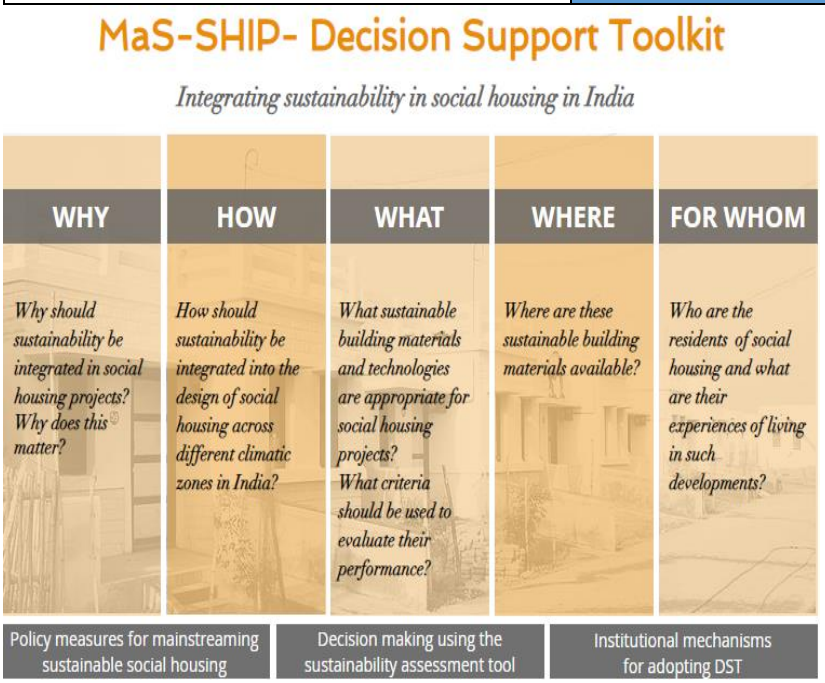
MaS-SHIP

Mainstreaming Sustainable Social Housing in India Project

Brief 3: Pathways to adopt the Decision Support Toolkit to mainstream sustainability into social housing| January 2019



SUMMARY

This brief describes the multiple pathways via which a Decision Support Toolkit (DST) can be adopted to integrate sustainability into social housing. Adopting the DST through various central, state, and local government bodies can support activities that range from improving the capacity of construction sector stakeholders to improved procurement practices to implement sustainable housing. An assessment of the way forward for the DST is articulated in conclusion.

1. Purpose of the Decision Support Toolkit (DST)

The purpose of MaS-SHIP's Decision Support Toolkit is to:

- Assist in better decision-making related to integrating sustainability into social housing
- Provide design guidance and tools to enable selection of sustainable materials and technologies for social housing projects
- Provide insights from social housing residents' experiences in five cities to better inform decision making

To fulfil such broad purposes, multiple stakeholders involved in housing design, construction, policymaking, and implementation will have to be meaningfully engaged. The implication is that there are multiple pathways through which the DST can be adopted. Key options are discussed.

2. CENTRAL GOVERNMENT

India's central government creates diverse laws, policies, and programmes that are often adopted by states. It is a feasible avenue to promote the DST because government approval or acknowledgement of such products builds its legitimacy and can increase the likelihood of uptake by state and local governments, along with private actors. Many central government ministries also cooperate with each other, thus support of the DST from one ministry has the potential of dissemination to others.

2.1. SUSTAINABLE HOUSING POLICY & ASSESSMENT

2.1.2. Ministry of Housing & Urban Affairs (MoHUA)

Key responsibilities for MoHUA include developing urban and housing policies and overseeing central government programmes on housing and urban issues.

Notably, MoHUA created a Housing for All – Knowledge Lab (HFA-KL) – a web-based platform – to serve as a repository of information, including on technologies and innovative designs, for local and state governments to reference and more effectively implement the public housing programme – Pradhan Mantri Awas Yojana (PMAY). To this end, the DST's catalogues, assessment tool, and design guidelines are resources that are well suited to be uploaded onto the "Capacity Building" section and contribute to the HFA-KL.

2.1.2.1. Building Materials & Technology Promotion Council (BMTPC)

The BMTPC is housed within the MoHUA. The Council researches and promotes new and innovative building materials and technologies. The body manages the Housing Technology Sub-Mission, to incorporate innovative and cost-effective building options into the PMAY.

In this context, the DST's technology catalogue can be considered by the BMTPC as a useful complement to its existing compendium of options under consideration. While there will be overlaps between the options in the DST and

the BMTPC's offerings, the DST's broader assessment of such alternatives against, inter alia, resource efficiency standards may enable the BMTPC to evaluate innovative alternatives from a more sustainable perspective.

