



Ministry of Housing and Urban Affairs  
Government of India



# Social and Organisational Innovation in Low-Income Settlements



Good Practices  
Resource Book



## **Good Practices Resource Book**

### **Social and Organisational Innovation in Low-income Settlements**

**This publication is a collection of global good practices contributed by technical experts and the Program Management Unit in the CITIIS program.**

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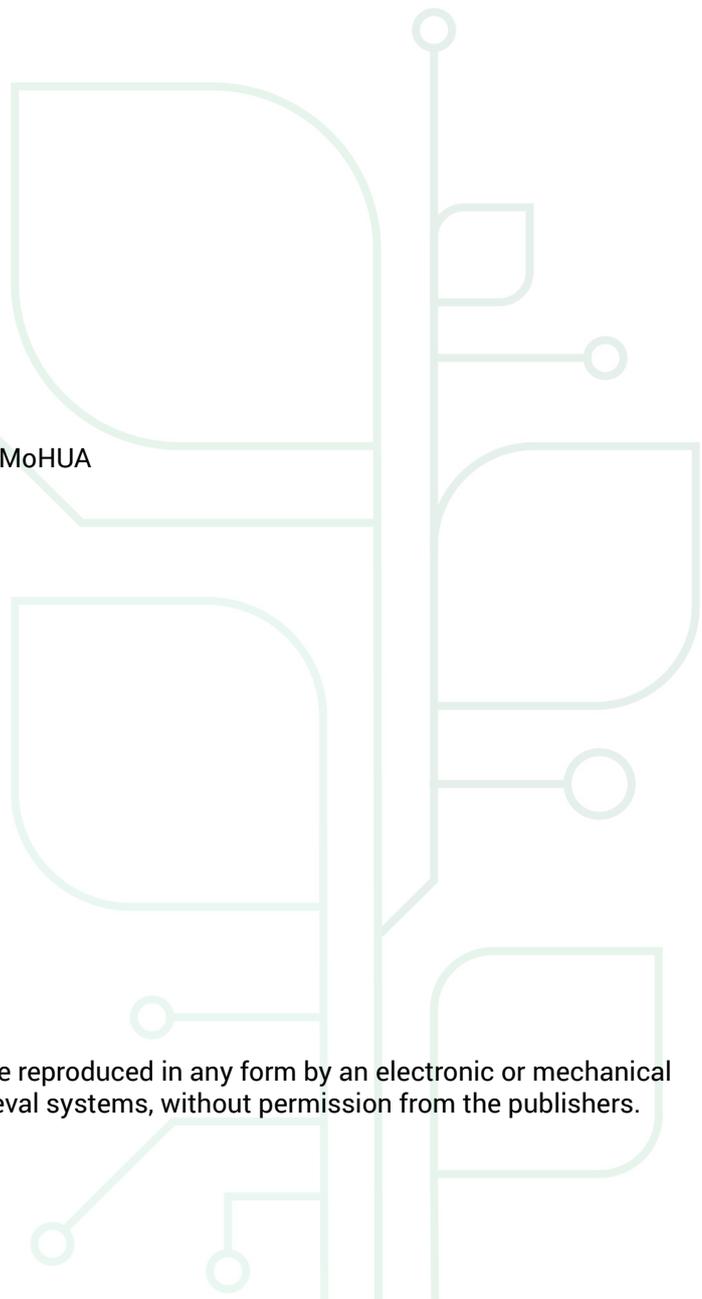
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# Testimonials

Hitesh Vaidya

Director  
NIUA



*In our endeavour to promote sustainable urban infrastructure development, NIUA through the CITIIS program is facilitating the mainstreaming and adoption of good practices across sectors of mobility, public open spaces, social innovation, and urban e-governance. This is the second resource book in a four-part series that aims to share city-level learnings and experiences from a varied nature of social and organisational innovation projects implemented across the world – ranging from housing solutions, to civic engagement, as well as innovative projects in education and health sectors. I hope that the readers will find it a useful resource.*

Chris Blache

International Mentor – CITIIS program



*As we started the CITIIS project about a better public-school experience for students in CHENNAI, we came to address the concept of SMART. What is a smart education? Smart learning aims at providing holistic learning to students using modern technology, but also collaboration, participatory pedagogy, flexible infrastructures, to fully prepare them for a fast-changing world, where adaptability is crucial. This way of looking at change towards a more resilient approach does not only apply to the schools but to all urban transformation projects from an environmental sustainability and social inclusiveness perspective. The CITIIS program is a great opportunity to do more with less – by encouraging creativity over convention, and better with more - by implementing an ongoing participatory approach.*

Swati Janu

Domestic Expert - CITIIS



*The cities of Visakhapatnam and Amaravati have been working closely with the stakeholders from the start. And, this engagement shows in every little detail from the selection of stone for flooring so that it is easy to clean to rethinking the spatial distribution of activities in the anganwadis, school and health centres. By incorporating the BaLA elements into their architecture, a very simple, low-cost but powerful step has been taken to incorporate learning into the school walls, floors and steps. I hope these best practices can help other cities in adoption of soft measures as well, apart from the creation of physical infrastructure.*



**Prasanna Desai**  
International Mentor – CITIIS

*I strongly believe that if any change is to be brought in the system it has to be from the root level and led by the government agencies. The thematic area of Social and Organizational Innovation in Low-income Settlements is a commencement of new thinking for organizations and an encouragement towards holistic thinking. The key aspect for a project to be successful is not just its basic infrastructure but it should be community driven thus creating a sense of belonging with its stakeholders. The introduction of BaLA (Building as Learning Aid) as a design language and keeping an appropriate cost and sustainable approach will certainly lead to a project fulfilling the needs. Both Amravati and Vishakhapatnam projects are linked with education & health which are two major areas that are very much ignored and are need of the economically weaker sections of the society and true indicators of progress.*



**Shahena Khan**  
Domestic Expert – CITIIS

*My idea about sharing best practices or I would call them “perspective cases” with the SPV teams was to break the stereotypical way of addressing an urban challenge. These cases give new perspective about different approaches, tools, methodologies, and processes that can be explored and adapted for the project. The focus of the cases shared with Puducherry was on “social innovation”- to go beyond stakeholder engagement and collaborate with communities from low-income neighbourhoods in mining data/information, project design, development, and implementation to instil a sense of ownership among them, that they become partners in ensuring sustainability of the interventions.*



**Naim Keruwala**  
Program Coordinator and Team Lead - CITIIS  
NIUA

*The CITIIS program has promoted social and organisational innovation in urban infrastructure projects and encouraged the SPVs to develop contextual and innovative solutions by collaborating with end-users and citizens in co-creating solutions. In this endeavour, we encourage the adoption of global best practices, city-to-city networking, and peer learning. This documentation comprises eleven good practices in social innovation from around the world, selected from an extensive and evolving repository of good practices, prepared jointly by the CITIIS Program Management Unit and the technical assistance cohort.*

# Driving Inclusivity and Sustainability in Cities through Social and Organisational Innovation

## Feature Article

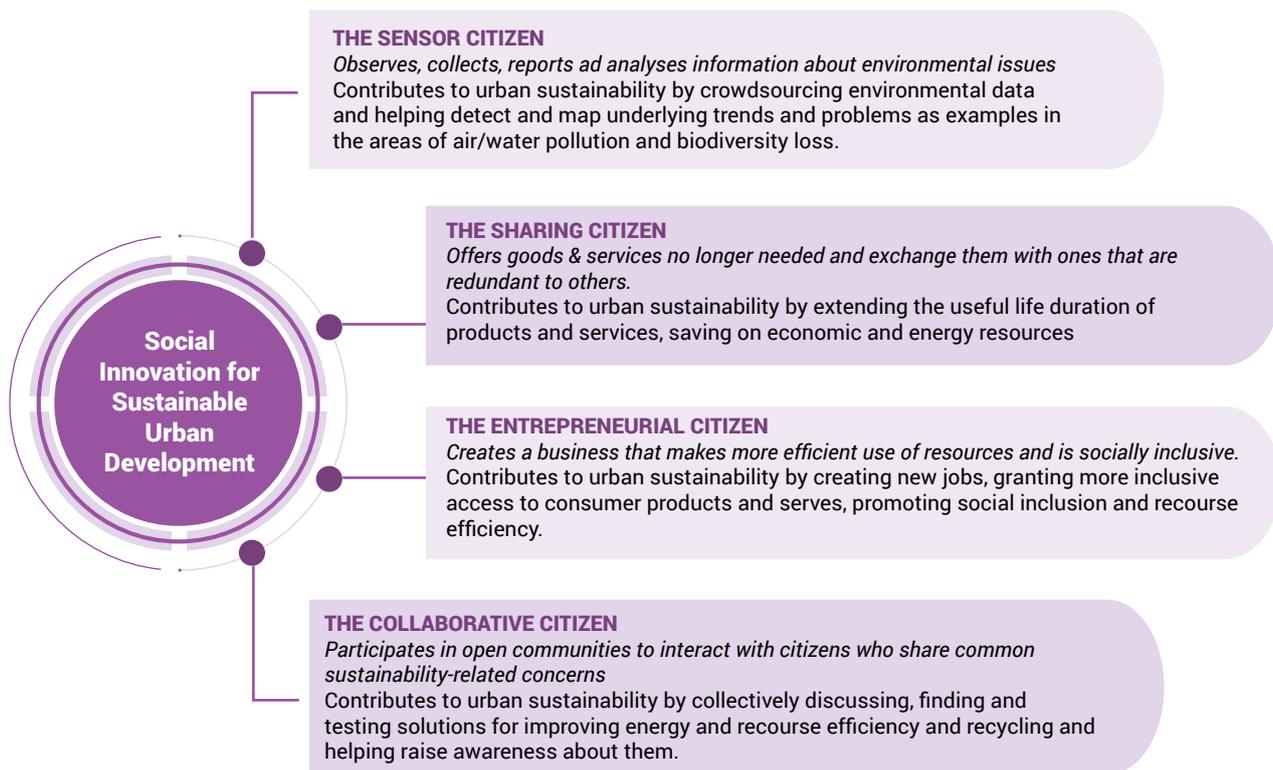
The last two decades have seen social and organisational innovation being increasingly practiced to alleviate the most pressing urban concerns. Coupled with advancements in Information and Communications Technology (ICT), social and organisational innovation has come to the forefront of urban development and has shown potential to create systemic change and positive societal impact.

*'Social and organisational innovations can be defined as path breaking or game-changing ideas that aim at meeting the required social goals of the community in question.'*<sup>1,2</sup> Governments across the world are currently capitalising on the concept of social and organisational innovation in the development context focusing on overall human and community development by incorporating it in public policy agendas and providing funding, training, and networking opportunities for cities.

For instance, the Europe 2020<sup>3</sup> strategy highlights the role of low-cost social innovation in driving smart, sustainable, and inclusive growth through the 'Innovation Union' initiative—which regards innovation to go beyond merely industrial—but acts as a means to actualise society's capacity to organise, act, and respond to the persisting urban challenges. Also, the initiative aims to capitalise on the knowledge generation and transfer opportunities provided by new technology.<sup>4</sup> Similarly, developing nations like India, in its Smart Cities Mission (SCM) emphasise active citizen interaction, intervention, and innovation, thereby making way to create smart outcomes for citizens.

However, much of the focus on social and organisational innovation has been driven by the realisation of the imminent dangers of increasing climate change and other environmental issues arising

- 1 Manzini, E. (2014). Making things happen: Social innovation and design. *Design Issues*, 30(1), 57–66.
- 2 Social Innovation: What it is, why it matters and how it can be accelerated, Mulgan, G. (2006a). Available at: [http://www.sbs.ox.ac.uk/sites/default/files/Skoll\\_Centre/Docs/Social Innovation ? What it is%2C why it matters%26 how it can be accelerated.pdf](http://www.sbs.ox.ac.uk/sites/default/files/Skoll_Centre/Docs/Social%20Innovation%20What%20it%20is%20why%20it%20matters%20how%20it%20can%20be%20accelerated.pdf).
- 3 European Commission. (2010), EUROPE 2020: A European strategy for smart, sustainable and inclusive growth. Accessed on 30 June 2021, Available at: <https://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%2007%20-%20Europe%202020%20-%20EN%20version.pdf>
- 4 European Commission (2016), Europe 2020 in a nutshell, Accessed on 5 June 2021, Available at: [http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index\\_en.htm](http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index_en.htm)



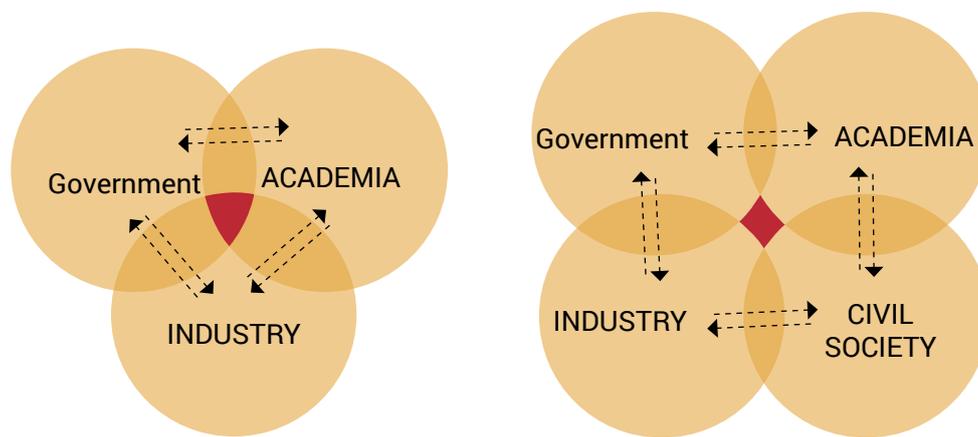
Actors within social innovation for sustainable urban development. Source: Millard, J. (2018). How social innovation underpins sustainable development. *Atlas of Social Innovation: New Practices for a Better Future*; Howaldt, J., Kaletka, C., Schröder, A., Zirngiebl, M., Eds, 41-43.

from neo-liberal development policies, and their pernicious impacts on the social and economic development of the vulnerable and the marginalised in the least developed or developing countries. Historically, urban development has often relied on social practices and cultures to map future progress, whether in a top-down fashion or developed slowly from the bottom through a thorough analysis of the quotidian, adapting to the community's specific needs and their ever-changing environments. While top-down approaches are condemned for being rigid and non-participative, bottom-up approaches are often applauded for their connection with the grassroots, thus fostering innovation. Realising this fact, the urban decision makers, policy makers, and the United Nations mainstreamed social innovation approaches for designing and delivering public services to the vulnerable and the marginalised in an inclusive manner as an important aspect in achieving the Sustainable Development Goals (SDGs) by 2030.

## Social Innovation and Sustainable Development: Two Peas in a Pod

Social innovation is increasingly being recognised as an important component of developmental frameworks necessary for sustainable development. In the developing world, it helps in meeting social needs such as education and health services in a way that involves collaboration with, and the empowerment of, the service user or beneficiary.<sup>5</sup> According to the *Atlas of Social Innovation: New Practices for a Better Future*, there are four kinds of citizen actors, each contributing in their own way possible to address the developmental needs of the community. A progressive endeavour targeting to utilize social innovation as a strategy not only aids spatial/physical development, but also helps the communities involved to develop their own capabilities, increase their levels of ownership of a service, and thereby transform their social relations and improve their access to power and resources.

<sup>5</sup> Millard, J. (2018). How social innovation underpins sustainable development. *Atlas of Social Innovation: New Practices for a Better Future*; Howaldt, J., Kaletka, C., Schröder, A., Zirngiebl, M., Eds, 41-43.



*Innovation at the heart of triple helix and Quadruple helix models. Source: Carayannis, E.G., Grigoroudis, E., Stamati, D. and Valvi, T., 2019. Social business model innovation: A quadruple/quintuple helix-based social innovation ecosystem. IEEE Transactions on Engineering Management, 68(1), pp.235-248.*

Actors within social innovation for sustainable urban development. Source: Millard, J. (2018). How social innovation underpins sustainable development. Atlas of Social Innovation: New Practices for a Better Future; Howaldt, J., Kaletka, C., Schröder, A., Zirngiebl, M., Eds, 41-43.

Adopting social and organisational innovation methods according to the context can help develop alternate working models to face the critical challenges of our cities, societies and economies. For instance, the United Nations Social Development Network (UNSDN) is currently supporting Asia-Pacific countries' use of social innovation as a method to tackle the issues of aged population and gender equality. In India, social innovation is centered around the provision of basic utilities and services, through communications, advocacy, and outreach across communities to help foster behaviour change of citizens and service providers alike towards issues that concern the communities in question. For example, availing every citizen's right to clean sanitation facilities has helped many slums in Kolkata in securing their tenure.<sup>6</sup>

Social and organisational innovation is inherently 'local'. However, local solutions developed and deployed by one community may not always be a good fit or relevant for other places.<sup>7</sup> A more nuanced and

contextual approach to local development should be taken to bridge social innovation with sustainable urban development. In an urban environment, social innovation seeks to develop solutions to promote community cohesion by brainstorming solutions together and sharing community resources, and simultaneously, furthering actions towards sustainability. Additionally, it focuses on providing low-cost local answers to local problems and building practices that can be documented and contextualised elsewhere. The foremost focus areas of social innovation within the sustainability discourse include the following.<sup>8</sup>

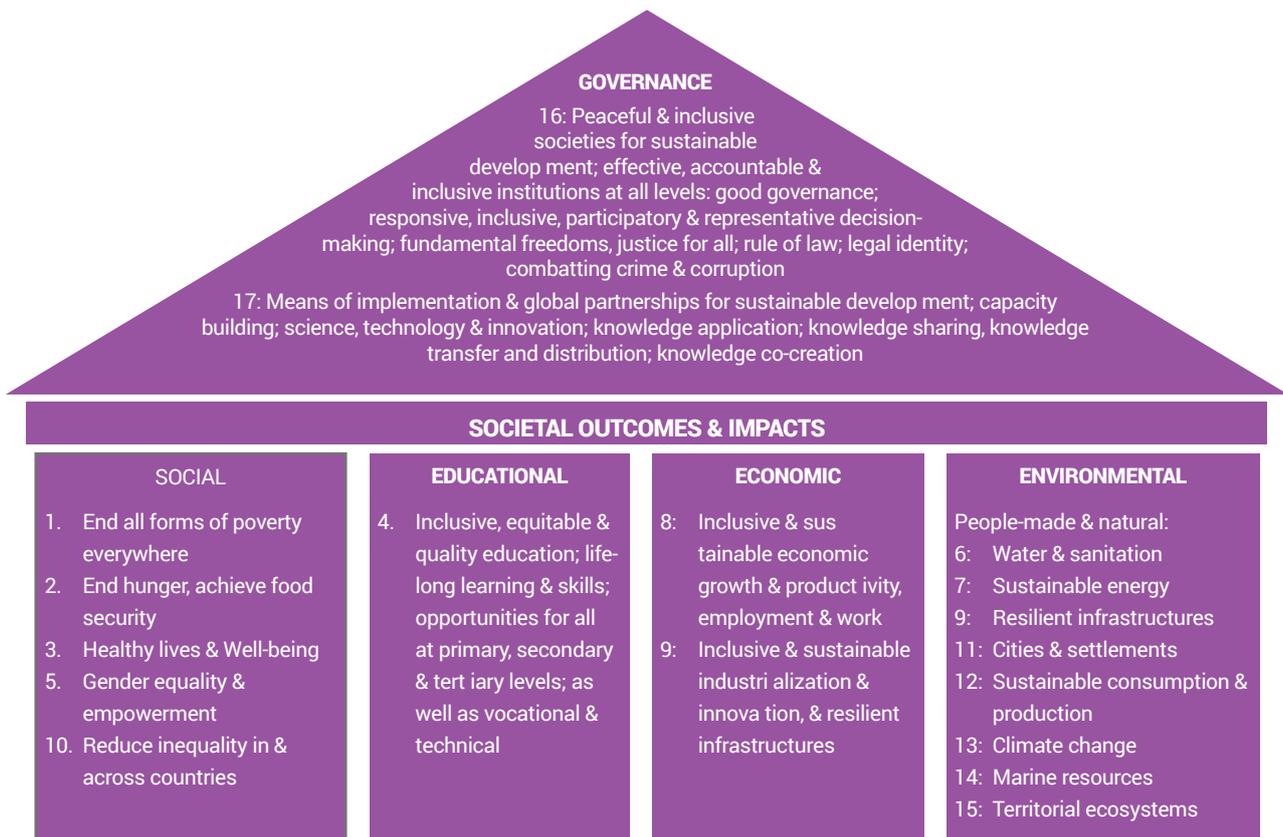
- Local community structures, governance structures, politics, regulations and institutions
- Economic revival and social security
- Community behaviour and cohesion
- Use regimes and systems

Up until the last decade, innovation was often a 'triple helix' model that brought together the public, private and research institutions. More recently, with the advent of the Sustainable Development Goals, the civil society has been added as the fourth pillar to create the 'quadruple helix model', essentially recognising civil society as an essential source of innovation, and urban change.

