WORKSHOP ON GUIDING EPR IN MAHARASHTRA

Report

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Workshop hosted by
Tata Trusts & CRT

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1. Executive summary

An estimated 150 million metric tons of plastic waste are in the ocean today, and every year an estimated 8 million metric tons more are being added[1]. With oil prices at an all-time low, coupled with growing population levels and economic prosperity, plastic production and consumption are predicted to double over the coming decade. Without immediate intervention, 250 million metric tons of plastic waste could be in the ocean in fewer than 10 years[1]. This problem warrants a collective global response. Although not easy, this problem requires all stakeholders — government, development finance, the private sector, grant funders, private investors, academics, and civil society and community organizations — work together using all available means.

Every lever must work effectively: from reduction and reuse to innovation in product redesign and the fundamental components of waste management — collection, recycling, treatment and landfill disposal. When these solutions meet, an enormous leap forward will be made in protecting the ocean, the climate and public health. With this objective in mind, Tata Trusts hosted a day long workshop focused on bringing these stakeholders under one roof and devise sensible and sustainable solutions and policy recommendations for the Government of Maharashtra to tackle the problem of solid waste and EPR.

Our report highlights recent advances in EPR and to provide recommendations for the stakeholders involved in this market. It also discusses pending issues in the current practice of EPR with a focus of recent discussions on implementation. Then, based on the discussions amongst the stakeholders present during the workshop, we analyze the perspectives and key concerns regarding EPR implementation.

This report does not have all the answers. It does not prescribe specific business models or technologies for specific places. It does lay out a blueprint for a collaborative effort to create the right conditions for sensible, innovative waste management and EPR implementation techniques.

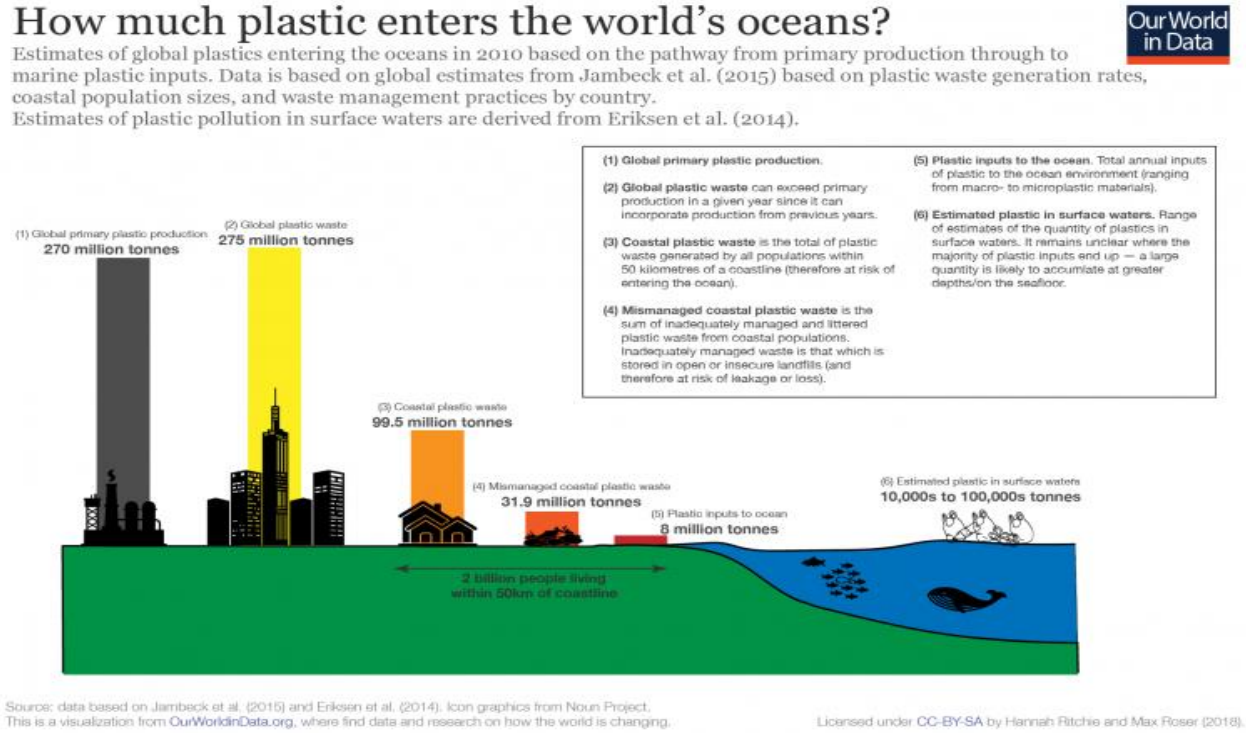
1. J. R. Jambeck, R. Geyer, C. Wilcox, T. R. Siegler, M. Perryman, A. Andrady, R. Narayan, and K. L. Law, “Plastic waste inputs from land into the ocean,” *Science*, vol. 347, no. 6223, pp. 768–771, 2015.

