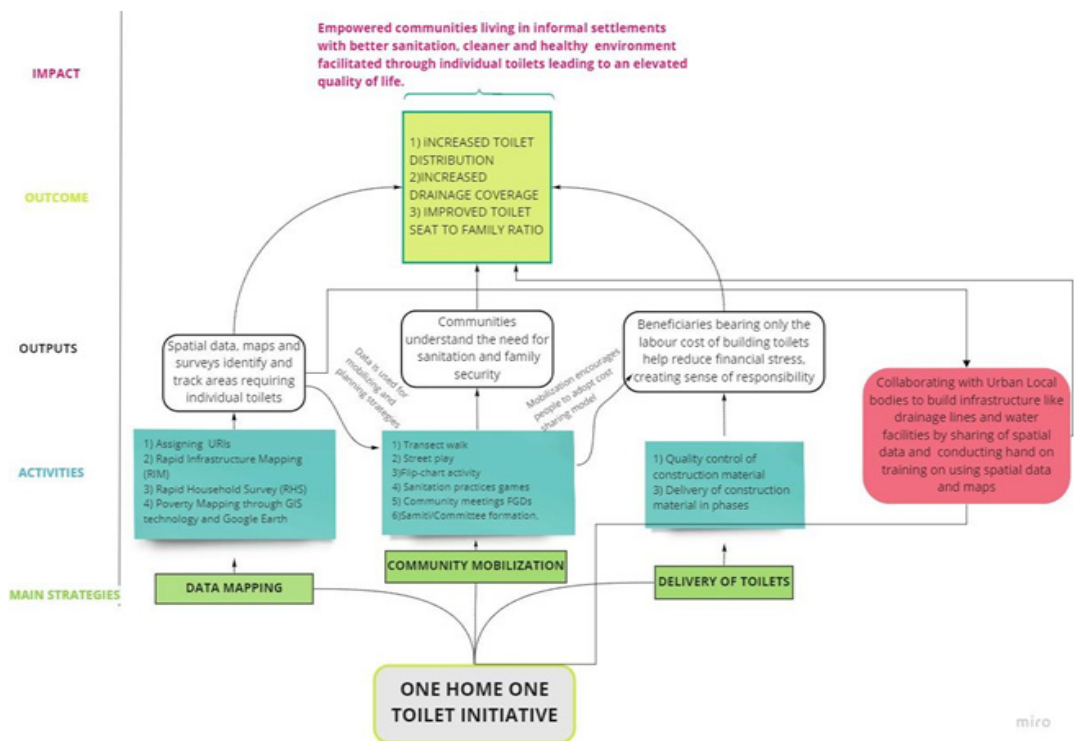


Figure 1. Components of OHOT

3. Theory of Change



miro

4. Data Mapping

Very early on we identified that one of the main barriers to effectively implementing welfare programmes is the lack of cohesive, accurate data. Governments garner their data from secondary sources often leading to information gaps and errors. Such a lack hampers governments from reaching beneficiaries systematically. Recognizing this problem, SA made mapping of slum data a vital component of its work. The data mapping involves 4 processes:

- i. Assigning Unique Reference Identities (URIs)
- ii. Rapid Infrastructure Mapping (RIM)
- iii. Rapid Household Survey (RHS)
- iv. Poverty Mapping through Geographic Information System (GIS) technology and Google Earth

The first step to collecting data is correctly identifying beneficiaries. Doing so is often a difficult task in slums because of informal renting and subletting, ambiguous slum boundaries and family divisions. To counter this problem, we developed our own **Unique Reference Identities (URIs)**. Since our programme delivers toilets at a household level, the URIs were developed to identify the same. Separate URIs were assigned to separate dwellings, where every physical house can have more than one dwelling. In cases where assessing the number of dwellings inside a structure was difficult, the number of kitchens was taken as an indicator.