<sup>6</sup> Bhattacharya, T. (2017). Using "Right to Sanitation" to claim Land Tenure.

<sup>7</sup> Grimm, R., Fox, C., Baines, S., & Albertson, K. (2013). Social innovation, an answer to contemporary societal challenges? Locating the concept in theory and practice. *Innovation: The European Journal of Social Science Research*, 26, 436–455.

<sup>8</sup> Howaldt, J., & Schwarz, M. (2010). Social innovation: Concepts, research fields and international trends. In H. Klaus, & F. Hees (Eds.), *Studies for innovation in a modern working environment –International monitoring*.



17 SDGs divided into the Quintuple Helix Model

However, the UN defines sustainability as *'meeting the ends of the current generation without compromising the ability of future generations to meet their needs.'* Going by that school of thought, the idea of sustainability and social innovation should not only involve the actors as mentioned in the quadruple helix model, but also the natural environmental systems that we live in, giving rise to a 'quintuple helix' model.<sup>10</sup> While nature or the biological systems we live in do not have an agency of their own, the global challenges that we face today, in the form of climate change, employment issues, food security, unequal access to resources, issues faced by the vulnerable and the marginalised, would require a socio-ecological transition to sustainability. Adopting this approach will promote social inclusion, innovation, and educate the communities on the ecological processes that would help them in documenting phase wise targeted physical/social change in order to understand and compare the development process since the inception,

to the completion and post implementation phases. In this regard, the 17 SDGs can be categorised into the quintuple helix model, where social innovation works and supports all the SDGs directly or indirectly. It is helping to create a new mindset and supportive framework for sustainable development as an essential part of the new innovation and knowledge paradigm.<sup>9</sup>

### Social and Organisational Innovation in CITIIS

CITIIS recognises that there is a growing need for Indian cities to adopt new and fundamentally different pathways to provide clean, cost-effective, and sustainable social innovation with the least environmental footprints and impacts on human health. The program recognises that there is a greater need to shift focus from only financing large scale infrastructure, to finance projects that have strong social and climate-related impacts, while also mainstreaming gender and innovation.

<sup>9</sup> Millard, J. (2018). How social innovation underpins sustainable development. Atlas of Social Innovation: New Practices for a Better Future; Howaldt, J., Kaletka, C., Schröder, A., Zirngiebl, M., Eds, 41-43.

Under the theme of Social and Organisational Innovation in Low-income Settlements, CITIIS is implementing four projects to the tune of INR 420.85 crores that aim at improving universal access to basic services and demonstrating capacity to implement in-situ rehabilitation in a relatively short period through a participatory approach, and target modernising public schools through infrastructural upgradation, and improvements in learning and pedagogy. The four projects are as follows:

### Chennai

#### **Model and Smart Corporation Schools in Chennai, by Chennai Smart City Limited (CSCL)**

Project Cost: INR 95.25 crores, CITIIS Grant: INR 76.2 crores

The project aims to transform, reimagine, and re-invent school education across public schools that currently have an enrolment of over 80,000 students from low-income households. This transformation will include the revamp of physical infrastructure, creation of digital infrastructure, teacher training and skill upgradation, extracurricular activities and soft skills, introduction of SMART pedagogy, and evaluation methods across 28 schools in 18 campuses through the following interventions.

1. Physical infrastructure upgradation to strengthen campuses, provide a nurturing and safe educational environment
2. Digital empowerment of corporation schools to enable application-based deep learning and instilling a culture of self-paced and self-driven learning
3. Capacity building and complementation for future-ready schools
4. Collaborations for sustainability and continuous upgradation of institutions
5. Development of a conducive and nurturing environment for holistic development of children and adolescents – sports education, physical training, arts and extra-curriculars, and counselling
6. Development of schools as appealing alternatives to private schools by developing physical infrastructure for the benefit of students and teachers

Read in detail about the project here: <https://www.niua.org/citiis/project/model-and-smart-corporation-schools-chennai>

### Amaravati

#### **Basic Infrastructure Development in Low-income Settlements in Amaravati City[1] by Amaravati Smart and Sustainable City Corporation Limited**

Project Cost: INR 146 crores, CITIIS Grant: INR 80 crores

The project aims at improving the level of infrastructure in four village settlements covered under the former capital city area at par with the standards of the proposed capital area. The interventions in the areas of health, education, and livelihood intend to improve the living standards of the village residents and contribute to overall human development and would benefit 12,000 children, 12,000 mothers and 3,200 families. Overall, the project comprises four components:

1. E-health sub-centre cum multipurpose service centre
2. Model *anganwadi* centre
3. Holistic development of select government schools
4. Multi faith funeral campus

The project's sustainability goals manifest in its commitment to primary and secondary healthcare to achieve universal health coverage, by ensuring equity, adequacy, and quality.

Read in detail about the project here: <https://www.niua.org/citiis/project/basic-infrastructure-development-low-income-settlements-amaravati-city>

### Visakhapatnam

#### **Social Inclusion through Modernizing Public Schools as Smart Campus in Visakhapatnam by Greater Visakhapatnam Smart City Corporation Limited**

Project cost: INR 65 crores, CITIIS Grant: INR 52 crores

The project aims at rethinking teaching and learning environments prevalent in government schools through the lens of

inclusion and sustainability. The project focuses on achieving good identity and branding of the schools by bringing them at par with private schools, recreation and well-being of students by adequate infrastructural provision, improved accessibility and safety of all students, and a sustainable approach.

Read in detail about the project here:  
<https://www.niua.org/citiis/project/social-inclusion-through-modernizing-public-schools-smart-campus>

### **Puducherry**

**Our Neighbourhood is Your Neighbourhood Too - A Participatory Planning Approach for Improvement of Low-income Settlements in Puducherry by Puducherry Smart City Development Limited**

Project Cost: INR 114.60 crores, CITIIS Grant: INR 80 crores

The project envisages the upgradation of housing and community infrastructure, and improving the overall quality of life of disadvantaged communities through a combination of interventions aiming at enhancing the social, urban, and financial inclusion of low-income settlements in the city. It aims to address these challenges by providing solutions oriented towards citizen participation, ICT enabled provision of government services, promotion of economic activity and employment, upgradation of public spaces in low-income settlements, and a dedicated knowledge and design centre. The project also focuses on capacity building of lead delivering agencies.

Read in detail about the project here:  
<https://www.niua.org/citiis/project/our-neighbourhood-your-neighbourhood-too-participatory-planning-approach-improvement-low>

# The Good Practices Resource Book

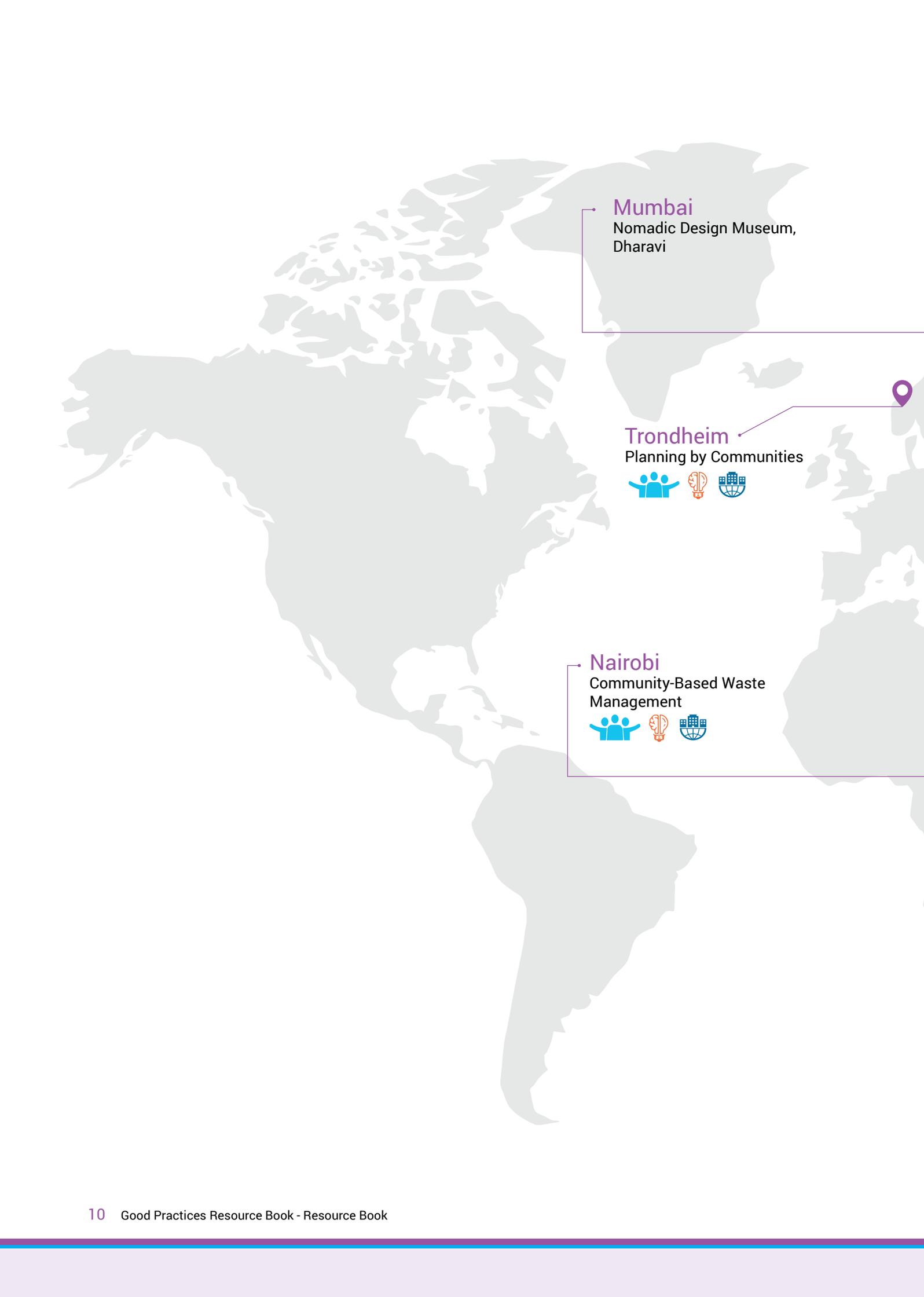
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The capture and transfer of knowledge has been an essential and catalysing element of the CITIIS mandate. In order to ensure that the CITIIS projects make significant contributions and have systemic positive impacts over and above the provision of finance, the program envisages to drive efficient knowledge management, encompassing the generation of new development-related and sector-specific knowledge, distillation of existing knowledge, advancing the adoption of best practices, piloting new approaches, driving reforms, and driving capacity enhancement across stakeholders.

Right from the conceptualisation of the program, through the 'maturation phase,' there has been emphasis on introducing and strengthening global best practices of project design, implementation, monitoring and evaluation, community engagement, as well as environmental and social safeguards across all projects in the program. The CITIIS Technical Assistance—a cohort of 11 practitioners with multi-disciplinary expertise have been mentoring the 12 Smart City SPVs to refine project quality in line with CITIIS principles of participation, integration, and innovation. With a strong emphasis on new strategies for partnerships and collaboration and enhancing institutional capacities for implementing projects, these experts have identified and contributed a vast number of global good practices to address a variety of urban challenges. Apart from the technical assistance, the PMU has prepared an exhaustive inventory of good practices in the program.

This resource book comprises nine good practices in Social and Organisational Innovation in Low Income Settlements from different regions of the world but majorly from different parts of India, shortlisted and documented in detail from the inventory prepared in the CITIIS program. CITIIS shortlisted good practices for their specific characteristics, aligning with the values propagated by the program.

- 1. Inclusion** - Projects that targeted infrastructure creation in disadvantaged regions (equity and territorial cohesion), vulnerable communities (service access for all) and for the poorest (financial inclusion).
- 2. Innovation** - Projects that include measures that apply an approach beyond the common practice on improving conditions in low income settlements.
- 3. Governance** - Projects that target effective sectoral governance (planning, financing, management rules) for better coordination and participation; sound technical choices to boost local economies at a reasonable cost and over the long term (resilience).
- 4. Sustainability** - Projects that were designed to ensure safety and maximise the positive impacts and use local materials to mitigate the negative impacts on the environment.
- 5. Physical Infrastructure Development** - New infrastructure creation and making changes to existing infrastructure, specifically using community resources, smart education tools and techniques, makeshift structures (cost effectiveness)



**Mumbai**

Nomadic Design Museum,  
Dharavi

**Trondheim**

Planning by Communities



**Nairobi**

Community-Based Waste  
Management



**Mumbai**  
Promoting Safe Communities



**Delhi**  
School Education Reforms



**Gujarat**  
Building as Learning Aid (BaLA)



**Agra**  
Water Treatment and Health Plan



**South Korea**  
SMART Education



**Kerala**  
Kudumbashree Mission



**Karnataka**  
Hippocampus Learning Centre



**Tamil Nadu**  
Dharmपुरi Primary Health Centre



**Bali**  
Green Schools Programme



These good practices are rooted in local context and participatory planning that can effectively support decision makers in a greater uptake of innovative approaches to transform low income settlements. Listed below for quick reference:

1. **Kudumbashree**-a women empowerment and social innovation scheme, Kerala, India
2. **BaLA (Building as Learning Aid) Project** – innovative learning experience for school children, Gujarat, India
3. **Promoting Safe Communities** – participatory mapping with children, Mumbai, India
4. **Nomadic Design Museum** in Dharavi by Local Craftsmen, Mumbai, India
5. **Compound Model** of Water Treatment Plant and Health Plan in Slums, Agra, India
6. **Smart Education** Interventions in Schools, South Korea
7. **Hippocampus Learning Centres**, Karnataka, India
8. **Community-based Waste Management** for Environmental Management and Income Generation in Low-income Areas, Nairobi, Kenya
9. **Planning by communities** - The case of Svartlamon, Trondheim, Norway
10. **Primary Healthcare Center** - Dharmapuri, Tamil Nadu, India
11. **The Green School Programme**, Bali, Indonesia
12. **Education Reforms** in Delhi Government Schools, Delhi, India

# Kerala, India

## *Kudumbashree - a women empowerment and social innovation scheme*



*A meeting of Kudumbashree members in progress. Picture Credits: K.A.Martin, The power of Kudumbashree, The Hindu.*

### Summary

Kudumbashree, a word that means 'prosperity of the family' in Malayalam is a 'poverty eradication and women empowerment' mission undertaken by the government of Kerala. The mission commenced in 1998 with an aim to mainstream gender in local development processes through a three-tiered community network of women formed at a neighbourhood level, at the ward level, and at the community level. The first tier

of the network, the Neighbourhood Groups (NGs) or *Ayalkootam*,<sup>1</sup> in the local language, consists of about 10-20 women. The second level, consisting of two or more NGs, usually exists at the ward level is known as the Area Development Societies (ADS), which are affiliated to the local government's level as the Community Development Societies (CDS). The mission supports projects that empower women across the following verticals:

#### Key Values:



Inclusion



Governance



Innovation

<sup>1</sup> Jacob, A. T., & Sebastian, D. J. Role of micro credit organizations in the management of rural indebtedness in idukki district, kerala state.

- **Economic empowerment:** covers projects pertaining to collective/group farming, livestock rearing, local market development and the like.
- **Social empowerment:** covers projects focussing on identifying and rehabilitating the destitute/vulnerable/physically or mentally challenged population.
- **Women empowerment:** covers projects including educational programmes and programmes against women abuse/violence.

The three-tiered community network, formed, operated and monitored by the women focuses on connecting the local self-government institutions such as the *gram* (village) panchayats and

municipalities for conception, preparation, and implementation of local area plans, anti-poverty plans, while also mainstreaming gender components in developmental plans. In addition, the network also aids the local governments in identifying beneficiaries for various central and state government's local welfare programs.

### Evolution of the Kudumbashree Mission

The state of Kerala fought bouts of poverty starting from 1973-74 where 59.79 per cent of the population lived under poverty, while the corresponding national figure was 54.88 per cent.<sup>1</sup> Although the rates of poverty dropped to 25.43 per cent in 1993-94, lesser than, the national figure of 35.97

Timeline	Program milestone	Coverage
1987-88	Community Development Societies (CDS) evolved from Urban Basic Services sponsored by UNICEF, Government of India, and Government of Kerala	Implemented in 13 towns of Kerala in Ernakulam and Alappuzha district.
1991-93	CDS was renamed as Urban Basic Services Program (UBSP) which was later turned into a Community based Nutrition Programme (CBNP), implemented by UNICEF. THE CBNP later evolved into the Alappuzha Model, which was implemented across 36 wards of the Alappuzha Municipality	Implemented in Alappuzha to improve the health of poor women and children. About nine risk factors were identified through UNICEF survey. Any family that is identified with four or more identified risk factors is classified as poor.  The Alappuzha model was inaugurated and implemented in 1993.
1994 - 95	The Alappuzha model was converted into the CDS system.	The CDS system was implemented across 58 towns in Kerala.
1995-96	The Kerala Municipal Act was amended and the Kudumbashree programme was included in the state budget.	The amendment provided a legal framework for decentralised governance.
1998-2002	Kudumbashree Mission was officially launched in 1998 and was implemented across 891-gram panchayats by the end of 2002.	The then prime minister Shri A.B. Vajpayee inaugurated the mission in the Malappuram, Kerala
2002 - present	Kudumbashree	The Kudumbashree model of social and organisational innovation won several accolades and was listed as one among the 15 best practices in India in the UN Habitat Global Practices document.

*Historical evolution of the Kudumbashree Mission. Table by Jacob John, A study on Kudumbashree project, A poverty eradication programme in Kerala: Poverty, Impact and lessons for other states, Kerala Development Society.*

per cent, the level of poverty in the state is still considered significant.<sup>2</sup> In response and to combat the issue, a special task force was formed in 1997 aiming to completely eradicate poverty in the state within the next decade. Drawing from the 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendment Acts,<sup>3</sup> which stipulated devolution of powers to the local governments – the third tier of governance in India, distinct in itself from the central and state governments, a State Poverty Eradication Mission (SPEM) was established. The SPEM became fully operational in 1999 under a new name—The Kudumbashree Mission. The Mission currently functions under the Department of Local Self-Government of the Government of Kerala.

### Institutional setup

The Kudumbashree mission mainstreams gender in local development processes through a three-tiered community network of women formed at a neighbourhood level, at the ward/area level, and at the community level. The first tier of the network, the Neighbourhood Groups (NGs), consists of about 10-20 women. The second level, consisting of two or more NGs, usually exists at the ward level is known as the Area Development Societies (ADS), which are affiliated to the local government's level as the Community development societies (CDS).

The lowest tier constitutes the Neighbourhood Group consisting of 20-40 women members selected from poor families. This group convenes on a weekly basis where issues/problems faced by the group members are discussed, along with suggestions for improving the current situation. Additionally, on certain occasions government officials preside over the meetings to explain newly induced policies/programs that could help benefit the women on implementation. In each of the neighbourhood groups, from among the poor women, five volunteers look after various functional activities within the groups.

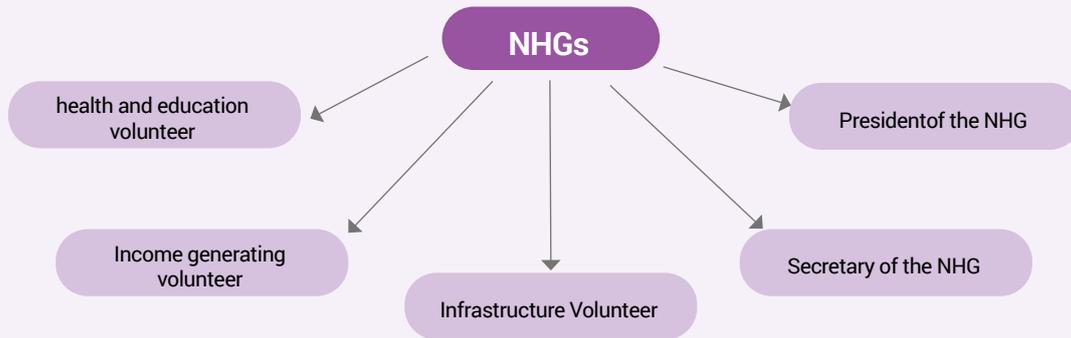
- **Community health volunteer** looks after the convergence of various health and social welfare programs undertaken by the local government. The volunteer also monitors various health-related aspects of the group members including children and the aged.
- **Income generation activities volunteers** undertake training imparted by NABARD after which the volunteers carry out the collection, consolidation and maintenance of books of accounts and registers in connection with thrift related activities of the group.
- **Infrastructure volunteer** generally works on tackling various issues occurring due to lack of infrastructure, including exclusion and backwardness with the help of various ongoing governmental programmes and liaising with local government officers.
- **Secretary** of the group records the proceedings of the meeting and makes necessary arrangements according to the needs of the team members.
- **President** chairs the weekly meetings and impart necessary leadership skills and guides the group members as and when required.