2. Looking back

2.1. Plastics in the environment

Plastic has become a ubiquitous part of daily living and can offer lifecycle benefits — both economic and environmental — for the products they protect. However, the very qualities that make plastic so useful — its unmatched strength, light weight and low cost — also make it problematic once it is discarded. Plastic waste is making its way into the world's ocean, where it can take centuries or longer to completely decompose. Once in the ocean, plastics merge with the biosphere. It has been documented that plastics affect nearly 700 species, from plankton to whales[2].

Less than 20 percent of leakage originates from ocean-based sources like fisheries and fishing vessels. This means over 80 percent of ocean plastic comes from land-based sources; once plastic is discarded, it is not well managed, and thus leaks into the ocean.
To fix the plastic waste problem, and in turn ocean plastic inputs, the problem of waste management must be solved. Doing so improves more than ocean health. It can increase economic and job growth, make people healthier, and reduce emissions of toxic and greenhouse gasses.

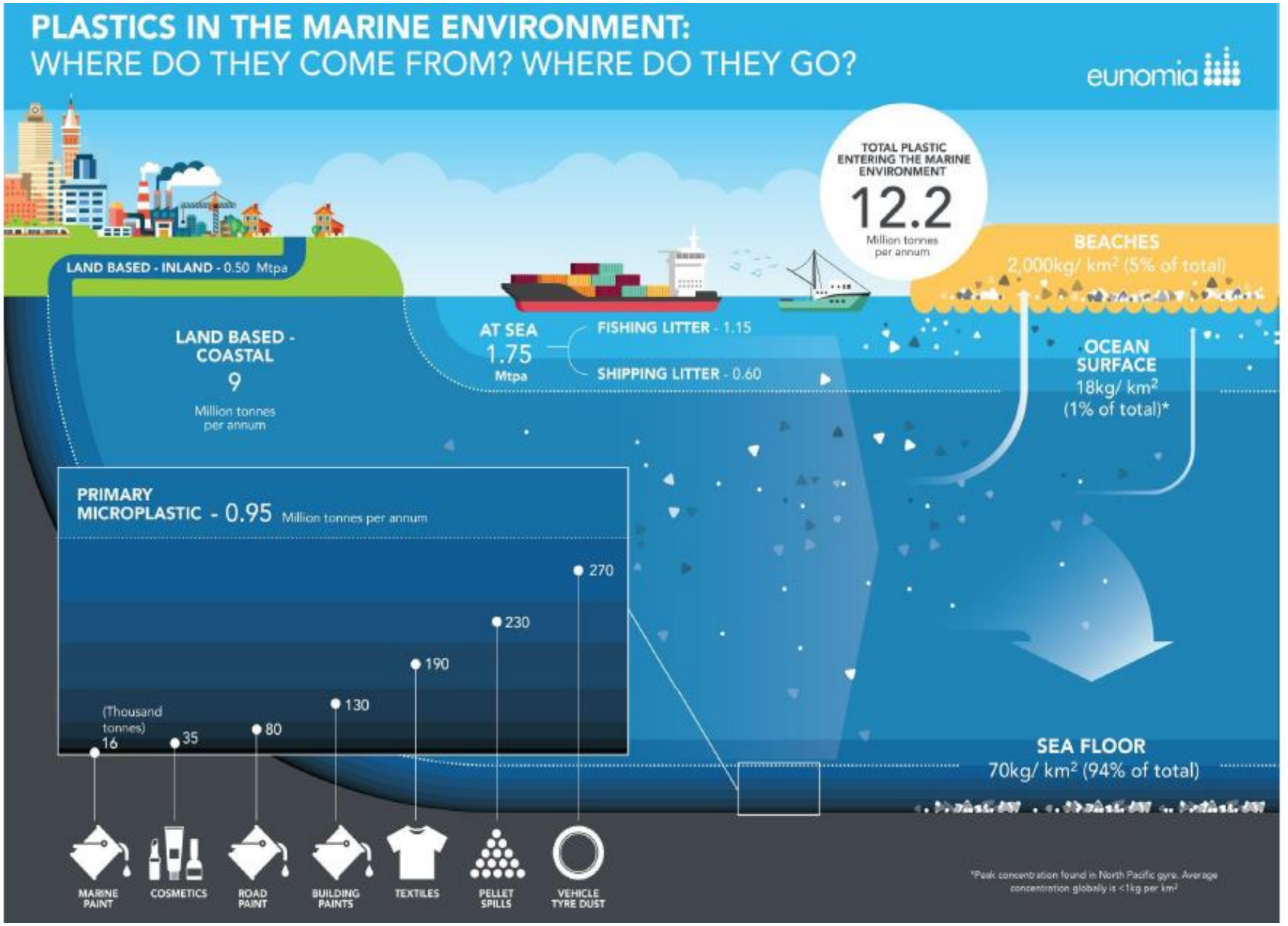


Plastic waste management is also a huge problem in India. More than 15,000 tons of plastic waste are generated across India every day. Out of this, only 9,205 tons of plastics, which correspond to approximately 60% of the total quantity generated, are recycled. Plastic waste disposal methods are basic and uninformed and further exacerbate the challenge.