*Assigning URIs is followed with two data collection processes. Our **Rapid Infrastructure Mapping (RIM)** involves mapping slum level data such as drainage networks, water supply, roads, community toilet blocks, waste management systems, etc. through government maps and on-site surveys. This helps in laying additional drainage networks where required in order to facilitate more toilets. The second process is called **Rapid Household Surveys (RHS)**. The RHS involves collection of household level information such as family details, water availability, sanitation facilities, house area etc. This data collected through door-to-door surveys helps in identifying vulnerable households for toilet facilitation. AVNI open source App is used to collect all of the above information.*

Table 1. Percentage of slums that have been mapped by SA (Updated: December 2020)

Pune Municipal Corporation - PMC	63%	Panvel	100%
Pimpri Chinchwad Municipal Corporation -PCMC	100%	Khuldabad	100%
Kolhapur Municipal Corporation - KMC	100%	Nashik	75%
Navi Mumbai Municipal Corporation - NMMC	100%	Solapur	25%
Thane Municipal Corporation - TMC	30%	-	-

Pre Intervention- HH having Individual toilets- 2.2%

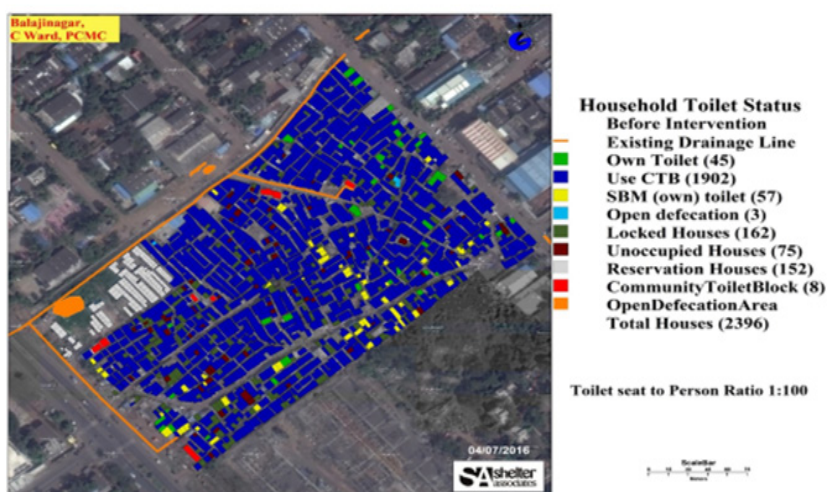


Figure 3. Spatialized data on sanitation facilities for need identification

Post Intervention- HH having Individual toilets- 77%

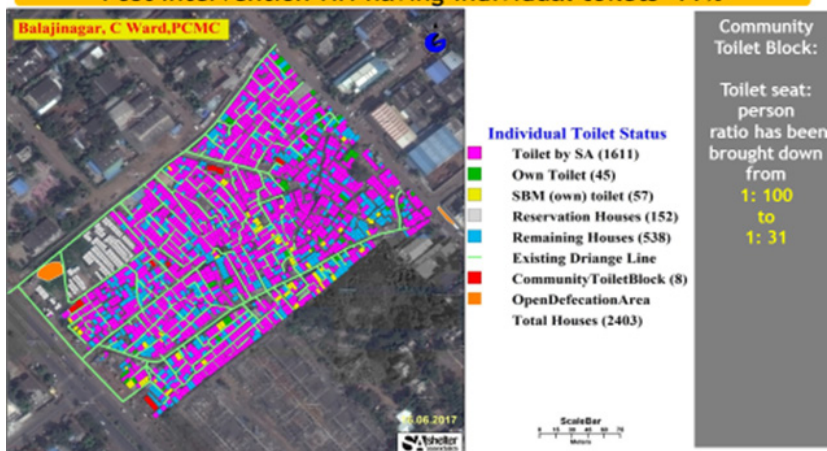


Figure 4. Spatialized data post intervention

The data collected through these two tools is then analyzed using GIS technology. SA pioneered the use of Geographic Information System (GIS) technology & Google Earth for poverty mapping in the late 90's. The dwellings and slum-level infrastructure are first marked on a map and different combinations of household level data is layered on top of it. This visualization is used to understand the slum demographics and dynamics, determine the gaps in delivery of sanitation and identify the most vulnerable slums and households. On analysis of this comprehensive data, it is used as a planning & monitoring tool to strategically target households lacking household sanitation and eventually monitor the entire process of implementation. This spatial data set allows the mobilization of communities to generate demand and awareness regarding household sanitation.