Area Development Society, the second tier of the mission, is normally formed at the level of panchayat/municipality by federating about 10-15 NHGs and functions through a general body and a governing body. The general body consists of a President, Secretary and 3 sectoral volunteers chosen from the federated Neighbourhood groups. The governing body on the other hand constitutes a President, a Secretary and five members elected from among the general body. In case of gram panchayat, the member of the respective ward becomes the patron of the ADS, while in the case of municipalities/corporations, a separate monitoring and advisory committee is constituted with ward councillors as Chairperson. One of the important features of the ADS is its linkages with the local government to ensure the activities of the NGs are in tune with the policy framework of the mission.

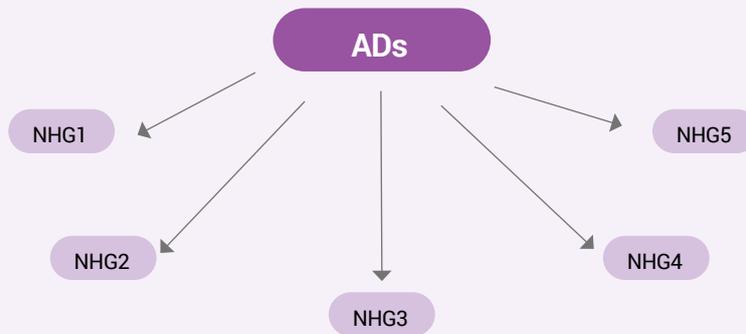
2 State Planning Board, Thiruvananthapuram. (2018). Economic Review, Kerala. Accessed on 16 July 2021. Available at: <https://spb.kerala.gov.in/economic-review/ER2018/index.php>

3 The 73<sup>rd</sup> and the 74<sup>th</sup> Constitutional Amendment Acts, 1992 enjoin upon the states to establish a three-tier system of Panchayats at the village, intermediate and district levels and Municipalities in the urban areas respectively. States are expected to devolve adequate powers, responsibilities and finances upon these.

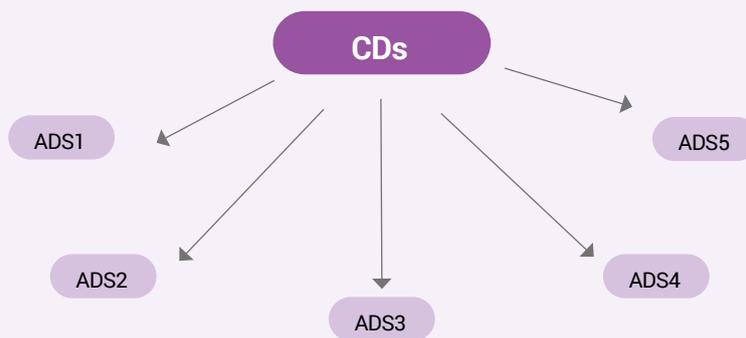
## NEIGHBORHOOD GROUP



## AREA DEVELOPMENT SOCIETY



## COMMUNITY DEVELOPMENT SOCIETY



### CDs is split into 2 parts

1. General body consisting of Ads representatives.
2. Executive Committee – elected representative of all Ads

*Institutional setup of the Kudumbashree Mission. Picture credits: Jacob John, A study on Kudumbashree project, A poverty eradication programme in Kerala: Poverty, Impact and lessons for other states, Kerala Development Society.*

Community Development Society is a registered body under the Charitable Societies Act and is formed by federating various ADS at the panchayat/municipal/corporation level. Similar to the ADS, CDS also has a general and governing body. General body consists of chairpersons and the governing body members of ADS along with resource persons and officers of the local body who are involved in implementing various poverty alleviation and women empowerment programmes. The governing body consists of the President elect, Member Secretary/project officer of urban poverty alleviation programmes and five selected committee members. The President of the gram panchayat is the patron of the CDS. The standing committee Chairperson (welfare), all women members of the panchayats and the Secretary of the gram panchayat are ex-officio members of the CDS. The Block Panchayat member/ Members of the respective Block division/ divisions are also ex-officio members of the CDS. A monitoring & advisory committee at municipality/corporation level is constituted with Mayor/Municipal Chairperson as Chairperson and the Municipal Secretary as the convener.

### Stakeholder working and relationships

The members of the neighbourhood group elect a five-member volunteer committee (president, secretary, community health volunteer, income generation volunteer, and infrastructure volunteer) for administrative purposes. The NGs meet weekly at the house of a member on a rotational basis. The ADS, on the other hand, consists of volunteer committee members from all affiliated NGs. This general body elects a governing body of the ADS consisting of a president, a secretary, and five members. The ADS works in association with the ward members of the local self-government institution. These societies meet every month to supervise the activities of the NGs and to provide relevant guidelines to them.

The CDS, consisting of all ADS in a village panchayat or an urban local body, are the link between the local self-government institutions, the three-tiered set-up of the Mission, and the government. The CDS also has a general body and a governing

body. The general body consists of the ADS' governing body members. They meet every three months to discuss and evaluate the activities of the Mission in a village or a municipality. This general body elects a governing body comprising a Chairperson, a Vice-Chairperson, and seven members for the day-to-day administration of CDS.

At the government or the bureaucratic level, there are district coordinators and other officials. A senior bureaucrat acts as the Executive Director of the Kudumbashree Mission.

### Distinct features of the Mission

The three-tiered structure of the mission has two distinct features. The first involves volunteering by women individuals and civil society groups to share resources, extend mutual self-help, and undertake community ownership of local affairs. Additionally, the groups also contribute towards the development of their community by participating in mapping local resources and planning activities.

The second feature involves the local government's focus in organising, supporting, and funding the entities. For this, the Department of Local Self-Government directs, monitors, and supervises the mission. On the other hand, the Government of Kerala, funds the Mission together with the support of the National Bank of Agriculture and Rural Development (NABARD). Even while the Mission is monitored by a designated governmental department, the activities and the functioning of the NGs, ADS, and CDS of the Mission are largely autonomous and work in synchronisation with the local self-governments where they operate.

### Operations of the CDS

Women avail thrift and microcredit through deliberation and negotiation in the weekly meetings that occur at the NGs level. The network also involves income-generating activities through agriculture or micro-enterprises which can be jointly run by members of the network. As a supporting body to the NGs, the CDS acts as a liaising body availing bank loans for the members/groups. In this regard the network is a huge help to the local government, where they



*Finding livelihood through Geriatric Care: Success Story of a Harsham Geriatric Care executive of Kudumbashree mission. Picture credits: Kudumbashree Thiruvananthapuram. (2019). Kudumbashree: Success story of a Harsham Geriatric Care.*

prepare context-specific 'demand plans,' while utilising bottom-up approaches integrated into the CDS Action Plan.

The CDS also facilitates capacity-building activities through training and certain knowledge dissemination activities to women so that they can assume leadership roles. The three-tiered network thereby helps in empowering women and generating awareness around gender-related, initiatives that the central and state government implements.<sup>3</sup>

### Gender mainstreaming and poverty alleviation

The Mission considers women empowerment and local community development central to poverty alleviation, thus restricting membership of the Mission to women. The membership follows a 'one family, one member' policy. The Mission also allows forming 'Special Neighbourhood Groups' where persons with disabilities and other disadvantaged groups such as people battling AIDS, or queer persons

can participate in the groups that they are comfortable in.

### Impact

The mission hosts over 4.3 million women members, comprising 291,507 NGs, 19,489 ADS and 1064, CDS. Until 2021, it has collected around INR 47.52 billion as thrift which has led to the formation of over 2600 small-scale enterprises managed by the members.<sup>4</sup> About 99.5 per cent members of the Kudumbashree Mission reported that their morale and confidence have increased substantially. According to 92.1 percent of respondents, the members have acquired skills, knowledge, confidence, and leadership qualities. The mission also works as the National Resource Organization for the National Rural Livelihood Mission launched by the Government of India in 2011, through which it provides technical and training support to eradicate poverty and support other livelihood missions in various states in India.<sup>5</sup> The 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendment Acts have mandated reserving

4 Kudumbashree, State Poverty Eradication Mission, Government of Kerala. Available at: <http://www.kudumbashree.org/pages/518>.

5 Kudumbashree National Resource Organization May 2014- August 2015. (2015) Thiruvananthapuram: NRLM, Government of India and Kudumbashree, Government of Kerala, October 2015.



*Kudumbashree volunteers preparing grocery kits for families during the Covid-19 pandemic. Picture Credits: Dr.M.P.Jayesh and Shrvan M.K, How is Kerala's Kudumbashree model helping to combat the pandemic?, The Feminism India.*

seats for women in local self-government bodies and thus the mission has become a training, capacity building, and on-ground recruitment enabler for women's entry into democratic politics.<sup>6,7</sup>

### Learnings

The Kudumbashree Mission has tapped into the potential of low-cost, social, and organisational innovation. The Mission has now become a part of a 'new regime of empowerment' that has emerged to support the state in providing for the vulnerable and marginalised. It reconfigures the role of the state into that of a 'facilitator' of the self-help-centered welfare policy, by mainstreaming the role of women in development.<sup>8</sup>

The Kudumbashree Mission is a demonstrative project because of its socially representative leadership and the accountability it provides to women collectives. Women not only innovate together through the thrift and credit system, but they also own small ventures that they create through the processes, directly putting them in leadership positions. The mission has not only given women broader visibility in public spheres but has helped them to be active participants in the local development and political processes.<sup>9</sup> This has helped them in gender-sensitising developmental processes and thereby the public sphere as we know it, in Kerala. This 'Made in Kerala' model can be implemented across the country, provided that it is implemented with the same secular and gender-sensitive spirit.

- 6 P Sainath. (2016). 'Kudumbashree' Dominates Kerala Local Polls. Accessed on 16 June 2021, Available at : <http://www.thehindu.com/opinion/columns/sainath/lsquoKudumbashree-dominates-Kerala-local-polls/article15788220.ece>
- 7 Williams, G., Thampi, B. V., Narayana, D., Nandigama, S., & Bhattacharyya, D. (2011). Performing Participatory Citizenship - Politics and Power in Kerala's Kudumbashree Programme. *The Journal of Development Studies*, Taylor & Francis (Routledge), 2011, pp.1. Available at: <https://hal.archives-ouvertes.fr/hal-00722234/document>
- 8 Devika, J., & Thampi, B. V. (2007). Between 'Empowerment' and 'Liberation' The Kudumbashree Initiative in Kerala. *Indian Journal of Gender Studies*, 14(1), 33-60. Available at: [https://kudumbashree.org/storage/files/vmz3j\\_devikaandthampikudumbashreearticlewithijgs.pdf](https://kudumbashree.org/storage/files/vmz3j_devikaandthampikudumbashreearticlewithijgs.pdf)
- 9 Williams, G., Thampi, B. V., Narayana, D., Nandigama, S., & Bhattacharyya, D. (2011). Performing Participatory Citizenship - Politics and Power in Kerala's Kudumbashree Programme. *The Journal of Development Studies*, Taylor & Francis (Routledge), 2011, pp.1. Available at: <https://hal.archives-ouvertes.fr/hal-00722234/document>

# Gujarat, India

*BaLA (Building as Learning Aid)*

*Project – Innovative learning experience for school children*



*A classroom developed with incorporation of BaLA elements. Picture Credits: Department of School Education and Literacy, Ministry of Education, Government of India.*

## Key Values:



Inclusion



Innovation



Physical  
Infrastructure  
Development

## Summary

BaLA (Building as Learning Aid) is an innovative project aimed at improving the quality of elementary education by investing in school building infrastructure and developing child-friendly, learning and fun-based physical environments. BaLA uses school spaces (e.g. classrooms, circulation spaces, corridors, steps, and the natural environment) and their constituent-built elements (such as floors, walls, ceilings, doors, windows, and furniture), to create a range of affordable learning environments that can be integrated into existing spaces and be actively used as learning resources, with or without the presence of teachers. The three-dimensional space also offers

a unique setting for a child to learn because students can have a multisensory experience, as opposed to only engaging in “flat” mediums, such as textbooks or black boards. It also offers the potential to make abstract concepts more concrete from the child’s perspective. For instance, dimensions, shapes, and angles in physical spaces are used to communicate basic concepts of science and mathematics to make learning a more enjoyable and memorable experience for children. In addition to supplementing conventional curricula, BaLA is encouraging teachers to rethink their teaching methods and explore different ways of aiding the child’s learning process.



Classroom walls, floors and furniture used to create a learning environment for children. Picture Credits: Department of School Education and Literacy, Ministry of Education, Government of India.

BaLA translates abstract theories of child development into an actionable pool of simple design improvements and innovations that can be implemented by principals, teachers, and engineers in new and existing schools to enhance their child-friendliness and educational potential. After undertaking a comprehensive research in problematic areas of comprehension in teaching and learning, spatial environment of schools, behavioural patterns, and social cultural background of children at homes, the BaLA project was developed by Vinyas, Centre for Architectural Research and Design with support from United Nations International Children Emergency Fund (UNICEF) in 2006.

The purpose of BaLA project is to investigate the uniqueness of three-dimensional space as a child-friendly learning resource for all children. It creates possibilities of creating experiential learning in all existing as well as new schools. Initiated by Sarva Siksha Abhiyan, Gujarat, the concept was implemented in more than 2,558 model schools in Gujarat during 2016-17, but has now been adopted by different states across the country. Vinyas has worked with the SSA team to develop BaLA initiatives in the states of Karnataka, Gujarat, Himachal Pradesh, Orissa, West Bengal, Jammu, and Kashmir, and Madhya Pradesh and

the Union Territory of New Delhi. BaLA has been implemented in approximately 1,200 schools in Himachal Pradesh, 1,000 schools in Gujarat, and 200 schools in Orissa.<sup>10</sup>

### Using school space as a medium of inclusive learning

BaLA project combines the concept of activity-based learning, child friendliness, and accessible learning materials for making school an exciting place to learn. At its heart, the project believes in the idea that school architecture can be a valuable resource for making the teaching-learning process creative and interesting for children. The project broadly focuses at two levels of intervention in schools:

- Developing School Spaces such as classroom, corridor, staircases and outdoor spaces to create varied teaching-learning environment
- Developing Built elements such as floor, wall, window, door, ceiling, and furniture in school spaces as teaching-learning aids

By developing school spaces and built elements, the project aims to make school buildings child friendly spaces and create conducive self-learning environments for

<sup>10</sup> Kabir Vajpeyi, Principal Architect and Founding Member of Vinyas. Available at: <https://www.ashoka.org/en-in/fellow/kabir-vajpeyi>



Amphitheatre inside the school premises used to teach children numbers and alphabets. Picture Credits: United Nations Public Service Awards Programme



A fully developed school with elements of BaLA project. Picture Credits: United Nations Public Service Awards Programme

children. Against the existing settings of developing circulation corridor spaces, natural environment, and traditional methods of teaching, the BaLA project proposed to develop school space as place for interaction, space for exploration and discovery, space for exploring three-dimension, space to play with mud and sand and space for adventures with informal elements such as tyres, and furniture.

The project involved design ideas for fun and learning to understand the physical world around us, importance of time, and complexity of numbers. For example, in schools across Gujarat, colour teasers are developed on fans, and windows, calendars are put on walls, and number lines in the form of train or caterpillar are drawn on window panes, and class walls to make it easy and fun experience for children to learn.



Primary School  
Sector 6  
Gurgaon

Children engaging in a group learning activity. Learning numbers through fun based activity on the floor. Picture Credits: Department of School Education and Literacy, Ministry of Education, Government of India.



BaLA Activity

A makeshift wall created to play hide and seek, learn measurements and shapes. Picture Credits: Department of School Education and Literacy, Ministry of Education, Government of India.



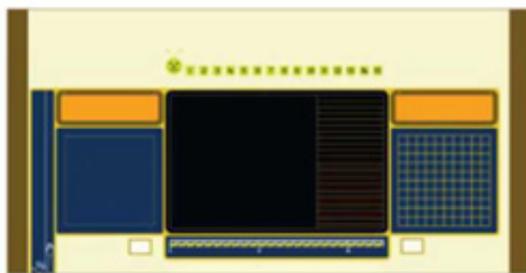
Playground elements are used to teach countries, monuments and world map to children. Picture Credits: Department of School Education and Literacy, Ministry of Education, Government of India.

Along with developing infrastructure for children, focus is given on teachers and other staff members inside the school. For instance, Vinyas, and Centre for Architectural Research and Design developed a teacher's manual<sup>11</sup> on how to integrate BaLA elements that can transform school infrastructure and learning experience for children. The manual helped teachers and school authorities to infuse different BaLA elements in School designs, curriculum and day to day activities. The manual prescribed using language,

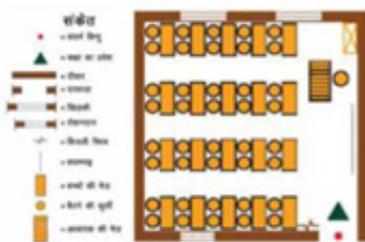
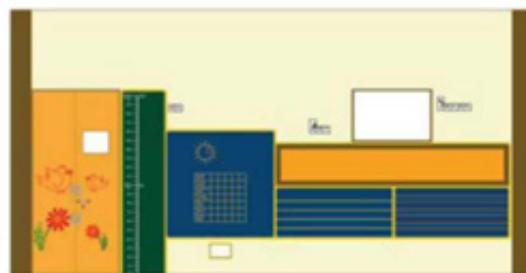
numbers, geometric shapes, colours, and natural environment as important and fun elements in elementary school education.

The state government of Gujarat organised orientation training for teachers and engineers on how to develop school spaces in accordance with teaching pedagogy. This helped in utilising the existing building elements and open spaces effectively inside the school at minimal cost while simultaneously improving child involvement and learning outcome.

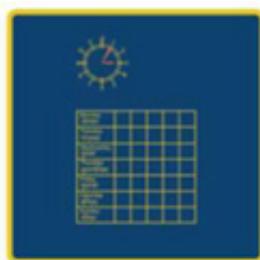
<sup>11</sup> Effectively using BaLA (Building as Learning Aid) in Elementary Schools, A Teacher's Manual, Conceptualised and Developed at: Vinyas and Centre for Architectural Research and Design. Available at: [http://www.edudel.nic.in/upload\\_2013\\_14/145\\_52\\_dt\\_03102013/SecA.pdf](http://www.edudel.nic.in/upload_2013_14/145_52_dt_03102013/SecA.pdf)



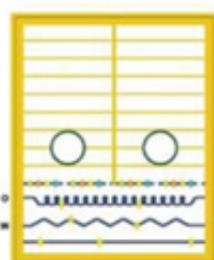
Walls of typical i-classroom design for learning for different classes



Embossed i-Map of Classroom



Engraved and embossed i-



i-Prewriting Aid on



i-Board Game - Snake & Ladder



Embossed Horizontal Unit i-Scale



Embossed Horizontal Dimension i-Scale

BaLA incorporated elements inside a classroom. Picture Credits: Education department, Gujarat.

### Inclusive learning through i-BaLA

The project went a step ahead by developing an inclusive learning environment for children with special needs (CWSN) through i-BaLA. This is developed in partnership with Blind People's Association Ahmedabad and Vinyas. Under i-BaLA, the idea is to provide accessibility of learning materials to children at all times. Resource rooms equipped with group hearing systems, visually impaired kits, mentally retarded kits and speech kits are set up and CWSN children use these systems as per guidance of experts available in resource rooms. Along with infrastructure support, physiotherapy, Psychotherapy, Speech therapy and other children related therapies are provided at resource rooms. Further, aids and appliances are also provided to the Orthopedically Handicapped (OH) and Hearing Impaired (HI) children.