Massive population explosion, absence of urban city planning, and an overall shift in people's lifestyle are a few of the abundant reasons which are leading to huge overflows in India's landfills today. With a population of approximately 1.2 billion people and 62 million tons[1] of Municipal Solid Waste being generated annually, the lack of infrastructure for waste treatment means much of the waste ends up on Indian streets and in landfills. Given its ubiquity and immense environmental ramifications, the problem in question is finally catching on and demanding the attention it so badly needs.

2. S. C. Gall and R. C. Thompson, "The impact of debris on marine life," *Mar. Pollut. Bull.*, vol. 92, no. 1–2, pp. 170–179, 2015.

2.1.1. Plastics in the Marine environment



2.2. Initial Motivation and Objectives of Extended Producer's Responsibility ('EPR')

Over 20 years ago, the idea that producers should finance the collection and recycling of their products and packaging at end of life began to globally transform waste management policy and practices. Initially conceived in the early nineties, extended producer responsibility (EPR) was intended primarily to provide incentives for producers to design products more easy to reuse and recycle, with fewer and less hazardous materials to discard at end of life. In addition, EPR was expected to support improved collection, recycling and treatment of waste. Unlike an eco-tax, the scope of EPR was not limited to financial obligations for producers, but also included information, logistics, waste management and even product design responsibilities.

2.3. Development of EPR

EPR is a concept where manufacturers and importers of products bear a significant degree of responsibility for the environmental impacts of their products throughout the product life-cycle, including upstream impacts inherent in the selection of materials for the products, impacts from manufacturers' production process itself, and downstream impacts from the use and disposal of the products. Extended producer responsibilities have a rich history in the West across different industries and product categories.

In some of the developed and developing countries, the introduction of EPR and deposit-return schemes have proven to be effective in reducing littering from polyethylene terephthalate (PET) bottles while boosting the recycling sector. Some of the countries where the responsibility for recycling PET bottles has been successfully embraced by the manufacturers are Germany, Japan and South Africa.

IN EUROPE, THERE IS PRECEDENCE FOR PLASTIC-GENERATING CORPORATIONS TO ESTABLISH PRODUCER RESPONSIBILITY ORGANISATIONS (PRO) WHICH COME TOGETHER TO TAKE BACK WASTE FROM THE CONSUMERS.

LONG-TERM AGREEMENTS WITH PRO CAN ESTABLISH MARKETS FOR COLLECTION, GUARANTEED BY SECURED REIMBURSEMENTS FROM BRANDS WHO ARE LIABLE TO PAY FOR COLLECTION AS PER THE POLICY.

The Indian 2016 Plastic Waste Management Rules also address the question of EPR. They mandate plastic producers, importers and brand owners to contribute to the collection of plastic waste that is introduced by them. However, the rules do not lay out specific targets that have to be adopted by these entities. The EPR guidelines for e-waste have been made much more explicit, with fixed targets for producers and distributors of electronics.

Plastic bans have been announced in 17 States but have seen limited success. Pilot EPR schemes have been implemented but need greater clarity on roles and also establishment of penalties. However, progress has been less certain: at present, EPR obligations are largely being met on a sporadic and scattered basis under CSR. Certain companies are establishing contracts with agencies and NGOs to fund the collection and storage of plastic waste from mostly urban areas. These partners then supply this plastic waste to recyclers or cement kilns, typically. To make these processes more systematic and regular, there is a need to clarify the role of brands and producers and establish their liabilities. Targets must be issued by central or state bodies for plastic producers and manufacturers to collect and reintroduce minimum proportions of their contributed waste.

Maharashtra government, on June 23, 2018, put a ban on the use, sale and even storing of a variety of plastic products such as plastic bags and single use plastics like forks and food wrapping.

3. Workshop

3.1. Context and objectives

EPR is a powerful tool in helping to resolve the solid waste management crisis that the country and the world is facing. However, it requires careful planning, experimentation, impact assessment, restructuring and horizontal deployment for effective enforcement and implementation across the state. The workshop aimed at exploring the recent advances in EPR in the state of Maharashtra and to provide recommendations for the stakeholders involved in this market. A broad agenda of the day as been detailed in **Exhibit 2**.
The key objectives of the workshop have been listed below:

- Bring together the key stakeholders under one roof to understand the intersection of various challenges and barriers to development of EPR faced by each stakeholder
- Kick-start a pointed discussion for devising the strategy for implementing EPR in a manner that results in best practices for the state and the country
- Join forces at the national and state level to devise effective methods of implementation of EPR