In addition, the council's third party "Performance Appraisal Certification Scheme (PACS)" is a viable mechanism via which the DST could be adopted. The purpose of the PACS is to evaluate emerging materials and technologies that lack data. In turn, the evaluated product

- Can be promoted to prospective users
- Assist the Central Public Works Department (CPWD) in incorporating results into the Schedule of Rates as part of procurement guidelines
- Assist the Bureau of Indian Standards in leveraging findings to potentially review or formulate relevant Indian Standards

The DST's Sustainability Assessment Tool (SAT) could be presented to the PACS' evaluations committee to consider as a reference because of its wider range of environmental criteria that also retains a focus on innovation and cost.

Fig 1: Bawana Housing Development, Delhi (Case Study Report)

In addition, the DST's materials mapping component could be utilized to support BMTPC's efforts in building the markets for emerging technologies. Its platform allows for such a body to potentially leverage its resources to continuously add more information as new data emerges.

2.2. RECYLING RULES & RESOURCE MANAGEMENT

2.2.2. Ministry of Environment, Forest & Climate Change (MoEF&CC)

The MoEF&CC serves as the nodal agency for a variety of environmental programmes, and it develops policies that range from sustainable resource development to pollution abatement. It is also the contact point for international bodies such as the United Nations Environment Programme.

The DST can be considered applicable to the extent that it can help in refining MoEF&CC's ongoing development of rules and regulations pertaining to Construction & Demolition Waste Management Rules.

In particular, the DST's findings on resource extraction during materials manufacturing could assist the MoEF&CC in making optimal adjustments to existing portions of recycled materials that are mandated to be used in construction, such as Fly Ash Bricks. In fact, the DST's assessment of a wider set of materials could help the MoEF&CC in expanding its range of mandatory options.

Fig 2: Laggere Housing Colony, Bangalore (Case Study Report)

2.2.2.3 Indian Resource Panel (InRP)

Recently, the Indian Resource Panel was also constituted, and housed within the MoEF&CC. It studies strategies and has developed a roadmap for improving India's resource efficiency in multiple sectors. The DST's findings in urban housing could be presented to the panel to help its upcoming initiatives in advancing resource management.

2.3. ENERGY EFFICIENCY & CONSERVATION

2.3.1. Bureau of Energy Efficiency (BEE)

The BEE assists in developing policies and strategies to reduce the intensity of energy consumption in India's economy. The BEE's key initiative has been the development of the Energy Conservation Building Code (ECBC) for commercial buildings, setting minimum energy efficiency standards for Building Envelope, Lighting, Heating Ventilation and Air Conditioning (HVAC) Systems, Electrical Systems, and Solar Hot Water Heating. A variation of the code is to be expanded to residential buildings. In addition, the BEE is developing an incentive programme for residents to enhance energy efficient practices.

Elements of the DST, including its design guidelines, could be used by the BEE as a supplementary educational resource for residents to adopt sustainable practices. Given the BEE's broader roles in promoting energy conservation, the resources of the DST could assist in these endeavours.

2.4. LABOUR & ECONOMIC DEVELOPMENT

2.4.1. Ministry of Skill Development & Entrepreneurship (MSDE)

MSDE's National Skills Development Corporation (NSDC) is mandated to strengthen the skills landscape in India. In particular, it incubates multi-stakeholder Sector Skills Councils (SSCs) to, inter alia, identify skills development needs in priority sectors.

For housing development, the Construction Skill Development Council of India (CSDC) contributes to the development of National Occupational Standards (NOS), Curriculums and Assessment Guidelines, as a way to bridge the gap between industry demands and requisite skills. The

DST's enumeration of requisite skills to adopt sustainable options, particularly emerging technologies, could be referenced by such a body as standards and guidelines are updated and refined.

2.5. HOUSING FINANCE

2.5.1. National Housing Bank (NHB)

The NHB primarily provides housing refinance, as part of its broader set of initiatives that range from developing strategies to improve access to credit for low income populations to promoting an integrated housing finance system. NHB's interventions, such as the Solar Subsidy Scheme, conceived to invest in Solar Water Heating and Lighting Systems, demonstrate the organization's commitment to sustainability related initiatives. As such, the DST could be presented to the NHB, with a focus on how it can help measure "Impact." That is, the DST's SAT helps calculate the costs of investing in sustainable materials and technologies and measure returns. NHB's support could induce uptake of the DST in the private sector as well.

Fig 3: Kiron Ki Dhani Colony, Jaipur (Case Study Report)

2.5.2. Housing & Urban Development Corporation (HUDCO)

HUDCO also has an established history of providing long term loans for housing construction. Similar to NHB, the DST could be leveraged by HUDCO to measure impact of investments as well. Its technical wing, Human Settlements Management Institute (HSMI HUDCO) is potentially well suited to engage with the DST.

3. STATE & LOCAL GOVERNMENTS

States retain constitutional prerogative over urban development and play a dominant role in social housing delivery. Local governments, often with the help (or explicit intervention) of states, carry out enforcement functions related to planning and housing, and develop local plans and by-laws. They are also implementing central housing programmes, such as the Pradhan Mantri Awas Yojana (PMAY). In addition, states, such as Bihar have recently taken proactive environmental measures, such as banning clay bricks, and instead, promote Fly Ash Bricks (UNI, September 2, 2018).