### Decentralised and flexible way of implementation

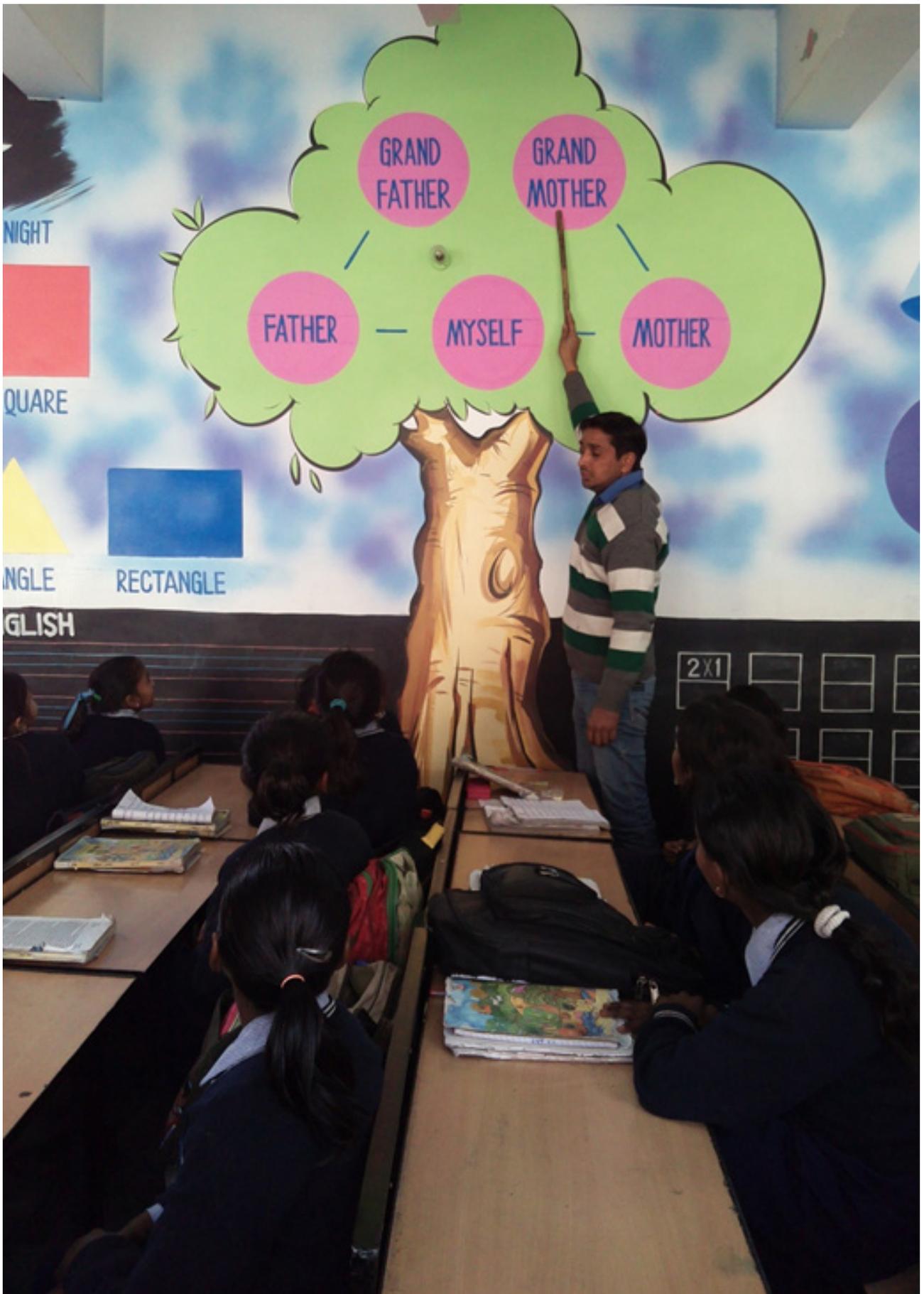
One of the significant steps forward in implementation of BaLA concept is establishing a decentralised decision-making mechanism that allows schools to meet their learning requirements in a flexible and organically emerging framework. For example, Chandigarh has implemented BaLA projects in 100 government schools since 2016-17 at the primary level. The project has helped to make classrooms more attractive, increase creativity and imagination power of children through pictorial and fun activities. This has aided in the utilisation of visual and pictorial materials in enjoyable learning and in creating a creative self-learning environment for children. The teachers are using classroom walls, floors, stair cases, windows, doors and ceilings as teaching aids. The students enthusiastically participate as they move through each of these spaces during different times of the day and not just learn inside the classroom.



School walls used as an effective building element for teaching children in Chandigarh. Picture Credits: Department of School Education and Literacy, Ministry of Education, Government of India.

Similarly, in the state of Gujarat, different elements of BaLA project are used by different schools. For example, mystery walls, where children love to disappear and watch others from behind or play hide and seek games are put up inside the school premises. To understand the planetary orbits on ground, space around

a flagpole or pillar is used to understand the circular motion of planets and sun. The three-dimensional relationship of children where they acted as planets, and flagpole or pillar as sun, helped them to understand planetary concepts in an easy way.



BaLA project used in teaching learning process. Picture Credits: Department of School Education and Literacy, Ministry of Education, Government of India.



*Fun based activities conducted inside school premises. Picture Credits: Department of School Education and Literacy, Ministry of Education, Government of India.*

## Impact

Ever since the project's inception in 2006, BaLA has been able to bring tangible and visible changes to over 110,000 schools located in different parts of the country. The project has made a tremendous impact on the teaching environment for children, teachers and community members. By deliberately collaborating with government schools, VINYAS has been able to transform thousands of schools through the BaLA project. There has been an increase in enrolment ratio, attendance, and continuation of school education in children in government schools. After its introduction in the State of Gujarat under Sarva Siksha Abhiyan, the elements of BaLA project are now implemented across different states such as Haryana, Punjab, Chennai, and Sikkim. The state government of Gujarat has made significant progress in enrolling Children with Special Needs to schools. Till 2016, a total of 92,633 CwSN children out of 1,06,713 CwSN children in the age group of 6-14 years in Gujarat State, have been enrolled in different schools through i-BaLA initiative.<sup>12</sup> The project has not only changed the spatial elements in school, but has also led to changes in

behavioural patterns among children and overall social and economic development of communities.

## Learning

BaLA project focuses on an interdisciplinary approach to derive maximum educational value out of schools. The project does not view school as merely a structure or a building but a special place for children to learn and grow. The project through creative learning methods propels children to raise questions, explore innovative ways to answer and attempt solutions on their own. VINYAS collaborative effort by engaging with different stakeholder groups has been able to develop the school environment, a place of play and joy. The project provides a mechanism through easy, and innovative teaching methods that can be implemented anywhere across the country.

<sup>12</sup> BaLA Project – Assessment Report, Sarva Shiksha Abhiyan, Gujarat. Accessible at: [https://publicadministration.un.org/unpsa/Portals/0/UNPSA\\_Submitted\\_Docs/2018/2C34C593-52D6-415C-B05B-253941E37D0F/BaLA%20Project%20-%20Assessment%20Report.pdf?ver=1439-06-10-091517-077](https://publicadministration.un.org/unpsa/Portals/0/UNPSA_Submitted_Docs/2018/2C34C593-52D6-415C-B05B-253941E37D0F/BaLA%20Project%20-%20Assessment%20Report.pdf?ver=1439-06-10-091517-077)

# Mumbai, India

## Promoting Safe Communities – Participatory Mapping with Children



Hand-drawn maps such as this are winding up on the desks of urban planners across India. Picture credits: Sam Sturgis. (2020). Kids in India are sparking Urban Planning changes by mapping slums. Bloomberg

### Key Values:



Inclusion



Innovation



Governance



Sustainability



Physical  
Infrastructure  
Development

### Summary

Since 2014, United Nations Children's Fund (UNICEF) along with its partners Action for Children's Environments (ACE), Pratham Mumbai Education Initiative (PMEI), Youth for Unity and Voluntary Action (YUVA), and Committed Communities Development Trust (CCDT) have been engaged in 'Promoting Safe Communities' programme in three low-income settlements, located in one of the suburban localities in Mumbai. The project involves comprehending the vulnerabilities, respective coping mechanisms, and building resilience in

children living in the three settlements. The project focused on mapping vulnerabilities and resilience across seven dimensions – safety and security, protection, environment, health, education, play and recreation, and participation and empowerment. For doing this, sub-indicators were developed to understand risks as well as the existing protective factors in children's lives. Since then, the programme has been considered a demonstrative example of localised efforts to achieve the national commitments to the New Urban Agenda and the Sustainable Development Goals (SDGs).



Young map makers sketching out the changes they wish to see. Picture credits: Sam Sturgis. (2020). Kids in India are sparking Urban Planning changes by mapping slums. Bloomberg

## Background of the Safe Communities Programme

For centuries Mumbai has attracted migrants from across the country for work and livelihood purposes. Though the city presents multiple income generation opportunities for the people, the unprecedented growth in population has stressed the city's infrastructure, and has caused a divided diaspora—on one hand the city houses the richest population of the country—while on the other it houses 49.38 per cent of the city's population in slums.<sup>13</sup> The first Human Development Report<sup>14</sup> on Mumbai highlights the physical and social disparities between the slum and the non-slum populations, which impacts literacy, sex ratio, morbidity rate, family space, and mental health issues.

The Mumbai Suburban District consists of three administrative subdivisions. The district along with Mumbai City district and other suburban localities make up Greater Mumbai. The Safe Communities Programme was implemented in three slums – Shivaji

Nagar in R North ward, Rafi Nagar and the Resettlement and Rehabilitation (R&R) site of Lallubhai Compound in M East ward in the city. All the three settlements are located on untenable fringe areas of the city, where issues pertaining to liveability due to lack of proper sanitation, unguarded railway and road traffic, urban flooding, overcrowding, lack of safety and security systems exist extensively. Additionally, people across the settlements live in houses with no proper security of tenure and are at constant risk of eviction.

Identifying the young population that is highly impacted due to the socio-economic and infrastructural disparities, UNICEF aimed to develop safe communities by giving children a voice in the city development processes. Through the programme, UNICEF has encouraged kids and adolescents to use mobile technology or topography maps and markers to map environmental and health issues in and around their community.

<sup>13</sup> Census. (2011). Primary Census Abstracts, Registrar General of India, Ministry of Home Affairs, Government of India. Accessed on 18 June 2021. Available at: <http://www.censusindia.gov>.

<sup>14</sup> Vaidya, C., & Srivastva, S. (2010). Mumbai Human Development Report 2009, (Municipal Corporation of Greater Mumbai), 2009. Environment and Urbanization ASIA, 1(2), 229-229.



Household survey in Shivaji Nagar. Picture credits: Sam Sturgis. (2020). Kids in India are sparking Urban Planning changes by mapping slums. Bloomberg

### Institutional arrangements for implementation of the program

The programme evolved in conjunction with several partners and UNICEF to develop demonstrable, evidence-based models to integrate or mainstream the protection concerns of children in vulnerable urban areas.<sup>15</sup> The promoting safe communities programme involves three phases:

- **Phase 1:** Mapping risks and vulnerabilities of urban children in select slums in Mumbai
- **Phase 2:** Developing a safe community model at the ward-level with the participation of communities and local stakeholders
- **Phase 3:** Implementing and monitoring the roll-out of the safe community model

Phase 1 of the programme consisted of adopting a participatory approach to develop indicators and map the indicators across the seven dimensions pertaining to the safety and protection concerns of the children in the slums. The programme partnered with local NGOs that work with the community, children, and adolescent representatives from District Child Protection Unit (DCPU) and UNICEF state

offices. A team of young mappers and adult facilitators spent close to a month and a half traversing the slums to do a skeletal mapping of the settlement. It provided them the opportunity to understand the built fabric, the shape and culture of their community, the pattern of the streets, and the residential density.

Phase 2, on the other hand, involved data sorting, transcribing, and highlighting the places of interest to the focus groups as identified through the mapping exercise. This followed filling in specific details and community interests to identify the theme and the areas for intervention. The first-hand experience of living in the community and partnering with the local agencies, the community, and ward representatives in chalking out a safe community model/plan lead to the formation of a robust plan spanning across different sectors and locations within the community. The skeletal map including the identified localities for intervention and the type of intervention that was prepared by the community was then converted into a detailed map. Upon officially finalising the interventions with the local development authority, the UNICEF representatives, the

<sup>15</sup> Sam Sturgis. (2020). Kids in India are sparking Urban Planning changes by mapping slums. Accessed on 18 June 2021. Available at: <https://www.bloomberg.com/news/articles/2015-02-19/by-making-hand-drawn-maps-of-their-slums-in-india-kids-are-influencing-urban-planning-policies>

NGOs and the community themselves, phase three involved the implementation and monitoring activities of the safe community model where UNICEF made the children and the community as partners to work on identified interventions collectively.

## Impact

The programme aimed to respond to the hazardous living conditions in three large scale low-income settlements that affect children's overall health and safety. Through various kinds of physical and softer interventions, children were made partners in envisioning improved quality of life in their neighbourhoods.

For instance, in Shivaji Nagar, an 'unsafe' open ground being used by the community as a dumping site and frequented by the young people for substance abuse was converted into a playground utilising advocacy planning method, where the interest of the community is prioritised for planning. Similarly, the Lallubhai Compound and other nearby settlements in close proximity to the railway line had no safe means of passage. To tackle the issue, a pedestrian overbridge was recommended to be added to the Master Plan of Mumbai (2014-2034). Additionally, to identify the lack of child support and protection groups, certain efforts are being made through the existing *chawl* committee structure within each of the communities to form a community-level child protection committee (CCPCs). To this extent, structured sensitisation and capacity-

building programmes on child protection, targeting children, parents, youth, local community-based organisations, anganwadi workers, local police, school teachers, factory owners, and municipal representatives.

## Learnings

Urban programmes focusing on children-led development have been proven to uplift the current living scenarios of not just the children, but communities as well, since they hold a spatial perspective of the community that is exceptionally unique from the adults or the aged. Identifying the positive outcomes of child-led development initiatives, UNICEF along with its partnering agencies has piloted a project that not only mixed child activism with fun, but also helped children in developing interpersonal relations, creativity, sensitivity to their surroundings and nurture planning and leadership skills, all with an underlying agenda to improve the surroundings they live in. When replicated to other Indian cities, the programme proves to be a beneficial and a refreshing change to the top-down developmental practices carried by administrators and various planning agencies in the country. Considered as the ideal example of a collaborative and community-oriented participatory mapping involving children in the three settlements, the project highlighted the urgent need for inclusive policies in the urban development scenario to ensure that SDGs for urban poor children can be met, across the seven dimensions.



*A child sneaking out to play in the dumping ground in Rafi Nagar. Picture credits: Sam Sturgis. (2020). Kids in India are sparking Urban Planning changes by mapping slums. Bloomberg*

# Delhi, India

## Education Reforms in Delhi Government Schools



A newly inaugurated school by Delhi Government in one of the rural villages in Delhi. Photo Credits: @DelhiGovtSchool Twitter handle, posted on 02.07.2021

### Key Values:



Governance



Innovation



Inclusion

### Summary

Delhi Government schools have become a national highlight with state government advocating for 'Education First' in its political campaigns and budgetary allocation. Since 2015, the education systems have been significantly altered in the government schools of Delhi. The government did a major budgetary allocation to education, introduced capacity building programmes for teachers

and principals, equipped schools with improved and modern infrastructure, and provided innovative learning methods for children. Though the targets set by Delhi Government for revolutionising school education in Delhi remains to be achieved completely, it has made some progress in providing quality, equitable, and inclusive education for all sections of the society.



Education Minister inaugurating refurbished staff room with improved infrastructure for teachers. Picture Credits: @DelhiGovtSchool Twitter Handle



Newly refurbished classrooms with colorful and comfortable desks for children. Picture Credits: Twitter Account, Delhi Govt School Pictures @DelhiGovtSchool Twitter Handle, posted on 30.06.2021.



Government Sarvodaya Vidyalaya in Delhi equipped with new staff rooms for teachers. Picture Credits: @DelhiGovtSchool Twitter Handle, posted on 02.07.2021.

## Infrastructure improvement in schools

Considering the dilapidated condition of schools and classrooms, Delhi government focused on creating a suitable learning environment of children by investing in infrastructure development. Quality of learning spaces were created through addition of new classrooms, construction of schools, and upgrading infrastructure facilities such as toilets, playgrounds, laboratories and sports facilities. The government believed that physical environment of the school has a direct bearing on motivation, engagement and self-respect of students to come to the

school. Over 25 new schools were built that included the construction of 8000 new classroom. In addition, over 54 model schools are identified to be upgraded with better infrastructure such as SMART classrooms, sports facilities, and modern laboratories.<sup>16</sup> Since then, teachers are provided with a tablet to ease reporting and administrative duties, and streamline responsibilities for better coordination and investment in teaching works. In addition to the infrastructural support, the State government provides at least 5 lakhs to each government school annually, to invest in infrastructure activities or academic learnings.

<sup>16</sup> <https://thebastion.co.in/politics-and/the-4-pillars-of-delhis-school-education-reforms/>



*Delhi Government School Principals attending leadership training at Cambridge University. Picture Credits: @DelhiGovtSchool Twitter Handle, posted on 01.02.2017.*



*Capacity Building and Interactive sessions as part of leadership training at Cambridge University. Picture Credits: @AtishiAAP Twitter Handle, posted on 01.02.2017.*



Teachers participating in group activities and learning sessions at Singapore University. Picture Credits: @AtishiAAP Twitter Handle, posted on 29.08.2017.



Teachers training programme for Delhi Government School teachers at Singapore University. Picture Credits: @AtishiAAP Twitter Handle, posted on 29.08.2017.



Delhi Government organising an International conference on Reimagining Education through Happiness Curriculum on the International Day of Happiness. Picture Credits: @vishaltalreja Twitter Handle, posted on 20.03.2021.



Celebrations of International Women's Day at School of Excellence, Kalkaji. Picture Credits: @soekalkaji Twitter Handle, posted on 08.03.2021.

### Capacity building of principals and teachers

One of the key pillars of education reforms in Delhi is the focus on strengthening leadership qualities, teaching methods, and increased sense of ownership to develop schools as great centres of learning. This is shift from earlier model where teachers and principals were often occupied with administrative and bureaucratic tasks. To provide a wider learning experience and focus on skill improvement, in-house session as well as international education

trips are organised for teachers and school principals. The sessions are organised in a cluster of 10 heads of schools, facilitated by one of the senior Head of School trained as a core facilitator. This provided a unique platform to engage in peer learning. Over 500 principals have attended sessions at IIM Ahmedabad and Lucknow on different aspects of school leadership, and over 102 Head of Schools have attended an educational program at Cambridge University and 22 at schools in Finland to understand school education model in these two countries respectively and



Teachers interacting with parents and students in MegaPTMs. Picture Credits: @AamAadmiParty Twitter Handle, posted on 12.07.2019.

practices that can be implemented in Delhi.

Further, a mentor teacher program conceptualised in 2016, is a unique addition to provide on-site learning support to other teachers in various schools. Mentor teachers after attending mentoring course at National Institute of Education (NIE) Singapore to augment their observation skills, content understanding, and pedagogical approach have helped teachers to create supplementary learning material, and facilitate workshops for children.

Special focus is given on improving the learning methods for Children with Special Needs (CWSN). Department of Education (DoE) in collaboration with NGOs working in areas of special education trained special educators of Delhi Government schools to develop Individualised Education Plans (IEPs). The training workshops better equipped teachers to gain an insight into each disability and work with students with different needs.

### Improving the learning gaps of children

State government of Delhi undertook various programmes and initiatives to improve learning outcomes and build foundational skills of children. *Chunauti* is

one such initiative launched in year 2018 that aimed to bridge the learning gaps of over 9.5 lakh students of classes 6, 7 and 8. The aim is to have all students in upper primary classes be able to read, write and do basic maths, and attain learning outcomes appropriate to their grade level. Based on the foundational learning level, students were grouped into three sections, and different pedagogy and content was used to strengthen learning abilities across all the groups in all subjects. As a result of the initiative, pass percentage in class 9 improved from 52 percent in 2015-16 to 57 per cent in 2017-18,<sup>17</sup> and numerical skills rose from 56 to 73 per cent by 2019.<sup>18</sup> Similarly, '*Reading Melas*' were organised under *Chunauti* by the School Management Committees to improve the reading skills of children on weekends.

In addition to the prescribed NCERT textbooks, an idea of '*Pragati Series*' was started which helped in generating additional supplementary reading material using simple language and illustrations. The content for *Pragati* is created by teachers along with Mentor Teachers and subject experts from the District Institute of Education and Training (DIET).

The Happiness Curriculum inaugurated by His Holiness the 14<sup>th</sup> Dalai Lama in 2018, is another noteworthy initiative

17 [http://www.edudel.nic.in/welcome\\_folder/delhi\\_education\\_revolution.pdf](http://www.edudel.nic.in/welcome_folder/delhi_education_revolution.pdf)

18 <https://thebastion.co.in/politics-and/the-4-pillars-of-delhis-school-education-reforms/>



MegaPTM organised by Delhi Government in Sarvodaya CoEd Sr Secondary School, Safdarjung Enclave. Picture Credits: @AamAdmiParty Twitter Handle, posted on 12.07.2019.

to help students lead happier lives and engage in meaningful learning process. The curriculum was designed over a period of six months, by a team of education consultants, Teachers, Teacher Educators, Mentor Teachers from the Delhi Government, NGOs and individuals. As part of the curriculum, there is happiness period every day that begins with mindfulness practice, followed by a story or activity and student-led discussions. Students from class nursery to 8<sup>th</sup> engage in critical thinking, express thoughts and communicate with their teachers and peers to build meaningful relationships.

The Delhi Government launched the 'Schools of Excellence' programme in 2018 to recognise and celebrate the exceptional outcomes generated by high-achieving schools as a result of these measures. The government's declared objective is to turn all Delhi schools into schools of excellence, which will only benefit students' overall development in the long term.

### Strengthening school community through parents-teacher bonds

In order to bridge the gap between parents and teachers, Delhi government focused on two key initiatives - re-activating of School Management Committees (SMCs) and hosting regular Parent-Teacher Meetings (PTMs). Empowering SMCs through free and fair election, regular training with help of NGOs and SMC App helped to better manage the government schools, and provide a platform for parents to

communicate with Head of Schools and teachers. School Management Committees (SMCs) led organisation of Mega Parent Teacher Meetings (PTMs), reading melas and streamlining admission process for students. Mega PTMs are conducted across all government schools on same date and the event is highly publicised through media channels such as radio, and newspapers. Teachers discussed student attendance, punctuality, learning levels and role parents can play in improving learning levels of children. This effectively helped to bridge communication gaps and develop a strong relationship between parents and teachers.