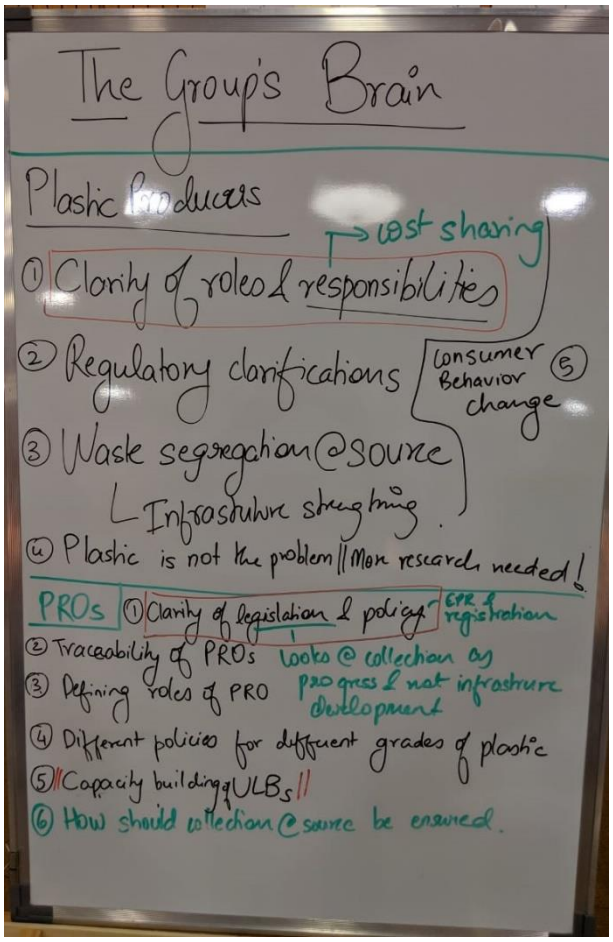
3.2. Stakeholder map

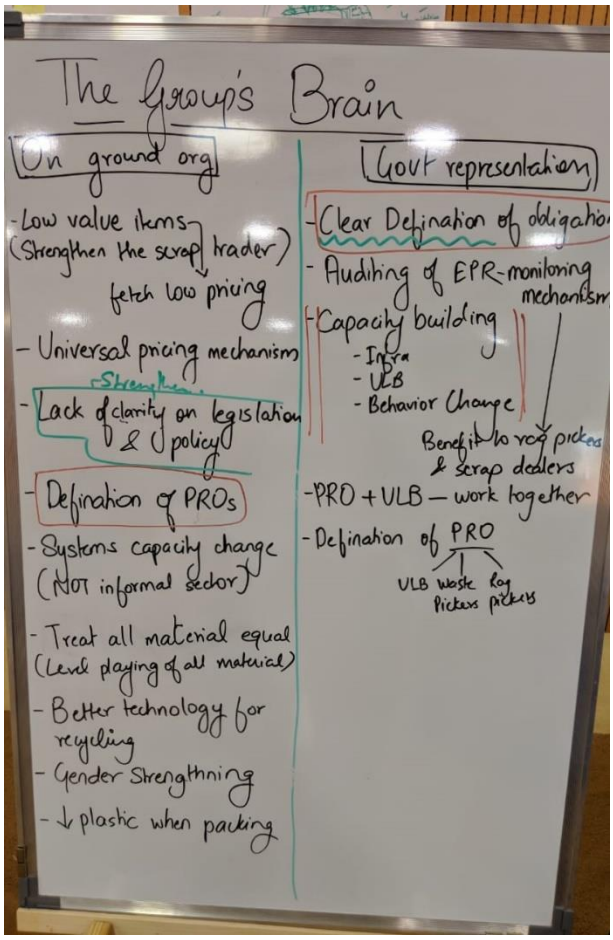
As an organization dedicated to sanitation, Tata Trusts planned a day-long focused group discussion with representatives from Government, Producer Responsibility Organizations ('PROs'), brand owners / plastic producers and on-ground organizations (A detailed list of participants and their grouping is provided in **Exhibit 1)**.

Roles and responsibility of key stakeholders in the EPR eco system

Government	PROs	Brand Owners	On-Ground Organisations
•National authorities (regulatory bodies and enforcement agencies) are responsible for translating national requirements into national laws and making sure that the targets imposed by EPR Directives are achieved. •They also develop and implement audits and monitoring of the collection and recycling systems. •They also organize and oversee the establishment of local collection points and processes •They also decide the financial value of the waste collected	•Producer responsibility organizations (PROs) serve as intermediaries that facilitate a producer's compliance by organizing the necessary collection and recycling activities on the ground. •Within a PRO, primarily a European concept, the producer's responsibility of managing the waste is transferred to the PRO. A PRO's aim is to bring in more efficiency, cost-effectiveness and awareness while managing the end-to-end operations associated with waste management. A key feature driving an effective waste management under this arrangement is targeted approach towards waste management.	•Producers are the main stakeholders in EPR as they bear the responsibility for financing or operating EPR implementation at the national level. Their preferences rely heavily on having a simple, stable and cost-efficient implementation which ensures that all actors are playing on a level field.	•Waste operators constitute the primary operational arm of EPR implementation. They collect, consolidate, transport and manage the recycling of waste for producers. •Some waste operators also run collection and recycling operations outside the EPR system, primarily for B2B customers. •The cost effectiveness of EPR implementation depends on the capabilities and technological expertise of waste operators, as well as the level of competition between them.