This data is regularly updated on our website and shared with the ULB, which we will talk about later. Over the last two decades we have managed to refine our poverty mapping techniques and have achieved scale in data collection and visualization (Refer to table 1)

Let us look at the example of Balaji Nagar slum. Around 1500 individual household toilets have been facilitated in the largest slum of Balaji Nagar in Pimpri-Chinchwad in a span of around 10 months. (Refer to Figures 3 and 4)

5. Community Mobilization

It is seen through our own data as well as by other studies that installed toilets is not equivalent to used toilets. In India barriers such as lack of coordination for water and drainage, religious notions of impurity, and habits prevent people from using their household toilets, proving that much more thinking needs to go into sanitation programmes beyond simply installation of a toilet. While many of the more recent government programmes on sanitation do have a behaviour change component to them, the results have been largely ineffective.

the OHOT model has a critical community mobilization component catered to changing behaviour and generating a legitimate demand for household toilets among slum residents

In order to counter this problem, the OHOT model has a critical community mobilization component catered to changing behaviour and generating a legitimate demand for household toilets among slum residents. Our entire schedule for mobilization activities is spread over 100 days. The community is reached out to both formally and informally. We organize informal through door-to-door meetings, small gatherings and a walk through the slum focusing on sanitation facilities or their lack. The key purpose for these activities is for SA to get a good idea of sanitation conditions in the particular slum and for residents to start thinking about the issue of sanitation. These activities are complemented with more formal meetings where the need for proper sanitation is discussed and people's opinions on the topic is sought. We also organize focus group discussions to take into account the needs of particular groups of people - men, women, adolescent girls, elderly etc. (Refer to Figure 5)



Figure 5. Mobilizing slum residents through community meeting

Some of the activities organized under the community mobilization component are described below.

Transect Walk - A walk through the slums to identify specific sanitation issues such as open defecation, open dumping, garbage disposal, etc. followed by group discussions. The aim is to gain insights into area specific issues and highlight the benefits of individual toilets.

Street plays, Workshops & Training - To encourage communities to adapt to social, economic and cultural environments required for individual toilets, capacity building activities are held for specific target groups within the community, empowering them with the required knowledge to make healthy sanitation choices.

Flip Chart Activity - This activity helps create awareness through a fictional story on sanitation. The flip charts have clear illustrations and a relatable story to help slum residents grasp the issue and be engaged in the discussions around sanitation.

Snake & Ladder - Uniquely designed Snake & Ladder game wherein unsafe sanitation practice gets you slithering down the snakes while good practices allow you to climb the ladder. The main aim is to share knowledge on safe sanitation in a fun way.

Maze Activity - Designed mainly for children, a maze game which navigates through various situations with the correct sanitation practice leads you to the goal. It keeps the children active while learning good practices of sanitation

Community Meetings - First formal meeting to familiarize communities with the OHOT model and discuss the prevalent sanitation issues. The objective is to communicate OHOT's project benefits to the local community.

Corner Meetings - Informal gatherings within a specific community to discuss sanitation issues, toilet agreements, or any other queries with the objective of understanding issues more clearly through close interactions with small groups of people

Focus Group Discussion - To gain a deeper understanding of the sanitation issues faced by the local community, focused meetings are held with a small number of people from different age groups & gender to discuss issues related to sanitation.

Samiti Formation & Meetings - Sanitation committees are created to address community issues and train members in basic understanding of official procedures and its use for the communities. It helps us to empower women to tackle issues with officials even after SA has withdrawn.

6. Delivery Of Toilets

The last step is the actual delivery of a household toilet on a cost sharing basis. The OHOT model provides beneficiaries with all the material required for a household toilet free of cost, while the labour cost is left on the beneficiaries.

Delivering the toilet entails a slew of tasks from sourcing and quality controlling materials to monitoring the complete construction of each household toilet.

Delivering the toilet entails a slew of tasks from sourcing and quality controlling materials to monitoring the complete construction of each household toilet. Significant in this process is the sharing of responsibility

between SA and the beneficiary. Before a beneficiary agrees to the programme and signs an undertaking, they are given clear guidelines on what SA will provide and what they are required to do to ensure a smooth delivery process. SA also provides options for contractors, although residents are free to choose who they want.

The delivery of construction materials is planned sensitively so as to induce minimum disruption in the daily lives of the beneficiaries. Delivery is divided into 3 stages. Once delivered, they have a set amount of time to complete the construction before the next stage of materials can be sent. Residents have an average of 10 days for the entire construction process. If residents cannot complete their construction responsibility, their materials are requisitioned to another house. The delivery process thus requires regular monitoring.