### Impact

Delhi government's school educational reforms is a cumulative effort of various stakeholder groups over a period of time to transform the education system in government schools. Following key principles of decentralised governance, collaborating and coordinating across different departments and schools, providing autonomy to heads of schools in management, engaging in peer learning sessions and infrastructural support, has led to significant improvement in learning levels of children. Strong political will, with education ministers visiting schools, ensuring high levels of transparency and increased budgetary allocations to education has helped to turnaround the image of government schools, and improve education levels especially amongst the lower- and middle-income group of society.

# Mumbai, India

## Nomadic Design Museum in Dharavi by Local Craftsmen



Nomadic Design Museum in Dharavi setup by the local craftsmen. Picture Credits: Design Bloom (2016). Design Museum Dharavi.

### Summary

The mobile museum is the brainchild of an Amsterdam-based curator-artist couple, Amanda Pinatih and Jorge Mañes Rubio, in partnership with URBZ, a Mumbai-based urban research collective that focuses on using design as a tool to promote social change, to create a meeting point for cultural exchange, and innovation, directly challenging the negative perception of informal settlements around the world. The project aims to tap into the local resources and local craftsmanship to establish the

exhibitions with themes reflecting the everyday life of the residents of Dharavi – Asia's largest 'slum' spread over 3 square kilometres in the heart of Mumbai and home to over one million inhabitants.

### Understanding the context

Dharavi, known for its local finesse is an informal settlement that is often bustling with people, be it national or international tourists or local collaborators. While some buy local crafts as souvenirs, others especially come to Dharavi to request and

#### Key Values:



Governance



Innovation



Inclusion

manufacture all kinds of goods. The locally crafted products are then exported as far as South Africa or the United States of America (USA). Due to the high density of the population and the insecure tenure of its land, changes in Dharavi are constant. This user-generated neighbourhood is reinventing itself on a daily basis, which constitutes one of its many peculiarities.<sup>19</sup>

### The Nomadic Design Museum

Inspired by the fact, the Amsterdam-based artist Jorge Manes Rubio, and art critic and curator Amanda Pinatih collaborated with local community-based organisations to create a nomadic exhibition space that operates as an exhibition venue and a meeting point for cultural exchange and innovation. The museum travels on a pushcart, similar to those used by locals to distribute and sell all kinds of goods and products. The Design Museum Dharavi was created as an experimental project to explore the impact that design may have on the perception and future development of areas such as Dharavi.

### The implementation mechanism

Traveling on carts, the museum minimises the dependence on having a physical space for the museum. The pioneers of the project, in the initial stages, conducted innumerable meetings with the local craftsmen such as potters to understand the process of making the product, daily production, and financial and social extent of current collaborations in order to establish clear cut goals and objectives. The museum on wheels took shape once the products were conceived and a local plan was in place with various craftsmen and tradesmen.

The exhibition cum sale was envisioned with a particular theme that is relevant to the lives led by the people in Dharavi. Every exhibition has a different theme depending on the collaborators, location, season, or subject chosen as inspiration. The first theme of the museum was inspired by the quotidian – cups and saucers for tea or coffee, water containers, and brooms. The second exhibition featured a street cricket tournament, where richly hand embroidered

uniforms and stunning hand-carved wooden bats were not only displayed for sale but were also put into action right on the spot.

### Impact

Collaborating with the local craftsmen and tradesmen, although proved to be challenging in the beginning, the project picked up its pace once the local inhabitants saw its potential in gaining traction in the market. One specific collaboration with the Chauhan's to make water containers, created a pathway for innovation, where the makers worked towards creating innovative water filters that also kept the water cool. After the collaboration, the *Chauhans* were commissioned by private vendors and took the initiative further to modify the water coolers they created for Design Museum Dharavi, coming up with a product that was highly functional but at the same time introduced a completely new aesthetic.<sup>18</sup> The water purifier/cooler mechanism is one such example of many as to how the project impacted people, innovation and cohesion in a major way. This proved that when given the right time, space and resources, the makers innovated freely and enhanced their skills and productivity. The project discredited the misconception that the makers of Dharavi can only do repetitive manual labour and paved the way for local innovation which in turn helped increase cohesiveness and inclusivity in the social sphere.

### Learnings

The Nomadic Design Museum in Dharavi proves that communication with stakeholders is crucial for the success of social innovation. Seeking consensus and solutions through dialogue, must be prioritised even though it is a time-consuming activity. For the pioneers of the project, this meant sharing power, by taking a step back to enable the craftsmen to evolve and innovate in a safe and productive environment.

Creating networks with the craftsmen allowed new ideas to be brought onto the table. The networks did not just help in

<sup>19</sup> Design Museum Dharavi. (2016). Design Museum Dharavi. Accessed on 19 June 2021. Available at: <https://socialdesignlibrary.in/design-museum-dharavi/>



Museum on Wheels. Picture Credits: Design Bloom (2016). Design Museum Dharavi.



Display of crockery items at the museum on wheels. Picture Credits: Design Bloom (2016). Design Museum Dharavi.

finding funding sources and commissioned work, but also in contributing to the development of their own area. People came together to innovate and sell locally made and handmade products, effectively changing the way their communities are perceived to be. The museum on wheels

project is unique in terms of the dialogues shared, networks formed, sharing of resources and prioritising the need of the market that is unique to the community to find funding. The four elements could be replicated anywhere in the Indian cities, according to the context.

# Agra, India

## Compound Model of Water Treatment Plant and Health plan in Slums of Agra



Group mobilisation through participatory techniques. Picture Credits: CURE (2014). Compound model of Water, Health and Nutrition programme in slums of Agra, U.P. FEM Sustainable Social Solutions.

### Key Values:



Inclusion



Governance



Physical Infrastructure Development



Innovation

### Summary

Agra has 432 slums located within its boundaries, where over 50 per cent of the city's population resides. While Agra still struggles to maintain and provide basic services across the city, the slums in particular have deteriorated in terms of housing, living conditions and both social and physical infrastructure. The lack of basic services, water supply, sanitation and waste disposal mechanisms in slums has been a major reason for poor quality of life and productivity. To this extent, Center for Urban and Regional Excellence (CURE), in partnership with Agra Nagar Nigam (ANN) and District Urban Development Agency (DUDA) have devised to work on slum upgradation through the Citywide Slum Upgrading Plan, where groups of women were mobilised utilising participatory methods to comprehend, map, and draft the interventions for the plan. Of all the

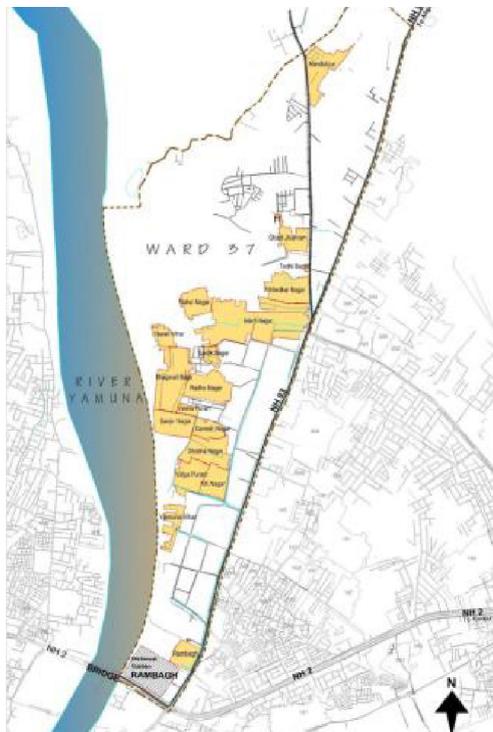
slums in the city, ward 37 in the Trans Yamuna area houses 18 slums that were witnessing deterioration in the saline groundwater levels and hence had to rely on private water tankers for their daily water needs, paying in excess for water. Lack of access to sufficient water has also made it difficult to address sanitation and health issues due to which, CURE in partnership with FEM sustainable solutions, also the funding agency prioritised water and health as an important need to be addressed. The project had three critical components:

- Water treatment plant set up as a community business enterprise
- Affordable health care service in the area to address non-water related illnesses among the poor.
- Build better nutrition practices by working with food and vegetable cart vendors in the area.

Out of the three projects, the water treatment plant and the affordable health care service projects have been discussed in this document.

### Compound model of water treatment plant

Ward number 37 in the Trans Yamuna region is located on the city's edge and has 18 slums/low income settlements within its boundaries that are unconnected to the Agra Jal Nigam (AJN), owing to locational disadvantages. The groundwater of the area is saline, with TDS levels over 5000, making it unfit for human, animal and agricultural consumption. Additionally, ground water too is deteriorating due to the presence of industrial pollutants leaching unchecked into the ground. As a result, people from the slums rely on private water tankers, often paying a hefty part of their incomes to afford basic services. Without access to sufficient water to address sanitation needs, the environment of the area too is getting degraded, impacting the overall health of the people. Setting up of the water treatment plant in conjunction with FEM Sustainable Solutions involved a series of processes beginning from



Location map of Ward 37. Map Source: CURE (2014). Compound model of Water, Health and Nutrition programme in slums of Agra, U.P. FEM Sustainable Social Solutions.

basic market research, a viable and inclusive business model, beneficiary and clientele identification, and operations and maintenance of the plant itself.

### Setting up the water treatment plant

Initially, in order to set up the plant, water samples from different groundwater sources were tested to identify the site for the plant. After conducting a primary test on the water using a TDS meter, a laboratory test was conducted to check for essential elements in the water. This led to the identification of an only treatable aquifer in the far end of the ward near Nehra ka Nagla, which was then selected as the site for the water plant. A small space was rented out, soon after which formal approvals were sought from the District Magistrate, also the chairman of the Food Supply Department at Agra for setting up of the plant. The only challenge that remained was the arsenic content in the water. This was eradicated when FEM purchased a water purification machine from Eureka Forbes, that was customised to treat all the groundwater elements.

### A viable and inclusive business model

CURE undertook a rapid market survey to measure the existing demand for water and the overall financial viability of setting up a water filtration park in the region. For this, certain parameters such as ground context, current drinking water sources, user perception of quality and affordability of water purchase were surveyed. Through the survey, it was deduced that over 30 per cent of the monthly earnings of a household were spent on procuring water from private sources. Additionally, it was found that collection of water takes about an hour to two hours and women are considered responsible for carrying out the chore. This not only has huge economic, social and health-oriented impacts that disproportionately affect women but also detracts their ability to generate income. Identifying the fact that women and children are the main beneficiaries for a water related project, CURE developed a business model that could help women earn their livelihood.

The women's self-help groups (SHG) that were formed during the planning phases of the City-wide Slum Upgradation Plan, were morphed into the Water Enterprise Group. Six group members from different SHG's in the ward federated themselves into an enterprise group, named 'Nai Asha Mahila Samuh' in order to manage the business. To ensure long term viability and profit making, a business plan was developed in conjunction with the Water Enterprise Group. The plan was drafted based on facts and information from various ground studies, water pricing plans, profitability and projected spending on maintenance. Monthly targets were then determined on the basis of the secondary research and a separate meeting with the family members of the group members was conducted to brief them about the overall project. In addition to this, they were briefed on the whole process of business along with the roles and responsibilities of CURE and group members for complete ownership and success of the business. They were oriented to the business model, forecasts that enabled them to come up with a business plan and supported them with skills to manage and operate the water plant business.

CURE then entered into a contract with the Water Enterprise Group or the Nai Asha Samooh with clear contributions, roles and responsibilities and obligations of all partners. The duration of the contract was for three years, which included the space for the plant and the provision and use of underground water utilising the submersible. Extensive civil works were undertaken for the installation of the plant throughout which the women's group participated and closely supervised the construction. Each member also contributed an initial start-up capital of INR 3,000 each deposited in a new business account.

### Communications and outreach

Eureka Forbes trained the women to operate the plant and made them responsible for its functioning, operating system, and regular maintenance. Social-livelihoods experts from CURE imparted training on bottle management, logbook

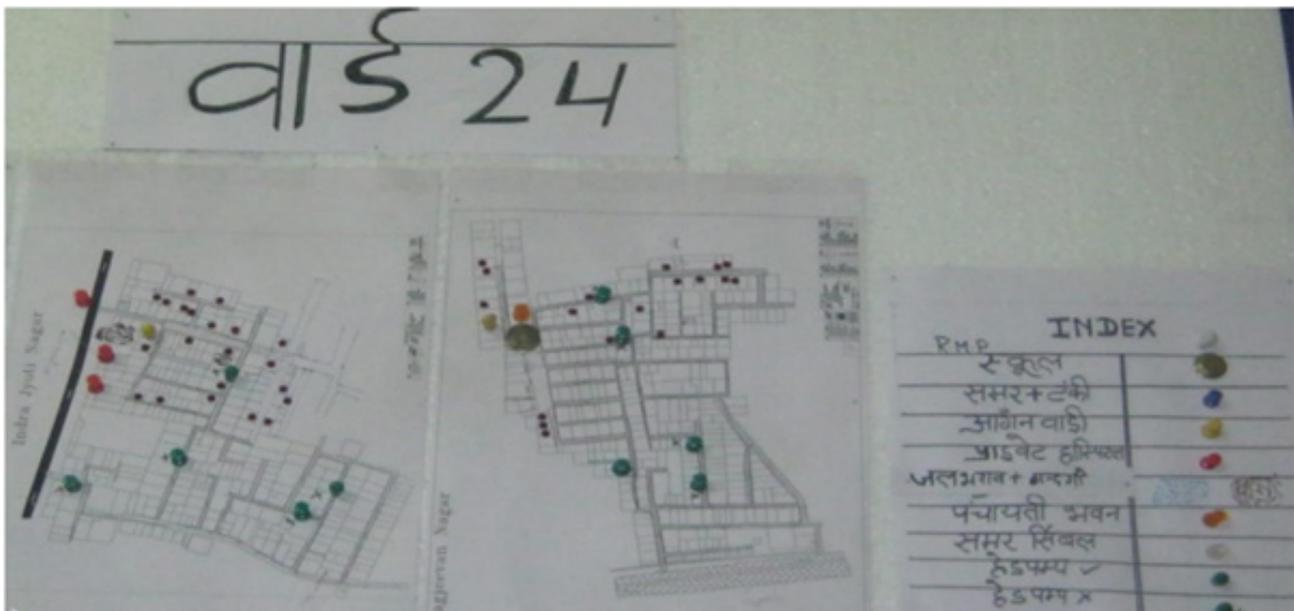
maintenance, accounts keeping, and client management. The group learnt to do water test demonstrations to convince clients of their product. The water plant was named 'Shudh Jal Agra' by CURE. To increase the client base, innovative marketing strategies were organised such as conducting street meetings in various settlements on the importance of access to safe water for health, setting up tea and lemon-water stations for free sampling and client making. Banners displays, leaflet distribution in the local newspapers, handouts were used to inform the community. Campaigns were organised in all communities of wards 24 and 37 on water-borne illnesses and prevention by using safe water. Campaigns included rallies and street plays. Programs for school children such as drawing competitions and games were used to promote child-to-adult learning.

### Impact

The project gave women of the community to be financially independent. One of the most challenging aspects of the project was to establish a client base and delivery systems. Initially with just over 50 clients, a rickshaw and an rickshaw puller were hired on a monthly basis. As and when the business grew to over 100 hundred clients and the group was selling over 1,000 bottles a month, the women invested in their own vehicle. From 2012 to 2014 the clientele grew from 60 clients to over 300 clients, supplying over 4,500 cans of water per month by mid 2014. Additionally, vending points were developed at three locations within the city for ease of access for both customers and the Water Enterprise Group.

Additionally, at the national level the project secured several commendations at the national level. Two group members participated in an annual festival in Delhi organised by Hazards Centre to discuss issues of housing, employment, basic services, security and identity, and policies. The Nai Asha Shudh Jal Water plant received a large number of visitors from community-based organisations from Agra and other cities, including the local women's groups under the Health of the Urban Poor Program (HUP) <sup>1</sup>, a USAID supported Maternal and Child Health Program implemented by

<sup>1</sup> USAID (2015). USAID/India Health of the Urban Poor Program Final Evaluation Report. Accessed on: 26 July 2021. Available at: [https://pdf.usaid.gov/pdf\\_docs/pa00kz4h.pdf](https://pdf.usaid.gov/pdf_docs/pa00kz4h.pdf)



Social infrastructure map developed by the women of ward 24. Map Source: CURE (2014). Compound model of Water, Health and Nutrition programme in slums of Agra, U.P. FEM Sustainable Social Solutions.

#### CURE in Agra.

A series of media reports were conducted in local/national newspapers highlighting this project as a demonstrable pilot in other parts of the city.

#### Health project: Increased access to health services.

In addition to the issues pertaining to water in the Ward Number 37 in the Trans Yamuna area in Agra, CURE has also observed the health of large number of people living in the area was deteriorating due to issues of contaminated drinking water, improper disposal of human excreta, lack of personal and food hygiene and improper disposal of solid and liquid waste. Additionally, water related illnesses were also on the rise majorly in children and women. Identifying the requirement of a streamlined health plan, CURE developed a plan in conjunction with the women and children of the local communities for ward 24 and ward 37.

#### Community mobilisation and identification of stakeholders

Since the health plan was aimed at women and children, to ensure participation and involvement of the community throughout the plan making and implementation process, the members of Mahila Arogya Samitis (MAS) in Agra were requested

to proactively seek volunteers. Utilising Participatory Learning and Action (PLA) tools and Focus Group Discussions, an understanding of key health issues was built in the communities. Soon after, from amongst the volunteers, groups and local leaders for each of the communities were formed to monitor both the planning and implementation, and the health of the women in their respective communities. To this extent, slum health, mosquito, fly and smell maps were prepared with the help of the women and especially children. Houses of people suffering from water borne diseases were also identified during the mapping process. The prepared maps were then overlaid on CURE's total station surveys for additional information on households, landuse, physical and social infrastructure etc.

Additionally, MAS and the local groups were deployed in the communities through the plan making process to actively seek out beneficiaries in need of health services. Through the beneficiary seeking process, MAS and CURE team observed the immediate requirement of awareness on antenatal, natal and post-natal care, breast feeding, delivery etc, considering the fact that most women avoided visiting the hospitals owing to high expenses. For this, multiple awareness meetings, workshops and training programs were conducted to train and motivate women to prepare



Community mapping in ward 24.. Picture credits: CURE (2014). Compound model of Water, Health and Nutrition programme in slums of Agra, U.P. FEM Sustainable Social Solutions.

in advance for pregnancies and involve their husbands through the planning and decision-making processes. The local groups and MAS members were also involved as watch groups to keep a track on the health status of households that fall under their purview.

### Setting up health centres

CURE has set up health centres in each of the two wards with a visiting doctor and basic facilities. The centres provide paediatric, gynaecological and general services through qualified doctors to women and children. These centres also act as information dissemination centres where information pertaining to various government schemes on water, child and maternal health and sanitation are explained in detail and made available to the qualified beneficiaries. Additionally, RCH calendar, WASH posters, flip books, health and WASH puzzles, jigsaw puzzles on male and female reproductive systems, video on child health etc are made available for the public in the centres.

Community and local leadership generally play a major role in influencing choices of people. Similarly, community and religious leaders in the two wards were engaged by CURE to improve health knowledge. The health centres also actively pursued behavioural change programs to create awareness on WATSAN and maternal health issues. Prabhat Pheri (morning walks) and rallies were also organised by the MAS members on the themes of Swatch raho-Swasth raho, khush raho-khushyali

failo (Be clean-be healthy, be happy and spread happiness) and Shudh pani piyo, swasth jeevan jiyo (clean drinking water leads a healthy life). Health camps and Urban Health and Nutrition Day are also regularly organised in the slums, playing a vital role in delivering maternal, child health care and nutrition services to the identified beneficiaries with the help of Anganwadi workers, MAS members and local workers. The workshops and health camps have resulted in:

- Increase In institutional deliveries
- Increase in women who availed benefits of Janani Suraksha Yojna - a scheme for protecting the mothers.
- Increase in number of eligible women/ men using modern methods of contraception.
- Increased awareness on determinants of health, such as water, sanitation, hygiene etc

### Learnings

The Compound Water Treatment Plant Project has tapped into the potential of low-cost, social, and organisational innovation. The project has now become a part of a 'new regime of empowerment' that has emerged to support women established/run businesses, further empowering women to be financially independent. The Water Treatment Plant is a demonstrative project because of the emphasis it places on mainstreaming gender and the accountability it provides to women collectives. Women not only earn a living through the treatment plant,

but also make sure that their communities never have to depend on private players for water, directly making them accountable and putting them in leadership positions. Hence, when women see an opportunity to gain income through a water treatment plant, they tend to take on a leadership role both in convincing their community and in managing the plant. The project has demonstrated the potential of not just uplifting the financial status of women, but also providing them with opportunities to save and create a credit and thrift system for long-term sustenance.