3.3. Key issues and solutions identified





One of the primary reasons why such a diverse group had been put together was to understand the problems emerging in the EPR space from all perspectives. The following key issues were identified pursuant to the detailed discussions during the workshop:

i. Lack of regulatory clarifications and increased legislative complexity
ii. Non-standardisation of waste value
iii. Lack of capacity building and infrastructure development
iv. No integration of the informal sector in the formal value chain
v. Absence of awareness
vi. Creation of a stronger waste management system

In the section below, we present the issues in a summarized fashion as issues identified meet the solutions mapped by the stakeholders in the room:

Lack of regulatory clarifications and increased legislative complexity

PROBLEMS IDENTIFIED

- While the Government of India and Maharashtra have taken substantial measures for ensuring there is clarity within the country/ state regarding the laws governing EPR (like setting up of the 'Core Committee'), implementation of EPR has set in without strict laws around it. This has in turn led to confusion and concern amongst the stakeholders. Clear rules and regulations which detail out all stakeholder's roles and responsibilities and establish the place of the stakeholders within the eco-system on EPR is the need of the hour
- Additionally, the stakeholder's roles and definitions are not standardized between the centre and the state which has led to a disparity in understanding amongst the stakeholders
- *Example: It is also important to define who are the plastic producers. Currently. the onus is on 'brand owners', but, the brand owners believe that consumers must also be considered as producers of plastic waste. And hence, it would be unfair to expect the brand owners to bear the entirety of the cost of ensuring circularity of plastic.*
- *Example: CPCB currently mandates "Minimum 5 years' experience in Waste Management (Municipal Solid Waste & Plastic)" and "Success stories for disposal of Municipal Solid Waste & plastic waste", which defers additional new players from entering into this space and help solve the problem.*
- Currently, there are no restrictions levied on the ban of incineration of waste in landfills which has led to increased impact on air quality across the country
- Uncertainty about future EPR regulations increases risk for businesses

MAPPING THE SOLUTION AND STAKEHOLDERS' RESPONSIBILITY

1. *Stakeholder: Government*

- Establish a body/ consortium of various stakeholders who play an important role in shaping the EPR policy at the Centre and State level. This body should follow a loop back process to take into consideration the point of view of all the stakeholders in question. This body must also ensure that there standardisation of policy between the Centre and the State
- State and center will also determine regulatory price that will build capacity and empower waste pickers
- Producers who are using eco-friendly or recycled packaging material must be incentivized. Further, current packaging design needs to be upgraded to use lesser plastic.

2. *Stakeholder: Government and Plastic producers / Brand owners*

- Creation of a Special Purpose Vehicle ('SPV') regulated by the Government
  - The SPV will be coined with the objective of ensuring hygiene management of the state through the adoption of innovative and scientific methods and proven technology, adhering to the concept of active participation of the public and private sectors.
  - The SPV, while being regulated by the Government, will not be run exclusively by the Government. Corporate bodies, Scrap dealers, PROs, Service Providers, ULBs shall all form a part of the SPV
  - A new SPV shall be formed in every state. The entire waste management system of the state shall be the mandate of this SPV
  - The SPV shall also be responsible for determining the buy-back price of different kinds of waste
  - The SPV shall design the life cycle of the waste basis consultations with various experts and ULB
  - With funding from private sectors as well as ULBs, this SPV shall invest in the MRF and shall be the only authority that regulates the MRFs in that state

Non-standardisation of waste value

PROBLEMS IDENTIFIED

- The major source of plastic pollution on the streets remains to be the type of plastic that does not get picked up due to its low value. The existing value chain does not facilitate picking up of these low value plastics since no scarp dealers provides an adequate price for these items. If a market is created for MLPs and other low value plastic, collection will adequately follow
- India does not have an abundance of PROs and due to the strict regulations (as discussed above) and a lack of an eco-system to thrive in. As a result, the few existing PROs created a closed market to dominate prices and hence block the entry for any new players. Standardization of pricing would be necessary to curb this situation
- Plastic is one of many types of waste that exist in the eco-system that needs to be dealt with. However, the government has levied additional focus on plastic and discarded the necessity of ensuring circularity and adequate recycling of all other types of waste. To treat the problem to its core, all types of waste need to be treated as an equally hazardous threat to our environment and adequate value needs to be attached to the same.

MAPPING THE SOLUTION AND STAKEHOLDERS' RESPONSIBILITY

1. *Stakeholder: Government*

- The regulatory body/ empowered committee that will be formed by the government must ensure that low value plastics as well as other forms of waste are attributed with adequate value so that they get absorbed into the recycling system. This will help build capacity of the waste workers as well as organisations that's work on ground.
- Post the collection, supporting infrastructure for recycling of low value plastics will also need to be built.
- Standardisation of pricing is also necessary to ensure new PROs are encouraged in the eco-system.