This cost sharing model allows us to achieve two things. The first is that since the residents have to pitch some of their own money into toilet construction, they tend to only do so if they intend to use the toilet. This prevents the programme from attracting households that want to build toilets to increase their property value or to have it just in case. Secondly, giving residents the responsibility for construction gives them flexibility to design their toilets. Some houses purchase extra material and build larger toilets, while some build it taking into account their ventilation and direction preferences. We have also recorded a sizable number of houses that upgrade their entire houses at one go since they are already hiring a contractor. (Refer to Figures 6 & 7)



Figure 6. Slum residents constructing their toilet.



Figure 7. Toilets constructed by residents

7. OHOT'S Key Differentiators

7.1. Partnership with the Urban Local Body

SA believes in involving the Urban Local Body (ULB) whenever possible. During data collection, we draw on the existing slum maps with the ULBs and build on top of it. SA also conducts hands-on training for Junior Engineers and Sanitation inspectors from the City Corporation on the use of spatial data and maps on the field. Use of open-source platforms for the technology backed solution is keeping in mind it's easy and convenient access for ULBs without any additional investments.

The new spatial maps that we create are officially validated by the ULBs so as to add legitimacy to our data. In fact, in Pune, the Municipal Corporation's website has highlighted our own website that displays some of the data. We believe in this process of co-creating data such that it helps not only sanitation work but can also be used by the city for other interventions. ULBs need to hold such granular data to not just deliver household sanitation but also be able to deliver other infrastructural systems in near future

This partnership also proves useful in the community mobilization phase. Prior to meeting with the community, it is essential for us to meet with the Local Elected Representative, explaining to them the OHOT model and getting their support in implementing our program. This support is useful for us as it builds trust amongst slum residents. Meanwhile, it aids the representative in improving the living conditions in their wards. Besides legitimacy, the partnership is highly useful in the toilet delivery stage where we can contact the required government officials to fix or install drainage lines, which is essential before the delivery of materials starts. (Refer to Figures 8 and 9)



Figure 8. Reading maps- to identify & locate SBM beneficiaries



Figure 9. Practical training on field-use of maps

This partnership is fostered through signing a Memorandum of Understanding (MoU) which clearly states the roles and responsibilities of SA as well as the municipalities. We do so by being in constant communication with local councilors about our work through monthly review meetings and inviting officials for key field visits and community meetings.

7.2. Sustainability

SA recognizes that sustainability is an important issue that comes up with development interventions. This awareness is one of the reasons why the OHOT model makes sure to adapt its programme to the needs of the specific slum and invests resources into awareness creation. Besides these efforts, the OHOT model also sets up a Sanitation Committee in each slum that it visits. These committees are formed of residents within a particular slum who are motivated to take on a leadership position there. The committee is then trained to address administrative and other sanitation related issues so that it can act as a liaison between the formal civic infrastructure and the residents of the informal settlement. These committees become instrumental in solving sanitation as well as other community-level issues.

OHOT model also sets up a Sanitation Committee in each slum that it visits.

7.3. Impact Assessment

SA further recognizes the need for development interventions to have a rigorous impact assessment so as to adapt the program as and when needed and avoid complacency. The impact of the OHOT model is measured through an Impact Assessment Survey done by a team of research analysts of Shelter Associates through a random selection of beneficiary households where drainage systems, solid waste management or toilets have been facilitated. It is aimed at measuring change in attitude, behavior and the situation concerning health, hygiene and sanitation and women's safety/dignity among intervention households. The evaluation is done with a 10-15% sample of the beneficiary population (i.e. total individual toilets built in the slum). There are two parts to the assessment - a pre intervention questionnaire and a post intervention questionnaire. The former captures the status of sanitation, water availability, living conditions, health and safety for households

before the installation of the household toilet, while the latter returns to the same households to capture the changes in these indicators after toilet installation. The post intervention questionnaire also includes questions on specific components of the model and incorporates suggestions from the beneficiaries. The post intervention questionnaire is also administered after a sustainability period of 6-8 months so that the impact is taken after the toilet is normalized in the beneficiary's life.

The impact assessment not only does the task of monitoring the usage and measuring the satisfaction levels, but also helps in identifying and resolving bottlenecks if any during the process.

7.4. Replicability

SA has launched an easily replicable toolkit (available on our website) that details the OHOT model and can be successfully implemented by like-minded NGOs and other organizations. This Toolkit helps in replication of the model in areas that still practice open defecation and use of community toilet blocks. The model has proven its sustainability too across cities with varied sizes, characters, densities etc. The toolkit is also validated and uploaded on the Government of India's Swachh Bharat urban website.