Programmes focussing on the health of women and children have been proven to socially uplift the communities they live in. The case addressed primary health care challenges and provided the settlements

with an actively working health care center to help them fight recurring health issues. Additionally, the project also focused on cleanliness to alleviate certain water borne and mosquitoes related health issues. The project also focussed on addressing stigma associated with pregnancy and conducted behavioural change activities which have been proven to have a positive impact on the community as a whole. This project, although has been implemented widely across the country, proves to be unique in terms of involving women and children, and piloting a health plan developed by them for their own benefit. The two projects can be replicated across the slums in the country, to effectively respond and combat water scarcity and recurring health issues and ensure safe and adequate access to health and water to all.

# South Korea

## SMART Education Interventions in Schools



A SMART Education class room in Sejong, South Korea. Picture credits: Paik Hyun (2015). *Forefront of smart education, Sejong.*

### Key Values:



Inclusion



Innovation

### Summary

Soon after world war II, South Korea worked tirelessly on reforming its educational system to emphasize the importance of national identity and knowledge to benefit all sections of the society. One way the country began to alter education was through implementing technology-oriented learning methods in schools. With the advent of Information and Communication Technology (ICT) across the world and in South Korea in 2005, the policy makers saw an opportunity in harnessing the ICT

tools for education. Soon after, in 2012, the Korean government initiated a strategic plan for SMART education for every student, irrespective of the socio-economic background.

SMART education was drafted as an educational policy that refers to Self-directed, Motivated, Adaptive, Resource enriched, and Technology embedded education. The policy aimed to address that SMART education is not just about education with smart devices, but an

educational paradigm and approach that smart technology can offer against the traditional classroom-based education that had hardly been provided. To implement the SMART education policy in schools, the Korean government developed digital textbooks, online learning resources, and infrastructure systems that allow wireless internet connections in the school. In addition to the hardware and software-based infrastructure support, many educators and researchers have developed SMART educational models, and conducted classroom-based research to find out the effectiveness of SMART education.

### Evolution of the SMART schools

Utilisation of information and Communications Technology (ICT) in day-to-day affairs in South Korea began in 2005. The country saw potential in adapting ICT tools in the mainstream governance systems to strengthen the existing educational system by promoting science and technology. As a result of the piloting of preliminary interventions pertaining to ICT in enhancing the interests of the students between 2005-2010, South Korea topped the Organisation for Economic Co-operation and Development's (OECD) Digital Reading Assessment (DRA), with students scoring more than 20 points higher on the digital reading scale than students from other countries with similar skills in print reading.<sup>2</sup> Considering the advancement in ICT, South Korea launched its SMART Education initiative in 2012 to customise educational systems and bridge the gap between new and innovative technological methods in the existing education system. The initiative primarily aimed to foster learner capacities across the four C's namely Critical thinking (and problem-solving), Collaboration, Character and Communication in order to prepare the upcoming generation for the fourth industrial revolution.

### Distinct features of the SMART Education program

The SMART Education initiative consists of

developing infrastructure, new pedagogies, relevant policy and legal frameworks, and culture to support ICT based education. Therefore, it aims to change the methods of imparting education from in-classroom lectures to more interactive educational contents and pedagogies tailored to each student and teacher. To this extent, the SMART in the smart education initiative emphasises the following features:

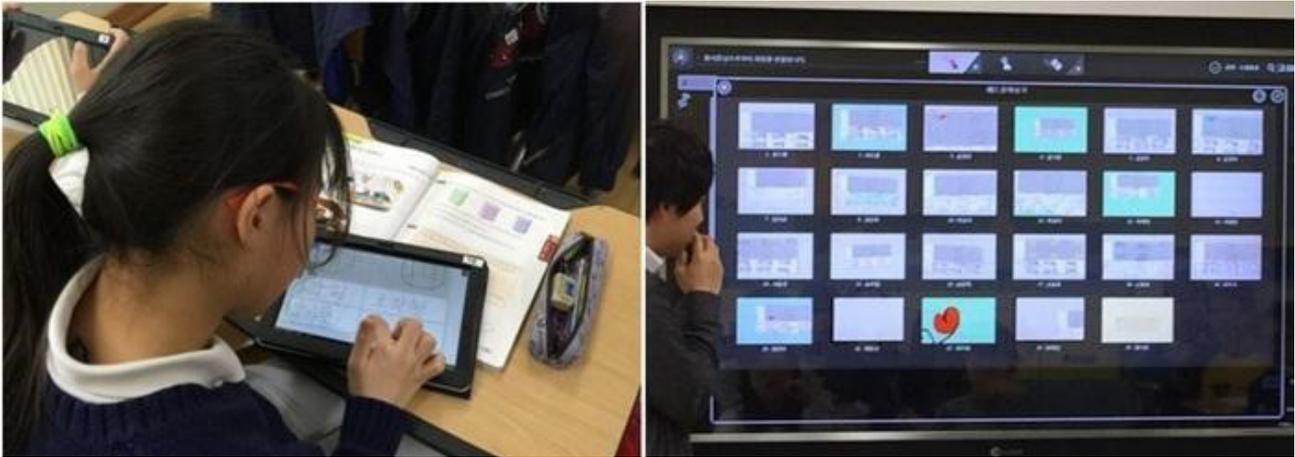
- The 'S' stands for 'self-directed', meaning students will initiate the learning. When the students have the willingness to gain knowledge, they are more likely to succeed in their education.
- 'M' stands for 'motivated.' In the classroom, teachers include this concept by ensuring that the learning and teaching methods are engaging. This will help the students to be excited about their learning and more likely to work hard on given tasks.
- 'A' stands for 'adaptation.' This allows education to be effective for different individuals. Each student learns differently, so teachers must adapt to the individual's needs and circumstances.
- 'R' stands for 'resources.' In order to have an effective education curriculum, South Korea aims to have the highest knowledge scores. This focuses on the need to have enough resources for teachers to teach effectively.
- 'T' stands for 'technology.' This shows the use of ICT—Information and Communications Technology—in South Korean schools' curriculum. Implementing technology and technology education into the education system digitised South Korea's curriculum to reflect the modern age.

The key goal of implementing the SMART Education initiative was to digitalise educational contents by 2015, reflecting modern changes of the 21st century and to utilise ICT tools as a primary medium of learning. It featured five major tasks:<sup>3</sup>

- Expanding and developing digital textbooks based on smart learning models.

2 OECD (Organisation for Economic Co-operation and Development) (2015). Main Results from the PISA 2012 Computer-Based Assessments in Students, Computers and Learning: Making the Connection. Paris: OECD.

3 Chun, S (2018). Birth and Major Strategies of Smart Education Initiative in South Korea and Its Challenges. Smart Education and e-Learning 2017. Switzerland: Springer International Publishing



A student fills in the blanks on her tablet device (left). A teacher checks the work submitted by his students (right). Picture credits: Paik Hyun (2015). *Forefront of smart education, Sejong*.

- Facilitating online classes from afterschool programs to university-level programs and building an online assessment system.
- Creating a free and safe setting for educational contents through developing legal frameworks, ICT infrastructure and ecosystem for sharing contents.
- Promoting teacher training for SMART education.
- Establishing infrastructure of the foundation for cloud educational services in schools as well as a platform to share educational contents not just across a particular school, but across the public domain.

One main feature of the SMART Education initiative is the implementation of digital textbooks designed to link to the online classes. Online classes promote interactive learning and facilitate studies for those dealing with disabilities or health-related issues. Moreover, online classes provide more options for students to select their learning subjects, even for students in rural areas, who have historically been deprived of this right due to lack of subject teachers in their areas.<sup>4</sup> 'How to use digital

books' generally provided through the initiative was already tested in 20 schools in 2008, 112 in 2009, 132 in 2010, 63 in 2011, and 46 in 2012. The pilot schools were provided with tablet PC, electronic blackboard, and wireless internet.<sup>5</sup> A study of the effectiveness of adopting digital textbooks in schools found that there have been increases in academic achievement, learning flow, self-directed learning ability, and problem-solving ability.<sup>6</sup>

Additionally, building an online platform to share educational materials became a key to success for the entire SMART Education initiative. An online platform is known to create a virtuous-cycle educational ecosystem. The Korean government developed the SMART education platform, whereby both the government and private companies can engage in the development of contents in the open market together.<sup>7</sup>

### Teachers and the SMART education pedagogy

Based on the review for legal and technical prospects, the government set up a long-term plan and implemented the initiative in some pilot schools in various forms.<sup>8</sup> The

4 Lee, JH (2011). "Korea's Choice: Smart Education" OECD Education Today." OECD. Accessed on: 19 July 2021. Available at: <https://community.oecd.org/community/educationtoday/blog/2011/07/26/korea-s-choice-smart-education>

5 Lim, S (2012) The 2012 Educational Informatization White Paper. KERIS, Seoul, Korea.

6 Byun, H., Ryu, J., & Song, Y. (2011) Research Trends on Digital Textbook and Meta-analysis on its Academic Achievement. Education Methods Research.

7 Park, Y., An, S., & Lee, Y (2013) Direction of Contents Development for Smart Education. IADIS International Conference e-Learning 2013.

8 Chun, S (2018). Birth and Major Strategies of Smart Education Initiative in South Korea and Its Challenges. Smart Education and e-Learning 2017. Switzerland: Springer International Publishing. Available at: [https://www.researchgate.net/publication/318132734\\_Birth\\_and\\_Major\\_Strategies\\_of\\_Smart\\_Education\\_Initiative\\_in\\_South\\_Korea\\_and\\_Its\\_Challenges](https://www.researchgate.net/publication/318132734_Birth_and_Major_Strategies_of_Smart_Education_Initiative_in_South_Korea_and_Its_Challenges)



Electronic scanners attached to the cabinet provide attendance records (left). Students place their used smart devices in charging stations (right). Picture credits: Paik Hyun (2015). *Forefront of smart education, Sejong*.

SMART Education initiative did not just focus on improving the 4 C's of the students, but has also focused on strengthening teachers' competencies for digital education. The teacher training curriculum incorporated the use of smart technology, communication through SMS, and new teaching and learning methods to promote creativity, cooperation, communication skills, critical thinking, and problem solving through group-level project activities. Both online and offline group teacher learning programmes have been designed, and their performance has been assessed in case studies provided by other teachers, special lectures, and movie previews.<sup>9</sup>

The SMART Education Initiative required a holistic approach not only to promote digital infrastructure, but also to change the concept of education and methods of imparting knowledge. Pilot schools have tried various learning and teaching models based on students' learning pace. Students generally lead the entire process of learning from designing the topics and research, working with others through cloud computing and presenting their

learnings to evaluating the class. Teachers can use various instructional methods and materials on the online platform and track the learning outcomes of each student in classrooms so that they support students based on individual student needs.<sup>10</sup> After developing guidelines in this regard, the government introduced related tools to teachers using web-based platforms, nurturing teachers, and creating learning communities to share best practices. SMART Education Experience Centers were developed to provide hands-on experience to teachers. In addition to that, the curriculum for pre-service teachers was tailored to reflect new pedagogies for the SMART Education initiative.<sup>11</sup>

### Impact

Several assessment studies conducted on the initiative have measured changes in students, especially through the use of digital textbooks as part of the SMART Education initiative. These evaluations found that the initiative has led to improvements in problem-solving skills, communication skills, creativity and innovation ability,

9 UNESCO (United Nations Educational, Scientific and Cultural Organization) (2019). "Classroom revolution through SMART education in the Republic of Korea: case study by the UNESCO-Fazheng project on best practices in mobile learning." Paris: UNESCO. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000366729>

10 Chun, S (2018). *Birth and Major Strategies of Smart Education Initiative in South Korea and Its Challenges*. Smart Education and e-Learning 2017. Switzerland: Springer International Publishing.

11 UNESCO (United Nations Educational, Scientific and Cultural Organization) (2019). "Classroom revolution through SMART education in the Republic of Korea: case study by the UNESCO-Fazheng project on best practices in mobile learning." Paris: UNESCO.



Fourth graders at Dodam Elementary. Picture credits: Paik Hyun (2015). *Forefront of smart education, Sejong.*

critical thinking, and information utilisation ability. Meanwhile, teachers were found to have become increasingly effective in learning facilitation, communication skills, and the use of smart devices. Promoting teacher and industry-oriented autonomy in school operations and curriculum yielded high benefits for students, including evolution of programmes/education plans tailored to meet technical, industrial and social needs and standards. In addition, the SMART education initiative developed a Web-based platform to share the results and the best practices. The government, in turn, gathered and shared the data with the public through a system that enabled each school to have more accountability and incentive to improve its system and education programmes. The initiative helped teachers to be at the core of the education system, not just as imparters of knowledge but as a strong pillar engaging to improve pedagogical competencies and effectively teach the upcoming generations.

### Learnings

The SMART Education initiative demonstrates how the use of technologies can help to create improved, engaging, inclusive and affordable education systems across the country. Yet, the successful implementation of the model requires systemic approaches, including improving various laws and systems, generating an enabling infrastructure, enhancing teacher development programmes for the use of ICT in classrooms, and establishing educational policy to activate successful SMART Education models across multiple academic disciplines. The SMART Education initiative in Korea has yielded meaningful outcomes, including free high-quality materials, the ability of legal systems to transition to the digital learning environment, the adoption of new teaching methods for smart education, and comprehensive collaboration with governments, schools, and the private sector.

# Karnataka, India

## Hippocampus Learning Centres



A teacher overlooking a fun and yet educational playtime at one of Hippocampus's learning center. Picture Credits: Shweta Vitta (2016), From 17 pre-school centres to 285 in less than five years – Hippocampus has brought the joy of learning to over 11,000 rural kids

### Summary

Hippocampus Learning Centre (HLC) is an impact focused educational organisation that aims to bridge the gaps in the local educational system by addressing the growing demand of quality education in India.<sup>12</sup> With over 200 early and pre-learning schools, the Hippocampus Learning Centres provide high quality, affordable, community-based kindergarten and after-school primary education services in

small towns and villages in Karnataka. The centres simultaneously create employment opportunities for women living in close proximity to the schools, by hiring them as teachers and training them according to a predesigned teachers manual. There are over 300 Hippocampus Learning Centres, with 700 teachers who benefit 11,000 pre-schoolers across Karnataka. The organisation focuses on embedding creative learning methods through a

#### Key Values:



Inclusion



Innovation

<sup>12</sup> PTI (2021), Singapore's Xseed Education takes a minority stake in Hippocampus Learning Centres, Accessed on 7th July, 2021, Available at: <https://www.devdiscourse.com/article/education/1638724-singapores-xseed-education-takes-a-minority-stake-in-hippocampus-learning-centres>



Mr. Umesh Malhotra with the Hippocampus students. Picture credits: Maline Goyal, Hippocampus, a children's library blossoms into a chain of pre-school learning centers in rural India, *The Economic Times*.

specialised student-centric curriculum that does not rely on rote learning and memorisation methods. The organisation promotes a creative style of pedagogy as a means to lay a foundational early learning for children who otherwise would not have the resources to access such services<sup>13</sup> through a low-cost business model that focuses on involving and evolving through rural entrepreneurs.

### Evolution of Hippocampus Learning Centres

Witnessing the impact of activity-based learning had on young minds in the United States of America, Mr. Umesh Malhotra aspired to recreate a similar, and novel experience for children on returning to India. It was in 2003, that Mr. Umesh began the first library for children in a sprawling 5600 square feet plot in Koramangala, Bengaluru. The library boasts of an envious

collection of children's movies, books, hosts reading sessions and other fun activities such as treasure hunts, movie screening, quizzes and trips. Post the success of the library, Mr. Umesh, after having visited rural schools and examining the curriculum, decided to expand his venture to the bottom of the pyramid. Through the Hippocampus Learning Centres, his ultimate aim was to be able to motivate every child, irrespective of geographical location and socio-economic standing to inculcate the habit of learning without force or other external interventions.<sup>3</sup> To achieve this, the hippocampus learning centre has developed its own curriculum in collaboration with international education experts, promoting student-centric, creative style of pedagogy.

### Distinct features

Identifying the fact that anganwadi centres

<sup>13</sup> Maline Goyal (2015), Hippocampus a childrens library blossoms into a chain of pre school learning centers in rural India. Accessed on 7th July 2021, Available at: <https://economictimes.indiatimes.com/small-biz/startups/hippocampus-a-childrens-library-blossoms-into-a-chain-of-pre-school-learning-centres-in-rural-india/articleshow/48726414.cms>



Children of the Hippocampus Schools. Picture Credits: ADB (2015), Hippocampus Rural Education Project

established by the government act as day-care centres as opposed to being pre-schools, the Hippocampus Learning centres were established to increase access to quality early childhood education in rural India and bridge gaps in the local education system.<sup>4</sup> The organisation began with piloting their schools, and contextualised their curriculum specific to Karnataka.

Three types of education centres in rural villages were experimented with throughout the state. A kindergarten program for children between ages 3 to 6 that ran from morning to early afternoon and an after-school program for primary school students from classes 1 – 5 that ran from late afternoons to evenings. The third education centre was to work with class IX and X students who were gearing up to appear for their board exams. The educational centres were set-up in 3-4 room rented houses in the villages.

Additionally, while the curriculum was being developed for the early learning centres, a recruitment plan for teachers and a teacher's training manual was also underway. The

organisation strategized enrolment in two ways – by advertising their unique methods of teaching within towns and rural contexts, and by recruiting women, who were living in close proximity to the schools, as teachers. Through this, not only was enrolment in the schools monitored, the women too were given an opportunity to work as teachers and contribute to their respective households. This move by Hippocampus not only empowered the women in terms of providing them financial independence, but also elevated their social status within various local developmental processes.

### Impact

With the fees as low as INR 4,500 – INR 7,000 (including uniforms and books) per annum and establishment costs up to INR 2,00,000, Hippocampus has made its mark as a provider of affordable, sustainable, and quality education to pre-primary and primary school going children. Hippocampus has built over 200 schools, operates 16 K-10 schools and has provided more than 150,000 student-years of learning since the last decade and is

currently expanding into the cities, starting with Mumbai, Andhra Pradesh and Tamil Nadu. Asian Development Bank, UNITUS and XSEED, amongst many have invested in Hippocampus with an aim to transform the learning and knowledge experience of children in India. Hippocampus is also working with local developmental bodies and self-help groups such as Swayam Shikshan Prayod in Maharashtra and Myrada in Karnataka to supply pedagogy and teacher training programs. HLC's internal impact assessment has shown that by the end of the three-year programme, at least 85 percent of the children are able to read and write simple sentences in English and Kannada as well as perform single-digit Maths problems.<sup>43</sup> On the educational front, Hippocampus has revolutionised the learning processes amongst children in Karnataka through its creative and activity-based pedagogy as well as the role of women in community development through their recruitment processes. Over 7 percent of pre-schoolers use Hippocampus programs in Mandya district in Karnataka, where over 17 private schools have adopted the Hippocampus model of education.<sup>43</sup>

## Learnings

Education is the bedrock of a just society, and children are our future. Programmes focussing on children have been proven to uplift the communities they live in. Hippocampus, a unique affordable early learning centre could prove to be beneficial to children not just in the rural areas but in the urban areas as well. With urban inequality increasing every day, these learning centres can not only help children gain cost-effective education, but could also be pathways to develop their personality, guiding children to be better citizens as they grow up. The affordable education model could be scaled up and made available to the children living in slums across the country. Additionally, it could also help women turn into active financial contributors to their families, thereby improving their economic and social standing.

# Nairobi, Kenya

## Community-Based Waste Management for Environmental Management and Income Generation in Low-income Areas



Sample temperature taking at the pilot site of the project. Picture Credits: My Climate, Ecological waste management creates jobs in Kenya.

### Summary

Centralised waste management systems governed by the local development authorities in Kenya have been proven to be inadequate with respect to the rapidly increasing amount of waste generated in the low-income settlements leaving large proportions of populations unserved. Owing to limited budgets, local governments in Kenya struggled to incorporate densely populated and hard-to-access low-income informal settlements within their scope of providing waste management services.

To tackle the issues of public health and the environment, women in informal settlements in Nairobi, generate composted waste as a means of improving community environmental conditions and generate income through the sale of the compost. The project revealed that significant environmental improvements have been achieved including improved health, urban agriculture opportunities, better drainage and access within communities and the potential to address rural-urban imbalances in resource flows.

#### Key Values:



Inclusion



Innovation



Physical Infrastructure Development



Nairobi Monthly clean-up exercise. Picture Credits: UN-Habitat in a post on twitter

## Background

Administration of urban areas in Kenya is the responsibility of local authorities. However, governance pertaining to waste management at the local level suffers from a lack of decision-making authority, experience, accountability and heavy volumes of work due to understaffing.<sup>1</sup> Further, lack of inter-departmental coordination and cooperation on collection, disposal and overall management of waste exacerbated by political difficulties at the city level have led to a poor waste management system in the city. Such organisational, fiscal and political issues within local governments in Kenya have resulted in an inability to cope with increasing rates of urbanisation.