Lack of capacity building and limited infrastructure development

PROBLEMS IDENTIFIED

- Lack of institutionalization of EPR due to lack of awareness and knowledge in this space
- At this stage, PROs and ULBs are working in silos which leads to duplication of effort and does not complete the value chain of waste management
- The current infrastructure around waste management lacks transparency and accountability. The information related to the circularity of waste is not readily available to the brand owners which leads to a lack of trust in the existing system of waste management.
- Due to relative freshness of the concept of a 'PRO', there aren't adequate incentives/ tax benefits put into place by the Government to incentivize them to work in tier II and tier III cities
- Segregation between normal and hazardous waste is a big challenge for waste pickers and adequate measures need to be undertaken for ensuring the safety of the waste pickers dealing with hazardous waste
- Within the current ecosystem, there is a clear lack of trust between the legislators and the waste pickers because the legislators do not have clarity on the flow of the life of the waste.

MAPPING THE SOLUTION AND STAKEHOLDERS' RESPONSIBILITY

1. *Stakeholder: Government, Plastic Producers/ Brand owners and Philanthropies*

- The government and private players need to focus funds and energy towards institutionalizing EPR which includes deriving formulas for calculation of EPR, categorization of waste, what constitutes as fulfilment of EPR and what does not, liability of producer, etc.
- Capacity building of ULBs play a major role in ensuring optimum facilitation of EPR policies. Capacity building activities must include streamlining of activities undertaken by the ULBs, ensure integration with the informal sector and strengthening of the door to door collection undertaken by the ULBs.
- Brand owners should put in more funds for the research of sustainable products and sustainable packaging for existing products. These initiatives should also be backed by tax incentives for the brand owners

2. Stakeholder: Government

- The primary focus of EPR at this stage has been tier I cities because of availability of manpower and resources. The group strongly agreed that with the focus shifting to tier II and tier III cities, a large part of the waste management problem can be solved at a much lesser cost and lesser manpower usage. EPR regulations should account for incentives for PROs to work out of tier II or tier III cities, villages and hilly areas which are frequented by tourists.
- The targets of the government should go beyond material recovery. They should concentrate on redesigning the infrastructure and stronger behavior change campaigns for consumers and ULBs

3. Stakeholder: PROs and ULBs

- PROs currently do not play any role in working at a ward level to strengthen the ULBs. PROs and ULBs need to work hand in hand to resolve the problem of waste segregation and ensure scientific disposal of waste by building a value chain around the same
- Digitizing the waste value chain by the PROs would act as a key building block in strengthening EPR and would ensure data collection is optimised. This would also lead to increased trust in the waste management system by the brand owners which would increase investment in recycling

4. Government and ULB

- *Implementation of integrated waste management system in a semi-urban area*
  To ensure and effective implementation of EPR policy, the larger issue of solid waste management must be addressed. The group believes in building a robust solid waste management system backed by the local ULBs before diving in solving EPR. For the purpose of piloting their solid waste management solution, they came up with the below roadmap:
  - Pilot to be carried out in *Shegaon* which has a population of 1 lakh floating residents and approximately 60,000 permanent residents
  - The pilot would be started off by conducting a current waste audit by a third party agency
  - Pursuant to analysis of the waste audit, the would decide on the plan for training and capacity building of the ULBs
  - After an exhaustive route mapping exercise, the optimum route for the flow of waste would be determined
  - In parallel, behavior change campaigns would be launched to raise awareness and promote waste segregation amongst the residents of Shegaon
  - After waste is collected at a household level, it should be transferred to a Material Recovery Facility ('MRF') wherein there would be a price allocated to every "reject". This MRF would be run and maintained by the ULB
  - Further, they would build out policies and regulations for the scrap dealers in consultation with the local ULBs
  - EPR would be plugged into the last stage of waste processing where the waste from the MRFs would be transferred to its respective end of life cycle and generate a certificate for its recycling

No integration of informal sector in the formal value chain

PROBLEMS IDENTIFIED

- The informal sector is the backbone of the waste management eco-system in India. It is extremely important for informal sector to be well integrated with the PROs to ensure promotion of the recycling economy. Promoting the recycling industry will not only be beneficial for the environment but also help generate jobs and reduce dependency on scrap imports.
- The current ecosystem does not promote integration of the formal economy of waste recycling with the informal sector of waste pickers. The current system in itself has created imbalance by promoting a parallel informal organization.
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MAPPING THE SOLUTION AND STAKEHOLDERS' RESPONSIBILITY

1. *Stakeholder: Government and ULB*

- There exists a widespread notion that the informal sector's capacity needs to be built to help them absorb into the system. However, the informal sector has been doing its job since years and probably the system's capacity needs to be upgraded to absorb the input from the informal sector
- As a policy, EPR cuts across a multitude of stakeholders and accordingly, the voices of representatives of all stakeholders must be taken into account while devising the policy. For example, while the informal sector collects 90% of the waste, there is no representation of this group in national committees at CPCB. Accordingly, adequate representation is necessary for the informal sector.
- Additionally, ULBs should streamline the existing value chain and integrate it with the work done by the informal sector. The NGOs that work with the informal sector should also be recognized as PROs by CPCB and other state pollution control boards.
- The work done by the informal sector must be adequately documented (for example: with case studies on role of waste pickers in India) and showcased to ensure awareness in the country about the role of the informal sector in the waste management sphere.