7.5. Scalability

This model has been partially adopted and scaled up by the Pune Municipal Corporation under Swachh Bharat Mission (SBM) helping it achieve the 1st rank under the mission across India. Several other Municipal Corporations across cities such as Navi Mumbai, Kolhapur and Thane are replicating SA's OHOT model in delivery of household sanitation under SBM. The Pimpri-Chinchwad Municipal Corporation (PCMC) is in the process of implementing the OHOT model to achieve ODF+ status. Pimpri-Chinchwad is the 1st city where spatial data has been created & integrated on a city wide level and is out on SA's data portal for open viewership.

SA has been appointed as the 'Nodal Agency' by PCMC to assist them in achieving 'Open Defecation Free'(ODF), ODF+ and ODF++ status. SA has shared the city-wide granular spatial data with PCMC and the same has been validated by them. PCMC's website has been linked to SA's website and using this comprehensive data, PCMC & SA are strategically targeting households lacking sanitation and marching towards attaining ODF+ status.

Having all the spatial data in place, it is being used as a planning tool to allocate funds & factor in budgetary provisions by PCMC in laying new drainage networks/repairing existing networks etc. and as a monitoring and tracking tool to assess and track the progress of deliveries under SBM.

7.6. Traceability

Our end-to-end monitoring ensures completion of work within the promised time period. A Toilet Completion Fact Sheet is filed for every toilet built and are shared with the respective donors who can trace the allocation of their money.

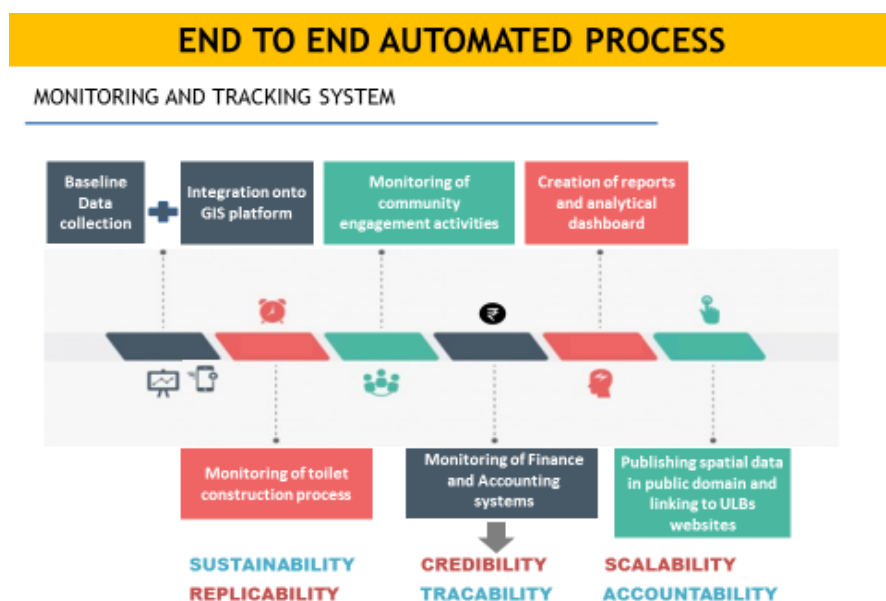
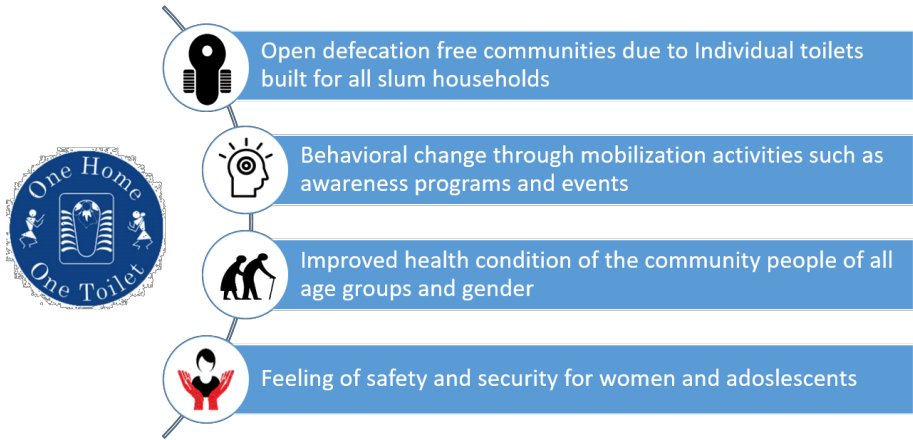


Figure 10. System of end-to-end tracking and monitoring

8. Impact Areas

This section highlights findings from an impact assessment conducted for 39 slum settlements spread across 4 cities where SA facilitated household toilets. As of August 2019, 5531 toilets were facilitated in these settlements. For this impact assessment, a random sample of 12.33% was drawn from these 5531 families, finally comprising 682 families that are analyzed below. The quantitative data is also supplemented with relevant case stories that we came across in the slums we worked in.