Inadequate waste management systems in an area often contributes to a general

deterioration of community development and cohesion.<sup>2</sup> To alleviate issues of waste, the Nairobi City Council (NCC) in conjunction with Mathare Youth Sports Association (MYSA) has often conducted clean-ups as a small self-help initiative to combine community responsibility with sports. However, these initiatives have collapsed due to management and coordination challenges with NCC and lack of enough time to get the campaign in full swing (source). Less publicised than the MYSA and clean-up initiatives are the composting groups in low-income areas in Nairobi which are supported by a number of local NGOs such as Uvumbuzi club, Undugu Society of Kenya and the Foundation of Sustainable Development in Africa (FSDA) who provide support and training to community-based organisations on generating and selling compost.

- 1 Smoke, P. (1994). Local Government Finance in Developing Countries: The Case of Kenya. Nairobi: Oxford University Press.
- 2 Mwaura, P.M. (1991). An Assessment of the Management of Garbage Collection and Disposal in Nairobi. Nairobi: Department of Urban and Regional Planning, University of Nairobi.



*Laying of soil on the compost. Picture Credits: Sawa Pius, Young people succeed in making and selling compost.*

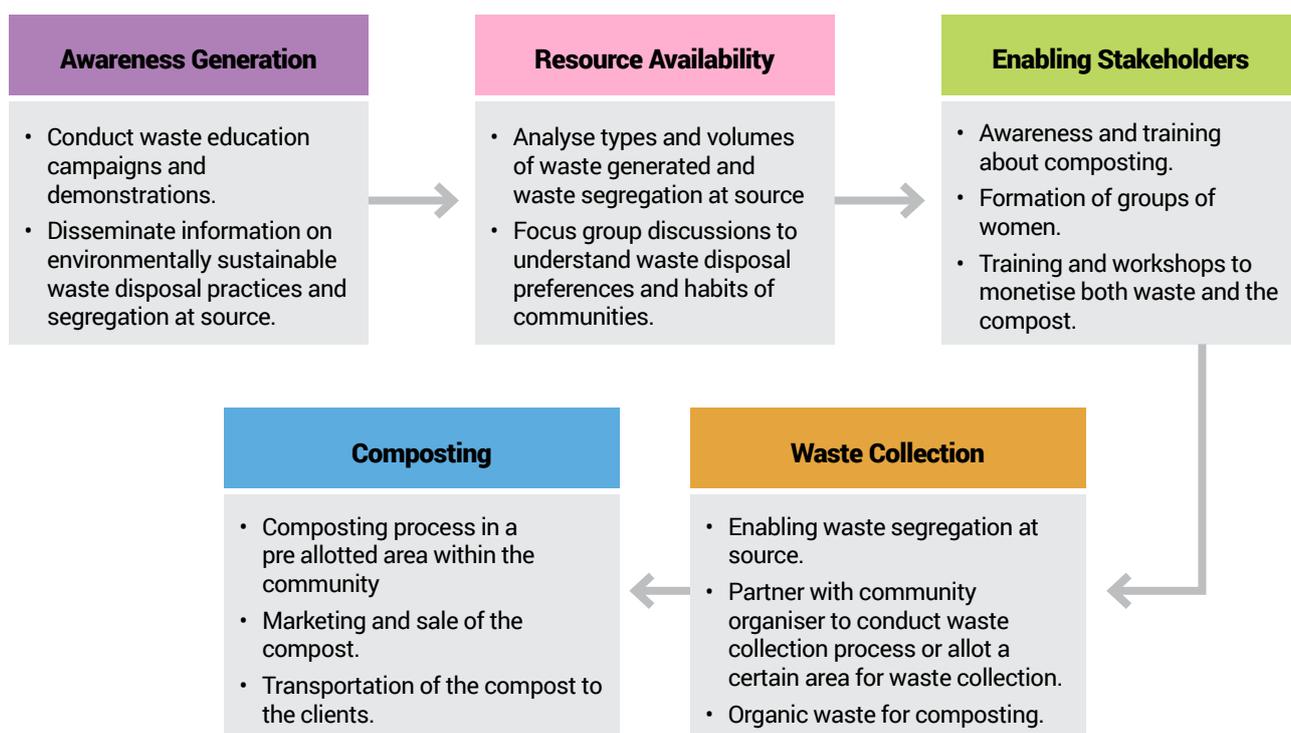
## Stakeholder workings and relationships

The Uvumbuzi Club is a membership organisation that promotes activities pertaining to the conservation of the environment. As a part of their environmental lobbying campaign, Uvumbuzi worked on a 'Garbage is money' campaign in 1992 to promote conservation as a source of livelihood for the poor. Five groups in the informal areas of Nairobi, Dandora, Huruma and Korogocho areas are involved in composting of community organic waste. The groups in Dandora also operate a demonstration garden plot where benefits of composting are demonstrated. In partnership with Uvumbuzi, Foundation of Sustainable Development (FSDA) in Africa is largely responsible for training and monitoring the majority of the composting groups, every two weeks. FSDA also assists in packaging and marketing the waste whenever required. In partnership with Uvumbuzi and FSDA, Undugu, a

charitable organisation became involved in the composting efforts and helped in promoting an integrated approach to urban environmental problems through a clean-living environment (waste recycling) and food security (urban agriculture). The three NGOs gradually withdraw their support to the CBO's when the community becomes self-reliant and only provide transportation and marketing services.

## Business Model

The NGOs in conjunction with the CBO's follow a five-step process that involves creating awareness, taking stock of the available resources, enabling the stakeholders, collecting and processing of waste, and composting and reselling. The first step involves conducting waste education campaigns and demonstrations in the informal settlements and disseminating information on environmentally sustainable waste disposal practices. Additionally, the importance of segregating waste at source



*Business model followed by the project. Picture Credits: Author.*

is explained and certain directives to the stakeholders are given on segregation and collection. The next step analyses types and volumes of waste generated by the people in the community and assess the waste separation at source levels. The NGOs also undertake focus group discussions to understand waste disposal preferences and habits of communities. The next step involves collection and sorting of waste. Ideally the community disposes waste in one pre-specified place, otherwise the groups of women demarcate a place for disposal of pre-segregated waste. Soon after collection begins the composting process, which is then sold to a customer base pre-identified by the NGOs, who then facilitate the selling process. Once the groups familiarise themselves with the process, the NGOs withdraw their support and only provide transportation and marketing services to the groups.

### Gender mainstreaming through the project

The process involved women from various low-income settlements such as Korogocho Mbolea Group, Kinyado Bidii group and the city park hawkers' group. These women were majorly the head of the households

who have been generating income through petty trading, vegetable hawking and selling used clothes. The groups were mobilised through churches and/or internal savings groups and were provided training by the NGOs. The project allows women to collectively produce compost and sell it to the clients, helping them nurture leadership and management skills.

### Impact

The composting project led by various NGOs and CBOs, has proved to be an effective strategy for alleviating the problems of unmanaged waste in Nairobi's informal settlements and has helped to achieve a number of economic, environmental and health benefits.

- Previously, waste was often dumped in the open drains, leading to an increase in health issues and flooding which has considerably reduced due to composting.
- The group members reported a reduction in the incidence of environmental illnesses, including malaria and diarrhoea, highlighting the importance of a clean environment to human health.



*Simonetta Sommaruga, Swiss Federal Councillor, visiting the project as a part of the UN Environment Assembly. Picture Credits: My Climate, Ecological waste management creates jobs in Kenya.*

The Korogocho Mbolea group which consists of 20 members has generated over 18000 KSH (approximately INR 12280) through the project. Similarly, the group at the Central Park Hawkers Market generated over 35000 KSH (approximately INR 23878) in a year, while the Kinyago group only generated 3000 KSH (approximately INR 2046) owing to their locational disadvantages. However, a survey conducted by the Canadian International Development Agency revealed that it was often for the environmental and health benefits that various community-based organisations participate in composting. Although the project has been a success in the informal settlements located closer to the city, certain shortcomings pertaining to the disposal of inorganic waste, human waste and accessibility due to lack of physical infrastructure were pertinent.

### Learnings

The community-based waste management and composting project, implemented across the low income settlements in the city of Nairobi has proven to uplift the economic, environmental and health scenarios of the community. A low-cost waste management model can be replicated across the country but due diligence should be given to inorganic waste which constitutes a major part of day-to-day wastes in our cities. The project is demonstrative because of its socially representative leadership and accountability it provides to women. Women get to own small ventures that they create through the processes, directly putting them in leadership positions. The project has not only given women broader visibility in public spheres but has helped them to be active participants in the local development and political processes.

# Trondheim, Norway

## Planning by communities - The case of Svartlamon



Experimental housing in Svartlamon. Picture credits: Nøysom arkitekter, Experimental Housing at Svartlamon.

### Key Values:



Inclusion



Innovation



Physical  
Infrastructure  
Development

### Summary

Svartlamon, a neighbourhood located in the suburbs of Trondheim, Norway is a result of two decades of political struggle that ended in 2001. What started as a tough conflict led by the residents to preserve the area, is now a case that demonstrates how determined local energies can influence big players. Today, Svartlamon, a neighbourhood organised on 'principles of sustainable development with low standard and cheap rents' is one of the first ecology projects

in Norway that boasts of a successful formalised collaboration between the resident's association and the municipality. From being a defensive and closed micro-society, the neighbourhood has become an important actor in streamlining the development of the city of Trondheim. The case of Svartlamon depicts how an ideal local democracy should function, combining the elements of advocacy, service, self-help and local development.



A street in Svartlamon. Picture credits: Nøysom arkitekter, *Experimental Housing at Svartlamon*.

## Background

Svartlamon, spread over an area of 3 hectares, is situated between the railway and the eastern part of Trondheim harbour. Back in the 1990s, it included 19 municipally owned rental apartment buildings, mostly old and dilapidated worker housing from around 1890, as well as premises belonging to Strandveien Auto. Sometime during the early 1990s, considering the dilapidated position the neighbourhood was in, the local Kommune (equivalent to a municipality) and the elected representatives debated whether the area, closer to the harbour should be redeveloped with new housing or be given up for industrial development. The discussions which took place over a period of two years 1996-98 resulted in the decision to demolish the existing buildings and sell the land to the automobile dealer for industrial development.

Knowing the verdict, many of the residents, including the young activists of the Uffa (Youth for free activity), an autonomous Youth centre setup in the neighbourhood opposed the plan under the leadership of Harald Nissen, with additional support from many personalities and interest groups from within the city.<sup>1</sup> The residents of the neighbourhood revolted against the plan and demanded that the old timber buildings be preserved. They wanted a place where they could live an alternative lifestyle, with a strong social and ecological perspective.<sup>42</sup> Keywords were affordable housing, workplaces, solidarity, social inclusion, reduced consumption and sustainable lifestyle. After a period of conflict, a more constructive though difficult process of dialogue with the municipality began. The activists were granted an initial sum of NOK 100,000 (approximately INR 8,42,704) per building for essential maintenance and upgrading as they themselves thought fit.<sup>2</sup>

1 Paaby, Kirsten (2011). Citizen Education, Municipal Development and Local Democracy in Norway.

2 Paaby, Kirsten (2011). Citizen Education, Municipal Development and Local Democracy in Norway.



A community housing block. Picture Credits: Arkitekture N. Svartlamoen housing, Trondheim.

### Svartlamon Residents Association

Svartlamon Residents Association was founded in February 1990. The statutes of the Association lay down the flat structure, the autonomy of the area, and the goals of urban ecology and anti-racism. With a strong idea of an alternative way of urban living the residents wanted to pursue their interests in, for example, music and art – and idling about and partying – without having their dreams crushed by material chase. To this extent, some of the residents already worked on developing ideas and proposals for an ecological, alternative development of Svartlamon.<sup>44</sup>

An area plan was finally approved by the city in 2001, designating Svartlamon as a pilot project area: “an alternative neighbourhood with room for ideas and experimentation in relation to housing solutions, social cooperation, participation, energy and ecology, public services, arts culture and business.”<sup>3</sup>

In the same year, management of the housing stock was transferred to the Svartlamon Housing Foundation, jointly run by residents and the municipality. The housing foundation includes task groups, where the residents themselves form into groups to address various housing and infrastructural needs and work on them gradually. The municipality holds a nominal majority but in practice it lies with the residents since the leader is a resident nominated by the municipality. All main decisions are taken at monthly meetings. As of today, the Foundation also has three employees.

### Experimental Housing/ Construction at Svartlamon

The year 2001 saw a landmark change in the quotidian of Svartlamon. While the local government decided to rehabilitate and not demolish the existing buildings, the residents took it upon themselves to develop the area as an experimental arena, under a flexible regulation plan.

3 Valler, Thea Marie, Marius Korsnes, Jiayan Liu, and Yulin Chen. “Community Building through Public Engagement: Variety in Europe and China.” In *Towards Socially Integrative Cities. Perspectives on Urban Sustainability in Europe and China*. Edited by Bernhard Müller, Jian Liu, Jianming Cai, Paulina Schiappacasse, Hans-Martin Neumann and Baojun Yang. Basel: MDPI, 131.



Greenhouse in Svartlamon. Picture credits: Laura Tomas Avellana

The preservation engaged a number of residents who were artists, writers and musicians who came together to refurbish their surroundings. To get the people of Svartlamon truly involved and to strengthen the philosophy behind the neighbourhood, the residents build the houses they want to stay in, using ecologically sound materials and components, under the watchful eyes of the local carpenters and architects.<sup>4</sup> In 2005, residents built two new buildings with accommodation for more than 30 people. Since none of the local architects showed interest in fulfilling their ambitions, the residents contacted the architecture school<sup>5</sup> – and the impossible became possible. An innovative and ecological five storey timber building was constructed at a low cost, much less than half the price of upmarket flats in Trondheim.<sup>6</sup>

In 2006 the premises in the neighbourhood owned by the car dealer, Strandvein auto were taken over by the Svartlamon Culture

and Commerce Foundation. The buildings comprising around 3,000 square metres have been refurbished using ecological materials and function today as a multi-purpose community centre, including an art and cultural kindergarten established in cooperation with the municipality. This is organized more in keeping with the visions of the residents, where ecology, participation, recycling and art should play a central role. It was planned during a series of workshops with the children and inspired by the Reggio Emilia educational approach. Another part of the premises, the ReMida Centre for Creative Recycling comprises space rented to sustainable businesses. The former workshop hall has been converted into a concert venue seating 600, which has, since 2009, staged a wide variety of events including theatre, dance, rock concerts, art exhibitions and literature seminars. Since then and up until today, numerous construction projects have been taken up by the residents in collaboration with local architects and the

4 Elisa López and César Tomé (2016). SVARTLAMON Evolution from a marginal neighborhood to a creative, out of the system area and the influence of the architecture in this process. NTNU

5 For more information, refer to the website of Frivillighet Norge.

6 Elisa López and César Tomé (2016). SVARTLAMON Evolution from a marginal neighborhood to a creative, out of the system area and the influence of the architecture in this process. NTNU

residents themselves that saw the rise of the community in internal spheres.

### Organization and stakeholder relationships

A clear-cut manual to join the Svartlamon Residents Association does not exist. Any resident can be a part of the governing body. Meetings are generally held once a month and have an extremely flat structure where the chairman is elected at each of the meetings. However, matters to be discussed at the meeting should be registered well in advance with the association with one of the three people who work constantly at the association. Residents are organised in 5 neighbourhoods which further have internal meetings once a month. Each of the neighbourhood groups is allotted a dedicated amount of money in the monthly meetings that can be used for maintenance. The neighbourhood consists of six volunteer groups who oversee the workings of day-to-day activities of the neighbourhood.

**The relocation and coordination group (Flyko):** The group consists of an elected representative and one resident from each of the five neighbourhoods that Svartlamon are organized within. Flyko is responsible for revising guidelines for the housing and process applications for allocation or change of residence. The group reviews over 100 applications a year. Future residents are usually evaluated based on a pre-set criterion. For instance, artists, homeless people, anarchists, political activists, socially challenged people, single moms and dads, students and migrants are the groups that have a high chance of getting a place to live at Svartlamon

**Operating group:** The group of six elected residents is responsible for collecting rent on behalf of the resident's association. Additionally, the group also establishes repayment arrangements for residents with rent arrears. Much of their work involves contacting residents who owe money to the housing association to set up payment plans.

**Fire group:** The group consists of 16 elected residents who function as a fire protection group. The group then chooses a fire protection coordinator who

supervises within the entire geographical area of the neighbourhood, organises fire drills and informs new residents about fire instructions for the neighbourhood.

**Power group:** The group consists of four non-elected residents who report on the energy and benefits electricity costs on the individual consumer. Power group communicates with the operating group that is responsible for billing.

**Green group:** The group consists of 45 members, of whom about 20 are particularly active. The group is open to anyone who lives in Svartlamoen, and others associated with the area who wish to participate. Green group has a special responsibility for the common areas of Svartlamoen.

**Workshop group:** This group of 6 elected members manages construction associated tools and material/recycling repository available both for residents and for housing foundations. The idea behind the group is to check the availability of tools and materials to stimulate reuse and volunteer efforts.

### Distinct features of the neighbourhood

Svartlamon consists of a number of distinct features that make it attractive for people who visit regularly or live in as residents. Compared to the past, the neighborhood is now more open and welcoming to the rest of the city. The art-and-culture kindergarten are an important hub which attracts families from the other parts of the city. The Eat the Rich festival is another example which annually invites many people to Svartlamon. In addition, they have a children's and adult theatre, street market and political cinema.

Additionally, in 2005, the Residents Association approved a comprehensive Environmental Plan as well as an Energy Plan including solar and bio-energy. Three years later, a dam for waste water recycling was built. There is a Free Shop where people can deposit articles they would otherwise have discarded. With increasing popularity, it is now open two days every week. Across the street from the shop lies Café Ramp which serves ecological and fair-trade food. In the summer of 2010, the Svartlamon

Cooperative shop opened, run by 30 volunteers and open seven days a week. It is organized as a workers' cooperative where members have both rights and duties. Administrative tasks are shared amongst the members and operations are decided at members' meetings. As far as possible all produce is ecological or fair trade, and prices are low since the work is free. The money collected is distributed equally amongst the neighbourhood groups for maintenance.

### Svartlamon today

Svartlamon currently houses over 250 people, living in about 118 flats distributed within the five inner neighbourhoods. The rental contracts in Svartlamon are renewed every three years. Further renewal depends on relationships maintained with neighbours, contribution towards the society and timely rental payments. The Svartlamon housing foundation collects and pays over 650,000 NOK (Approximately INR 54,77,576) monthly to Trondheim Municipality as rent of the houses.

### Learnings

Svartlamon is based on an idea of tolerance and inclusivity. Good quality of life, high level of autonomy and self-determination have been decisive factors in streamlining the development of the community. Additionally, a community such as Svartlamon protects and supports people who are "on the margins of society" in a way the official social safety net usually does not. In addition to its experimental value, Svartlamon can also be seen as having an important welfare function. The community of Svartlamon has taught three extremely important lessons to the world of urban development.

- The power of 'intentional communities.'<sup>7</sup>
- The role of a municipality in enhancing and empowering the communities and
- the role of the community themselves in planning for an ecologically sustainable and resilient community.

To replicate a case of this stature would require immense support from the local communities and the municipality alike. The municipality here would not just be the service providers but should work on enhancing and facilitating partnerships and collaboration with other agents such as local civil society organisations as well as local commerce for the development of the community. The community on the other hand should be able to be self-reliant and work towards a common goal to be ecologically and economically sustainable.

<sup>7</sup> Sager, T. (2018). Planning by intentional communities: An understudied form of activist planning. *Planning Theory*, 17(4), 449-471.

# Tamil Nadu, India

## Primary Healthcare Center - Dharmapuri



Primary Health Center in Dharmapuri, Tamil Nadu. Picture credits: ArchNet, Aga Khan Award for Architecture

### Key Values:



Innovation



Sustainability



Inclusion

### Summary

Primary healthcare center located near Dharmapuri, Tamil Nadu, is an innovative, high quality, comfortable, and low-cost health care project serving a group of villages. Designed by architects Rajesh Renganathan and Iype Vernperampil of Flying Elephant Studio,<sup>8</sup> an architectural firm based in Bangalore, the healthcare center is known for its sustainable design principles that uses simple and local construction materials to provide optimal environmental conditions for effective operations. The project is financed by a group of private donors, and was completed in September 2011. The project has won global recognition for its innovative design components, sustainability principles, and affordable health facility.