Absence of awareness

PROBLEMS IDENTIFIED

- The packaging of products is usually in line with consumer expectation in order to maintain product integrity. According to the brand owners, the consumers play a major role in the value chain and hence they should be held equally accountable for their actions.
- In the current regulatory environment, plastic has been type casted as the “villain”. However, e-waste and sanitary waste have been completely left out of this discussion. We must take a step back and identify whether EPR for plastics is the right step or should we be concentrating on the larger problem of waste management and working towards building capacity of the ULBs.

MAPPING THE SOLUTION AND STAKEHOLDERS’ RESPONSIBILITY

1. *Stakeholder: PROs and ULBs and Philanthropies*

- Changing consumer behavior with respect to expectation of packaging as well as making them accountable for ensuring waste reaches its end of life cycle will ensure a cleaner future for India.
- ULBs must ensure that the consumer segregates waste at source and hence starting the chain of full circularity of waste.

4. Way forward: Key learnings and takeaways

4.1. The path ahead

Good waste management begins at the product design stage, with a real priority on waste reduction and product end of use. Once a product is thrown away, the emphasis shifts to a carefully integrated waste management system. The front end (collection and separation) determines the technical and economic viability of the middle of the waste value chain (recycling and treatment) before final disposal at the back of the chain (landfill). Increasing the collection rate and quality increases the quality of feedstock for recycling and other technological solutions that create value from waste that would otherwise pollute landscapes, waterways and the ocean. Thus, the performance of the waste management system's technical, environmental and economic dynamics must be accelerated. The aim of future waste management systems is to maximize value and minimize costs in order to reduce the deficit of net cost areas of the waste value chain — collection, separation and landfill disposal — to the point that the system is economically sustainable, or until the deficit better matches people's willingness and ability to pay for it as a service.

Though collection, recycling and treatment innovation are critical pieces to reducing plastic waste leakage dramatically, future innovations that may evolve in this space cannot be predicted. Instead, the right conditions for reducing barriers to innovation must be created. Performance improvement will primarily be a function of the following investments, all of which are designed to increase the value of the waste stream significantly:

- Design and fund a collection and separation system with an eye to the recycling and treatment technologies of the future.
- Grow recycling demand by designing more products for profitable recycling, and provide both positive and negative incentives to increase the use of recycled feedstock where feasible in product manufacturing.
- Support programs for the social and economic inclusion of waste pickers into waste collection, material recovery facility (MRF), separation and treatment opportunities, thereby providing safer working conditions while maintaining or improving livelihoods.
- Accelerate development and commercialization of technologies that permit highly efficient conversion of non-locally recyclable plastics into virgin-quality feedstock or other valuable commodities.

Each location, from large urban cities to small rural villages, will require a different solution to its unique waste management challenges and opportunities. Adaptation, evolution and innovation will be required over the coming decade and beyond.

However, the cost of financing waste management is unlikely to be carried by the public alone in rapidly developing economies because of the competition for scarce public resources needed to address numerous areas of developmental concern. Sensible economic support for waste management is necessary for it to ultimately succeed. The issue of plastic waste in the ocean is complex, but solutions built on robust science and the concerted efforts of individuals, businesses, governments and civil society organizations are at hand.

4.2. ***Stakeholder Responsibility***

Basis the discussions during the day, this section provides a pragmatic way forward for implementation of a successful EPR and waste management policy framework for the key stakeholders.

a) <u>For the Government/ Policymakers</u>

- *Regulatory Clarifications*

  Currently, EPR obligations are largely being met on a sporadic and scattered basis under corporate social responsibility (CSR). During the problem solving session of the day, all groups (refer **Exhibit 2** for the distribution of groups) unanimously agreed that robust and clear regulations need to be put in place for implementation of EPR.

  Clear rules and regulations which detail out all stakeholder's roles and responsibilities and establish the role of the stakeholders within the eco-system is a pre-requisite.

  Additionally, State and Center should also determine a regulatory price for buy-back of the waste that ensures that waste pickers are paid fairly.

- *Landscape diagnosis*

  It is vital to assess the baseline conditions of the cities to gain a clear understanding of the issues to be addressed. Policymakers must consider questions such as – what are the most problematic single-use plastics that require an immediate action, what is the extent of the problem, what are the health and environmental impacts of using single-use plastics and what is causing the problem currently.

  It would be ideal to estimate the consumers' willingness to shell out money for a certain goods or services. For example, setting a high-valued tax to discourage consumers from asking for plastic bags.