8.1. Open defecation free communities

Prior to our intervention, 87% of the study population used community toilet blocks for defecation, 11% defecated in the open and no one used a household toilet. These dynamics changed after the installation of toilets under the OHOT model where only 7% used the community toilets and 1% defecated in the open. 92% of individuals within the surveyed families used the household toilets regularly. The 1% population that still practiced open defecation are largely toddlers who did not change their defecation pattern even after installation of the household toilet.

The fact that such a significant proportion of individuals did change their defecation pattern shows that there indeed was a latent demand for household toilets in the slums which had not been addressed.

The fact that such a significant proportion of individuals did change their defecation pattern shows that there indeed was a latent demand for household toilets in the slums which had not been addressed. Data shows that convenience for families (93% households), saving time (92% households) and use during all seasons (87% households) were the most valued advantages slum residents got from the installation of the toilet. Further investigation into the point of convenience showed that while a large portion of residents complained about the crowd and time wasted at community toilets, 72% of them took less than half an hour to use their household toilets.

Our conversation with Priyanka, one of the beneficiaries, further validated the existence of a latent demand prior to SA's intervention. Priyanka, aged 22 years is a resident of Kalpataru Chawl at Jaybhavani Nagar, Thane. While her mother stays at Satara, Priyanka has to stay with her father in Thane to pursue her education. Few years ago, her father had to shift to another place due to some personal reasons and Priyanka had to stay back alone. Priyanka suffered from frequent bouts of nausea while visiting the dirty CTB on a daily basis. The CTB was also inaccessible to her when she was menstruating because of the lack of water. When SA's program came about, we realized that her house was below the drainage line. Priyanka nagged her father to spend 2.5 lakhs to rebuild the house with a higher plinth to connect to the drainage network. The length she was willing to go to for installing a household toilet shows the real demand that OHOT taps into.

8.2. Health

The overall health status also improved after the installation of household toilets. Due to the household toilets, people do not have to go to the often-unsanitary CTBs or open spaces for defecation and they instead get cleaner environments for defecating, leading to better health.

In the pre-intervention survey 4% households had visible presence of excreta in their surroundings and 62% had flies. These numbers dropped in the post-intervention survey with

1% households with excreta visible and 21% with flies. Direct contact with excreta or transmission of bacteria from excreta through flies are two of the leading causes of sanitation-related health concerns. The data shows that individual toilets significantly reduced this risk. Important to reducing this risk is the regular upkeep of clean toilets. 71% of individuals reported in the pre-intervention period that the community toilets were very unclean, while 77% households in the post-intervention cleaned their households on a daily basis, thus significantly improving hygiene conditions.

Rupali, a mother of two, lived in one of Kolhapur's larger slums. Using the unclean CTBs, Rupali and her family faced health issues like stomach ache, bloating, nausea, and vomiting. Cooking in such unhygienic conditions while also feeding the children exacerbated the family's health concerns. These

problems disappeared with the installation of SA’s household toilet because the family could maintain cleanliness on their own and did not have to depend on others to do their part.

One of the major sanitation-related health risks faced by women is that of Urinary Tract Infection (UTI). The risk of UTI tends to be more prevalent among women who use unhygienic and inadequately maintained community toilets. Our data studies the prevalence of the three significant symptoms of UTIs- itching in private parts, burning sensation and frequent urination. The installation of household toilets majorly reduces the presence of these symptoms among women. These results are captured in Table 2.