### Low-cost innovation

Since the project was proposed to be commissioned in rural areas of Tamil Nadu, the key challenge before the designers and architects was to build a high quality, comfortable and low maintenance affordable health facility for villagers. By employing a 'hybrid' team consisting of a core group of skilled architects and designers brought from outside the state and local workers with high quality of workmanship, the project is an outstanding example of local innovation. The structure of the healthcare center is based on a 'building within a building' concept. Designed as a compact and small-scale project, the health center has a high-tech medical core and low-tech surrounding layer to protect from fierce hot and arid

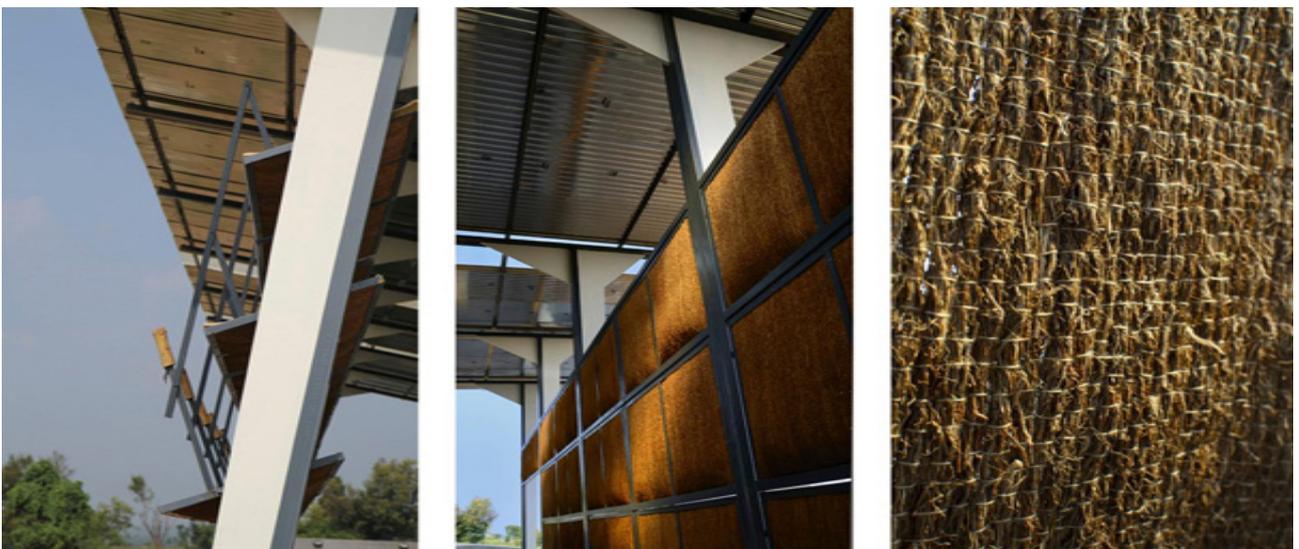
<sup>8</sup> Flying Elephant Studio. Available at: <https://www.flyingelephant.in/>



*Inspired by traditional architectural elements, the building features a protective Verandah inside the Primary Health Center. Picture credits: ArchNet, Aga Khan Award for Architecture*



*Double skin building concept creates a shaded climatic buffer around the clinic. Picture credits: ArchNet, Aga Khan Award for Architecture*



*Use of local available materials such as movable thatched panels, vetiver grass, and rubble masonry. Picture credits: ArchNet, Aga Khan Award for Architecture*



Rainwater collection pond. Picture credits: ArchNet, Aga Khan Award for Architecture

climate. An innovative prototype of a modern building design using traditional architectural elements such as verandah is used for construction of the core of the health care center. The inner core ensures security and hygiene standards, while the maintenance area consists of a reception, two consultation rooms, laboratory, pharmacy, and toilets. The verandah is made of low-cost and locally sourced construction material comprising waiting and circulation spaces.

### Environment sustainability at the core of the design

Design features of green construction provide a cool climate in and around the building. The highlight of the integrated approach to architectural and landscape design is that it creates a microclimate for the building and reduces its energy consumption, while also providing cooling, controlling glare and dust. A classic example of vernacular architecture, the construction of this building engaged local skilled workers and locally available building material such as vetiver grass thatch and rubble masonry to construct a weather tight, secure and easy to maintain

building. The aromatic vetiver grass is a traditional building cooling system that includes wetting woven grass mats and allowing air to pass through. The drip irrigation pipe used to wet the panels in the summer season helps lower the temperature and humidifies air passing by evaporative cooling.

Apart from the cooling system, the project also employs sustainable water management practices such as rainwater harvesting and ground water recharging. The rainwater collection pond gives visual expression to water as a life-giving element; also recalling folklore pertaining to the place - Devara Outhu Pallam, meaning 'God's spring-village'.

The roof of the building is equipped with lightweight corrugated galvanised steel 'shade roof' channels that drains rain water into the central concrete gutter used for collection, storage and recharge of ground water. The shade roof channels not only eliminate the additional cost required for building a rainwater system but also requires low maintenance and service cost.



People from nearby agricultural villages visiting the healthcare centre. Picture credits: Holcim Foundation

## Impact

The primary health care centre project is an outstanding example of low-cost social innovation practice that utilises the strength of locally available materials. The movable thatched panels, composite structural frames, and multi-purpose roof features not only increase the sustainable efficiency of the site but also caters to the local population of the area. The project won an acknowledgement prize in 2011 at the Holcim Awards competition organised by Swiss-based Holcim Foundation for Sustainable Construction to promote sustainable responses to contemporary technological, environmental, socioeconomic and cultural issues from building and construction. The jury for the awards recognised the project for its sophisticated detailing, elegant design, and providing gathering spaces that will be utilised for providing health awareness programs to the local community. Apart from the Holcim Award, the project was also nominated at the International Architecture Award, Chicago Athenaeum Museum of Architecture and Design in 2014 and won Aga Khan Award for Architecture in 2013.

## Lessons learned

Through ages, effective use of available natural resources and local construction techniques have worked hand-in-hand to best serve the native communities. From the layout to architectural details of the building, vernacular design is a sensitive response to the contextual surrounding, like topography and climate. Use of indigenous and local materials directly reduces the need for transportation, cuts down costs, offers a resilient supply chain and limits energy usage in general. The project is reflective of the fact that accounting the orientation, planning and layout of the building in accordance with the sunlight, wind, rain and overall local temperature profile through a correct combination of passive design elements results in a high-performing, climate-conscious building. In a country like India, where low cost provisioning of primary health care is the need of the hour, this project has led by example and has the potential to be adopted and replicated in other regions of the country.

# Bali, Indonesia

## The Green School Programme



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### Key Values:



Innovation



Sustainability



Physical Infrastructure Development

### Summary

The Green School idea conceived by entrepreneurs John and Cynthia Hardy, is a giant laboratory school project located on a sustainable campus, within a lush green jungle in Bali, Indonesia. With an idea of creating a school that educates for sustainability, the Green School was opened in September 2008 in collaboration with craftsmen, architects, academics, and philosophers. The school is best known for providing education

that promotes sustainability and shapes future green leaders and has sustainable ecological principles powered by a number of alternative energy sources such as bamboo sawdust hot water and cooking system, a hydro-powered vortex generator and solar panels. Judicious use of bamboo as a sustainable building material, the development of the school provides experimental and innovative ways for shaping future green leaders.

## Design and construction rooted in sustainability

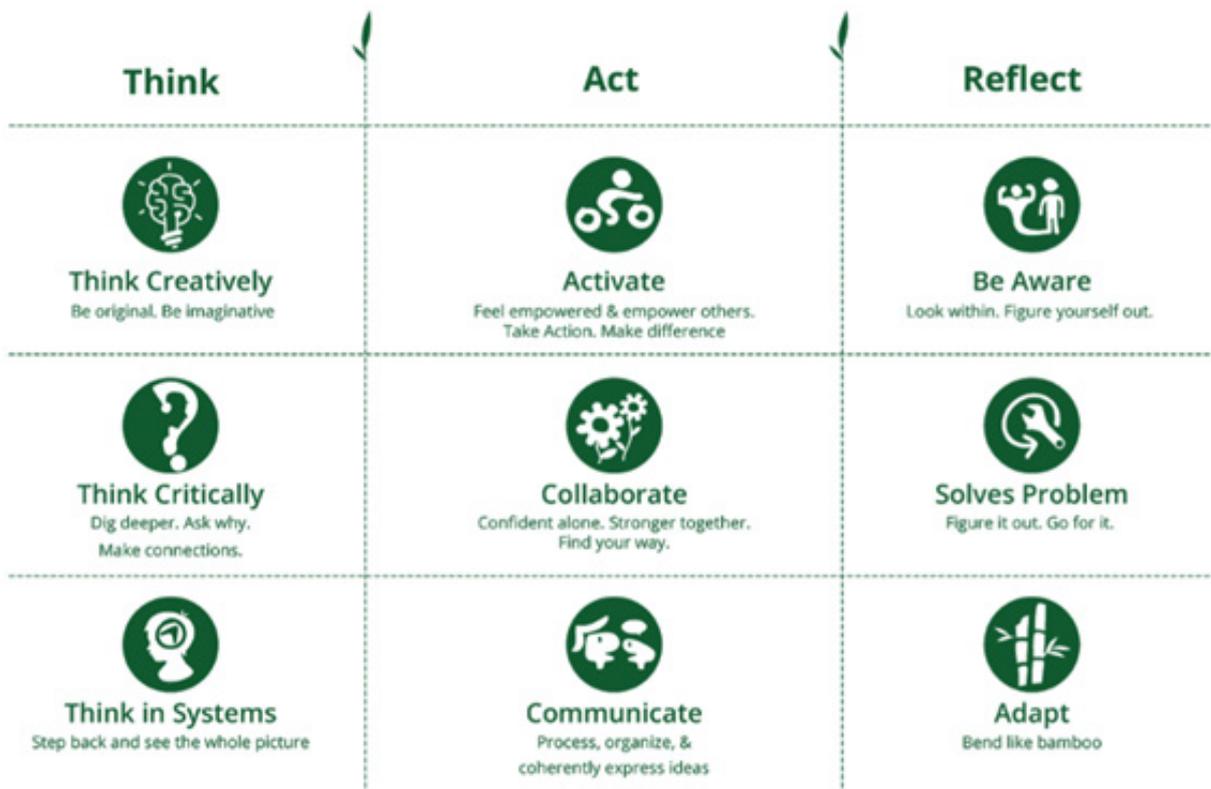
The Green School is set in a tropical jungle campus made of bamboo pavilions used for creating near-permanent structures. Though bamboo is a basic construction material in tropical areas, its use is restricted due to its high susceptibility to fire and natural degradation in two to three years. During the 1990s, Irish-Australian designer Linda Garland pioneered contemporary uses of bamboo in Bali and came up with a special drilling technique to use it for long term building purposes. In this technique, bamboo canes are drilled through the centres with long steel rods and repellent and fire-resistant chemicals made of borax salt powder are applied to the canes. The canes are dried for several days and used for construction purposes. Using similar techniques, the Green School educates more than 500 students from pre-kindergarten to high school within its vast sustainable campus.

## Real life learning through unique school curriculum

The Green School at Bali employs REAL learning principles in order to nurture learning experiences amongst children. The curriculum reflects the larger school principles that allows children space for exploration and generates joy and wonder within children. The REAL learning principles are designed to foster authentic experiences in which students can grow and nurture their values, skills and competencies.

- R - Relationship-centred and Holistic**
- E - Experiential and Evolving**
- A - Authentic and Interconnected**
- L - Local to Global**

Apart from taking a REAL learning principle approach, the Green School programme uses Big Four to design and provide a holistic learning experience for children.





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### **Big Four - Intrapersonal, Kinesthetic, Social Emotional and Intellectual**

The curriculum aspires to create a well-balanced approach to personal and social development, as well as academic learning, in order to foster the characteristics, abilities, and competencies outlined in Green School's Ambitions.

### **Green School Skills**

By cultivating 'Green School Skills' in children, the programme aims to prepare them for the rest of their life as learners and committed environmentalists. Over the period of early childhood education, children acquire unique abilities to think, act, and reflect on every aspect of the school curriculum, including projects and activities that support the Green School Mission of 'A Community of Learners Making Our World Sustainable.' Every day, children in the Early Years Programme learn excellent skills by taking chances, getting dirty, exploring, building independence, and gaining confidence while celebrating and fostering the beauty of childhood.

### **Discipline-specific curriculum**

The Early Years programme at Green School provides a child-centered education based on a developmentally appropriate sequence of learning objectives. The circular bamboo classrooms and colourful play structures created from sustainable materials entice youngsters in the Early Years programme. Through singing, dancing, painting, storytelling, cultural festivals, yoga, green studies, and excursions around the green campus, the play-based curriculum incites curiosity and instils the pleasure of learning within children. The programme for all classes is built around six areas of learning i.e., physical development, social emotional, language development, mathematics, creative expression and Indonesian studies.

### **Green School IRESPECT Values**

The curriculum of the Early Years programme emphasises on instilling values of Integrity, Responsibility, Equity, Sustainability, Peace, Empathy, Community, and Trust.

- **Integrity** – being honest and ethical



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- with thoughts and actions.
- **Responsibility** – being accountable for thoughts, actions and deeds.
- **Empathy** – understanding and caring for the feelings of others.
- **Sustainability** – ensuring that your own body and surroundings are cared for so they are clean and healthy for as long as possible.
- **Peace** – contributing to a state of harmony.
- **Equity** - respecting everyone as an individual and valuing fairness.
- **Community** – being part of a group seeking common goals and taking care of each other.
- **Trust** - building and maintaining strong relationships with each other, the school and the environment.

### Fostering Environmental awareness through flagship programmes

Apart from the classroom-based education, the Green School programme focuses on experiential learning through inviting mystery guests, learning about life outside the school, participating in yoga sessions,

learning about Indonesian culture and conducting nature-based activities. The entire learning is rooted in the idea of environmental awareness and empowering student learning by supporting their biological tendency to bond with the natural world.

Some of the unique programmes include:

**Budaya Indonesia** - Introducing Indonesian culture through puppets, folklore, games, songs, activities, and cultural celebrations. Performing cultural dances, plays, and songs in Bahasa Indonesia.

**Jalan-Jalan (Go travelling)** - Students explore the wonders of their surroundings through field trips related to the Thematics (integrated units) taught in the classroom. Activities include making chocolate at a family-run business across the river, doing batik at a nearby art centre, and planting and harvesting at the Kul Kul Farm

**Getting Our Hands Dirty** – Going for a Trash Walk and raising awareness about recycling and reducing waste, playing in the mud and experiencing the joy of getting dirty,



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harvesting and/or buying ingredients, and then cooking both Indonesian or western dishes and going on a rice field for planting, caring for and harvesting rice in on-campus rice-fields.

### Impact

The Green School Programme has made significant gains in providing education to children with unique and innovative learning methods. The Green School concept was shown to have a particularly favourable influence on children with specific learning difficulties in a qualitative research conducted in 2012. In fact, compared to similar children in other schools, these students showed less stress, more resilience, less distraction, stronger self-esteem, and greater willingness to study at the Green School.

Apart from adopting sustainable ecological principles within their own campus, the Green School supported seven local schools with replicating their waste-management

system. Their Kul Kul Connection programme supports an additional 350 local children learning about sustainability. The impact of the programme has been transformational in environmental initiatives. During the year 2017–2018, student-led energy initiatives resulted in the installation of seven new renewable energy systems within the campus. The school's environmental impact has been reduced by 40 percent, according to their most recent annual report.

In fact, it consumes just 10 percent of the energy that other schools use.<sup>1</sup> Started in Indonesia with only a few students, the Green School currently serves more than 800 students aged 3–18, with plans to expand to New Zealand, South Africa and Mexico by 2021. Thus, the programme is building a strong community of children who are more curious, engaged and passionate about the environment at an early age.

<sup>1</sup> <https://www.greenschool.org/insights/world-economic-forum-schools-of-the-future-2020/>



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### Lessons learnt

With sustainability and ecological principles at the core, the Green Schools Programme is a remarkable example of providing an enjoyable and exploratory space for school-going children. Through real-world projects, the programme focuses on educating children for sustainability and create a young community of

passionate leaders. The programme can be replicated in countries like India where new forms of learning methods are being explored against the traditional schooling methods. The young demography, natural environment, low cost, and innovative thinking can help to transform education and learning methods in India.

## Annexure I

# Best Practices in Social and Organisation Innovation in Low-Income Settlements prepared in CITIIS

Project	City/Country	Project Description
Kudumbashree	Kerala, India	Kudumbashree is a poverty eradication and women empowerment mission commenced in 1998, with an aim to mainstream gender in local development processes in state of Kerala.
Open Building Prototype	Spain	The project investigated on turning parking garages – an existing generic typology in cities worldwide – repurposed for more productive uses. The simple open-plan structure of these sites allows space to be reconfigured into rooms without concern for supporting walls.
Promoting Safe Communities	Mumbai, India	Promoting Safe Communities programme in low-income settlements located in suburban localities in Mumbai focuses on comprehending the vulnerabilities, respective coping mechanisms, and building resilience in children living in the three settlements.
Community Water Plant and access to health services	Agra, India	Center for Urban and Regional Excellence (CURE), in partnership with Agra Nagar Nigam (ANN), District Urban Development Agency (DUDA) and FEM sustainable solutions focused on setting up a water treatment plant as a community business enterprise and provide affordable health care service to the poor.
Transforming women rehabilitation center into communal kitchen	Tehran, Iran	MAAN studio transformed women's rehabilitation center, a residential building into a 'kitchen' in order to increase the social participation and sense of belonging. The project aimed at facilitating social change with minimum costs through empowering women and celebrating their presence as productive members of society.
BaLA (Building as Learning Aid) Project	Gujarat, India	BaLA (Building as Learning Aid) is an innovative project aimed at improving the quality of elementary education by investing in school building infrastructure and developing child-friendly, learning and fun-based physical environments.

Project	City/Country	Project Description
Community Participation Project	Pondicherry, India	Community Participation Project involved bringing together communities through participatory mapping and data collection. The aim of the project was to building community trust, ownership and a collective sense of identity through participatory data collection.
Smart Education Interventions in Schools	South Korea	Initiated in 2012, the South Korean government formulated a strategic plan for SMART (Self-directed, Motivated, Adaptive, Resource enriched, and Technology) education for every student, irrespective of their socio-economic background.
Hippocampus Learning Centres	Karnataka, India	Hippocampus Learning Center (HLC) is an impact focused educational organisation that aims to provide high quality, affordable, coomunity-based kindergarten and after-school primary education services in small towns and villages in Karnataka.
Source Segregation for Solid Waste Management	Kochi, Kerala	Source Segregation of waste implemented by Kochi Municipal Corporation shows how source segregation, composting, stringent legal system coupled with multi-stakeholder participation leads to effective waste management in urban places which are devoid of adequate landfill spaces.
Nomadic Design Museum by Local Craftsmen	Mumbai, India	Mobile museum located in Dharavi, is an innovative urban research collective project that focuses on using design as a tool to promote social change, to create a meeting point for cultural exchange, and innovation amongst informal settlements and workers in Dharavi.
Education Reforms in Delhi Government Schools	Delhi, India	Education reforms in Delhi is a result of strong political will to transform education system in government schools. The reforms aimed at improving infrastructure, capacity building of teachers, improve learning gaps of children and strengthen parents-teachers bonds.
SPARK Schools: Scaling Affordable Excellence in South Africa	South Africa	SPARK Schools founded in 2012 by Stacey Brewer and Ryan Harrison, is a network of private schools offering affordable, globally competitive education. The founders developed a new model for South African education system that would provide access to high-quality education for all.
The Green School Programme	Bali, Indonesia	The Green School Programme, started in 2008, is best known for providing education to school children that promotes sustainability and ecological principles. Rooted in sustainability, the programme promotes real life learning through unique school curriculum for the children.

Project	City/Country	Project Description
Primary Health Center, Dharmapuri	Tamil Nadu, India	Primary healthcare centre is an innovative, high quality, comfortable, and low-cost health care project serving a group of villages. Designed by Flying Elephant architectural firm, the project is known for its sustainable design principles that uses simple and local construction materials to provide optimal environmental conditions for effective operations.
Community-based Waste Management in Low-income areas	Nairobi, Kenya	Community based waste management project in Nairobi is aimed to tackle the issues of public health and the environment in informal settlements in Nairobi. By employing women workers, the project utilises waste as a means of improving community environmental conditions and generate income through the sale of the compost.
Project Zero, Smart Schools by Harvard School of Education	United States of America	Under the Harvard Project Zero, the Smart School principles for good education are based on two guiding beliefs i.e., learning is a consequence of thinking, and good thinking is learnable by all students. Learning should include deep understanding, which involves the exible, active use of knowledge.
Planning by communities - The case of Svartlamon	Trondheim, Norway	Organised on principles of sustainable development with low standard and cheap rents, Svartlamon neighbourhood is a successful example of formalised collaboration between the resident's association and the municipality, to systematically plan a neighbourhood.



City Investments To Innovate, Integrate, and Sustain (CITIIS) is the main component of the 'Supporting Smart Cities Mission for a more Inclusive and Sustainable Urban Development in India Initiative' launched by the Ministry of Housing and Urban Affairs (MoHUA), Government of India in 2018. The program is supported by the Agence Française de Développement (AFD) and the European Union (EU), and is being coordinated and managed by the Program Management Unit (PMU) at the National Institute of Urban Affairs (NIUA). External aid to the tune of EUR 100 million has been provided to twelve Smart City SPVs in the form of loan, and EUR 6 million has been made available for technical support to the program.



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