Fig 4: Shanti Kusth Ashram, Dehradun (Case Study Report)

Such varied functions present additional channels via which the DST could be adopted, contributing to the implementation of sustainable housing development in cities. The following examples are some key pathways that the DST could assist in more informed decision making.

3.1. PROCUREMENT

3.1.1. State Housing Boards

State housing boards or other parastatal agencies often contract out social housing construction to private companies on the basis of procurement guidelines that require compliance from developers.

The DST could be used by some states to develop sustainability criteria for building materials and incorporate it into their procurement guidelines and implementation of central housing programmes. This would require private housing providers to allocate resources for more sustainable options. The DST's cost calculations of materials (in the SAT) could support developing financial incentives to offset potential costs incurred by developers while retaining consistent supply. Targeting housing boards also helps connect the DST to social housing developers, who typically operate in otherwise, difficult to penetrate networks.

3.2. APPROVAL PROCESS

3.2.1. Various State Agencies

Some states, sometimes with guidance from the centre have taken steps to expedite the approval of construction through simplifying its processes. However, expedited construction runs the risk of neglecting environmental review. As such, the DST's SAT can potentially be used to refine the streamlined processes to ensure factors such as resource efficiency in housing construction are retained as conditions for approval.

3.3. PLANNING, ENFORCEMENT, TRAINING

3.3.1. State & Local Planning Departments

Many states lack integrated approaches to planning, including inconstant merging of housing with land-use and transportation. In particular, local governments are poorly equipped to fulfil such responsibilities. They also cannot effectively enforce complex building code and by-law requirements. This is because such bodies are too fiscally constrained to secure the appropriate personnel.

The DST's design guidelines and backgrounders on "Why Sustainability Matters in Social Housing" can be used as supplementary material in planning departments to more effectively incorporate housing into planning decisions. The DST's Residential Insights can also help planners make refinements to existing approaches that incorporate participation in planning and housing decisions.

In addition, such information, along with the DST's catalogues and assessment tool can help policymakers with crafting more sustainable building by-laws. By extension, the DST can be used as a basis to develop a simple training programme for local officers to enhance their enforcement and monitoring capabilities.

3.4. ECONOMIC DEVELOPMENT

3.4.1. State Industrial Development Bodies

Many states have a long tradition of making considerable investments in economic development, often through skills training and supporting Medium, Small, & Micro Enterprises (MSME's). States such as Tamil Nadu have well developed programmes to support MSMEs. The DST could be considered in such states where its resources on the labour, cost, and supply chain components of various technologies can inform incubation and scaling up of local firms that are developing sustainable building materials and technologies.

4. RATINGS & SCORECARDS

There are numerous ratings agencies, out of which two of the most widely recognized in India are considered for.

4.1. Green Ratings for Integrated Habitat Assessment (GRIHA)

GRIHA provides a voluntary rating system that scores the environmental performance of various buildings, including smaller housing units, over its entire life-cycle. It routinely reviews the ratings to make improvements and refinements to enhance sustainability in buildings. The GRIHA Council's Technical Advisory Committee (TAC) is tasked with fulfilling such reviews. The DST's SAT can be presented to the committee to cross reference and potentially refine existing measures pertaining to material and design specifications.

4.2. Indian Green Building Council (IGBC)

The IGBC, housed within the Confederation of Indian Industry (CII), provides a function similar to the GRIHA Council, by developing metrics for various buildings to advance a sustainable built environment. It emphasizes measures on sustainable resource use in building construction and use. The council is also a possible pathway to adopt the DST such that the tool can assist in making refinements to its ratings system.

5. EDUCATIONAL INSTITUTIONS & THINK TANKS

The DST's educational value and interactive platforms provide opportunities for knowledge exchange and supporting communities of practice in universities, think tanks, and NGO's involved in sustainable housing development. Furthermore, features such as the SAT and materials map, if modified, could give such organizations the opportunity to contribute with their own data to continuously improve the tool.

6. THE WAY FORWARD

The DST's design retains a level of complexity that may present barriers for smaller developers to effectively use. As a starting point, the DST could be piloted by agencies that are implementing housing programmes, which, in turn, would also involve private actors, such as developers, in engaging with the DST. This would present an opportunity to test its usability and steps needed for refinement and modification. That is, new approaches will likely have to be forged to develop the DST into more customizable formats. This could also inform the development of strategies to more effectively penetrate the informal sector with a customized tool.

Broadly, the pathways present various options for the DST to be adopted, tested, and refined. In addition, some buy-in from one government body could potentially increase the likelihood of adoption by other bodies. This would also be contingent on a coherent dissemination strategy.

Note: The references used in this document can be found here

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MaS-SHIP

Mainstreaming Sustainable Social Housing Project in India (MaS-SHIP) is a two-year initiative developed to promote sustainability in terms of environment performance, affordability and social inclusion in social housing, funded by United Nations Environment Programme (UNEP) 10 Year Framework of Programme on Sustainable Consumption and Production (10YFP).

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