Table 2. Prevalence of UTI symptoms among surveyed women

Health concerns	Pre- Intervention	Post Intervention
Itching in private parts	130	24
Burning sensation/pain during urination	154	27
Frequent urination	130	31

Zayda Shah is a resident of Shanti Nagar in Pimpri-Chinchwad where lives with her four daughters and husband. Lack of household sanitation facility was posing as the biggest problem for her four daughters and herself. One of her daughters had also been facing Urinary Tract Infection due to which they had been spending heavily on her treatment. Having to defecate in the open, they would all be subjected to such challenging situations, especially in the monsoons. Their negative experiences with open defecation pushed them to realize the benefits of a household toilet and it was finally the introduction of the OHOT model that allowed the family to install a household toilet at subsidized rates and significantly improve their health and hygiene conditions.

8.3. Women’s safety

The unsafe conditions related to their sanitation were widely felt by women in the slums we worked in. 0.9% of female family members (16 women) had faced physical abuse and 3.1% (52 women) had faced teasing during sanitation-related activities. Even when women did not report facing harassment, 37.5% female members felt unsafe using CTBs. When the same women were asked about their sanitation conditions in the post-intervention period, 60% stated that household toilets had improved their safety conditions. Women, acting

on their fear of harassment, tried to reduce the number of trips they need to take to the public toilets. 31.6% respondents said that they avoided going to the toilet for defecation and 4.8% avoided going for urination. In order to reduce the number of trips, women restricted their food and drink intake, which in turn affected their health. 26.8% respondents followed restrictions on their dinner and 12.7% avoided drinking any fluids at night so that they can avoid going to the defecation sites at night.

These behaviour patterns drastically declined after the OHOT intervention. In the post- intervention period only 1.4% respondents avoided going to the toilet when they needed to. Moreover, a much lower 4.8% restricted their food intake and 1.7% restricted their liquid intake at night to avoid going to the toilet.

Ashadevi stayed in a Mumbai slum with her two daughters and a son. Being a single mother and the only caretaker in the family, she was constantly worried for her daughters who were of a growing age. With molestation cases prevailing in the community, she felt unsafe with her daughters visiting the community toilet during the day and night. The surrounding area of the community toilet wasn't safe for girls to go alone at odd hours. This fear was a driving reason for Ashadevi to opt-in for the household toilet. Finishing her construction in 15 days, she reported to our field staff "What more can I ask than the safety for my daughters. Our toilet has given us a sense of dignity and empowerment for my family."

8.4.Improved accessibility

Community toilets are not always easily accessible to all members in the family due to old age, disability, health conditions among other reasons. Under such conditions, people may resort to open defecation at a convenient location. Table 3. shows the presence of family members with such special characteristics in our sample. It shows the % of children, especially abled, mentally challenged, senior citizens, pregnant women, recently delivered women and other disabled/paralyzed people in the households in the selected population.

Table 3 Family and age wise data

Children (age<6)	11%	Senior Citizen (age >70)	1.5%
Specially abled	0.8%	Pregnant women	0.6%
Mentally Challenged	0.3%	Recently delivered women	0.2%
Other (paralyzed etc)	0.4%		

75% families reported that one of the main benefits of installing a household toilet was that it was more convenient for the elderly, children, women and physically challenged people.

Pratibha, one of our beneficiaries, is challenged with her night vision while her mother has been battling total blindness for the last 21 years. On being introduced to the OHOT model, she immediately agreed and promptly started to raise the finances for the same. This was a new beginning for her mother, son and herself, as the thought of having a toilet in their home itself eased their stress and they could start living more comfortably.

8.5. House upgradation

451 (66 %) houses have been upgraded along with the toilet construction. Majority of the houses built bathrooms (for bathing) alongside the toilets while some constructed a combined toilet and bathroom. Many families took up more than one upgradation activity post the toilet installation. Due to the toilet construction facilitated by SA, people could start upgrading their houses leading to upliftment of their standard of living. (Refer to Figures 11 and 12)



Figure 11 and 12. House upgradation after facilitation of toilets

Dipak Khandale has been residing in Mahatma Phule Nagar in Pimpri-Chinchwad for the last 40 years. Dipak and his family lived in deplorable conditions with no proper house or a road network, which eventually led to the practice of open defecation. In 1994 a community toilet was introduced by the government in his slum, however, the time taken to access it prevented him and his family from using it frequently.

After finding out about Shelter Associates and its initiative on household toilet facilitation, Dipak raised the necessary finances for getting a toilet constructed in his house. Not only did he get the toilet constructed, but also got the house repaired transforming from kutchha to pucca solving all his and family's major issues. Along with safe sanitation, Dipak and his family can now enjoy staying in a newly renovated house which would have not been possible if Dipak had not taken the initiative to build an individual toilet.

8.6. Cohesive Sanitation Planning

Besides impacting slum residents, we also got responses from the Urban Local Body - ULBs we interacted with. The OHOT model directly benefited the government's Swachh Bharat Mission. Household toilets drastically improved the Community Toilet Blocks' (CTB) toilet seat to person ratio and with full scale implementation, it can even eliminate the need for unnecessary CTBs. Household toilets further do away with the excessive maintenance costs, since individual toilets are maintained by families themselves and do not require supervision.

Government officials whom we have collaborated with often write back to us. Some of the encouraging feedback we have received are quoted below.

"Shelter Associates has been working jointly with the Municipal Corporation towards facilitation of household sanitation. The biggest advantage is that the toilets have been facilitated in the densest areas across the slums. Due to household toilet facilitation and awareness about health, hygiene and cleanliness, not just households but their surroundings are clean and well maintained."

- Dr. Vijay Patil , SBM Nodal Officer, Kolhapur Municipal Corporation

“The creation of spatial data through the use of GIS, mobile and remote sensory technology by SA has helped the Municipal Corporation to identify critical gaps in the delivery of sanitation. This has led to the additional budgetary allocation of laying additional drainage lines in some of the slums of PCMC to encourage families to build their own toilets”

- Mr. Shravan Hardikar (IAS), Municipal Commissioner, Pimpri-Chinchwad Municipal Corporation

9. Challenges in Implementation

9.1. Project Funding

SA raises the funds through CSR towards the implementation of the OHOT initiative. Making funding support available on a long run through Corporate Social Responsibility (CSR) is a critical challenge.

9.2. Change in leadership

The Urban Local Body officials need intensive training to understand and make use of spatial data and GIS technology and related aspects. Although SA facilitates the training but change of leadership within ULBs can cause delays or set-backs in the project development/ implementation.

9.3. Political resistance

Working in slums always involves the risk of political or communal resistance. Keeping the ULB and elected representatives close to the project is therefore critical and seeking their support throughout is equally challenging. At times, there is opposition from certain political representatives and creates a hurdle during the project facilitation.

9.4. Behavioural differences among communities

The success of our project depends on the acceptance by slum communities. Although mobilization activities, discussions and workshops help gather positive response from communities, a certain section of the slum population, especially men, still adopt old methods of sanitation and are unwilling to change.

10. Conclusion

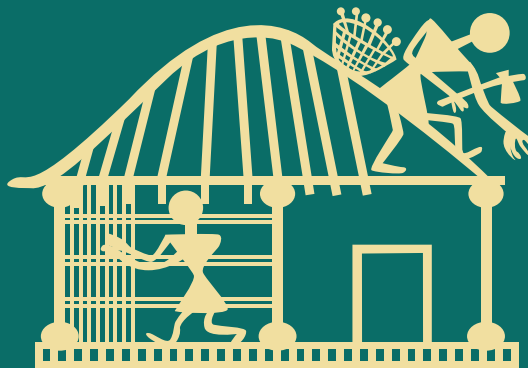
On the completion of 5 years of Swaccha Bharat Mission, while the construction of toilets has increased, lack of water, poor maintenance and slow changes in behaviour have stood in the way of ending the practice of open defecation. People who even owned a toilet went out in the open to defecate. Even though we are closer to our mission of providing safe sanitation, the same has not been fully achieved. Shelter Associates' community centric approach of toilet facilitation still continues to bring the nation closer to its goal of having an Open Defecation Free India.



Figure 13. Community celebration on completion

About Shelter Associates

Shelter Associates (SA) is a Civil Society Organization founded in 1994 by architects and urban planners to ensure equal distribution of rights and resources by enabling access to basic infrastructure, sanitation and social housing to the urban poor. Based in Pune, SA comprises architects, social workers, geographic information systems (GIS) analysts and community workers. For its contribution to public health, community hygiene and the plight of the urban poor, Shelter Associates has received the 2009 Google Earth Hero award and LPC Honour Award 2020 at the UN Habitat World Urban Forum amongst other accolades. Aligning with the United Nation goals, our project, 'One Home One Toilet' caters to the basic need for sanitation and hygiene through creation of spatial data, mobilizing communities and delivering toilets through a cost sharing model. It is an ongoing process wherein through the combination of technology, processes and stakeholder participation, SA delivered over 22000 toilets in the slums of selected urban cities of Maharashtra impacting over 3,70,000 people directly and indirectly.



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