- *Multi stakeholder engagement*

  Understanding the perspective of all stakeholder groups and acceptance from them is of true importance. The policymakers must take inputs through policy discussion meetings and awareness campaigns. Typically, the stakeholder groups would include - national and local government entities, national waste management authorities, pollution control boards, trade and industry associations, single-use plastic producers, retailers, citizens and organized civil society groups as well as environmental NGOs.

- *Tax incentives*

  The policymaker's task doesn't end at bringing in a new and improved legislation. It is important to improve and leverage what is available in the market, readily. Boosting the local recycling industry by providing them tax incentives to shift focus to tier II and tier III cities and creating job opportunities in the plastic recycling industry are important aspects of creating a structured waste management system.

  Further, the government can levy an environmental tax on all manufacturers of plastic bottles/multi-layered plastics (MLP), based on their production capacity and actual production at the start of every financial year. Taxes will be collected and maintained in a separate account by the government. In addition to this, there can be a tax reduction slab as well, based on the quantity of plastics recycled by individual companies. The more they recycle, the more that tax is reduced. If the plastic industry collectively recycles more than 95% of the produced capacity, then they do not have to pay the taxes.

Also, a separate tax can be levied on usage of virgin plastic material by the plastic industry. This will encourage them to extensively use recycled plastic in the products manufacturing.

- *Strengthening of the ULBs*
  Capacity building of ULBs play a major role in ensuring optimum facilitation of EPR policies. Capacity building activities must include streamlining of activities undertaken by the ULBs, ensure integration with the informal sector and strengthening of the door to door collection undertaken by the ULBs.

- *Digitizing EPR:*
  Every manufacturer of the plastic packaging items has to be registered with a central body/ state specific SPV and disclose their production quantity. Additionally, on online platform can be created wherein, every plastic producer shall submit an amount (based on their post-consumer waste generation in the state) towards plastic waste management. The central body shall then allocate the the project for collection, storage of the plastic waste to a registered PRO. This waste will be used in recycling, energy recovery (waste to fuel, etc.) or as an alternate use (in road construction, etc.)

b) *For the PROs*

- *Shift of focus to tier II and tier III cities*
  The primary focus of EPR at this stage has been tier I cities because of availability of manpower and resources. The group strongly agreed that with the focus shifting to tier II and tier III cities, a large part of the waste management problem can be solved at a much lesser cost and lesser manpower usage. PROs should ensure they move their operations to tier II or tier III cities, villages and hilly areas which are frequented by tourists.

- *Integration of the informal sector*
  PROs play a major role in the recycling part of EPR however, the collection and segregation of waste is still managed mostly by the informal sector, for example, the informal sector collects about 90% of the waste in the Indian waste management system.

  The PROs should not try to create a parallel economy but instead integrate the waste pickers in their system of recycling.

c) *For the Brand Owners/ Plastic Producers*

- *Disclosure of plastic waste created*
  Every brand owner/producer/importer of the plastic packaging items has to be registered with the respective Pollution Control Boards (‘PCBs’) and disclose the amount of plastic waste generated by their products either individually or collectively. They can work out the modalities and establish a system based on EPR for collecting the plastic waste. Companies need to take care of end-to-end plastic waste management system and need not pay any additional charges to the government bodies. In addition to this, they have to report the plastic waste quantities, which are taken back from the market and recycled, and also produce a certification for the same at the end of every year.

- *Public-Private Partnerships*
  Instruments such as public private partnerships set an overarching goal but makes the private sector and public sector jointly responsible on how to achieve the state’s targets. Such partnerships should be encouraged to solve the problem in the long term.

- *Allocation of CSR budget towards public education*

Public Education via introduction of environmental conservation principles in school curriculums and social campaigns are gradual transformational process but key to change consumers' behaviors. A part of the mandatory CSR budget should be allocated towards creating awareness about waste segregation and curbing the use of single use plastic.

- Research on more sustainable solutions
  Brand owners should put in funds for the research of sustainable products and sustainable packaging for existing products. The brand owners should ask relevant questions such as - – what are the most problematic single-use plastics that require an immediate action, what is the extent of the problem, what are the health and environmental impacts of using single-use plastics, what is causing the problem currently and what can we do to address this problem.

d) *For the on-ground organisations/ NGOs*

- *Integration with the PROs*
  PROs play a major role in the recycling part of EPR however, the collection and segregation of waste is still managed mostly by the informal sector, for example, the informal sector collects about 90% of the waste in the Indian waste management system.

  The PROs should not try to create a parallel economy but instead integrate the waste pickers in their system of recycling.

- *Building more transparent system of waste management*
  Currently, as pointed out during the discussions of the day, there exists a clar lack of trust between the brand owners and the on-ground organisations/ informal sector because they are unaware of the life cycle of the waste. The on-ground organisations can strive for building a more transparent system which encourages corporates to be more involved in the waste management system.

5. Exhibits

5.1. Exhibit 1 - Case Studies

Case Study for Effective IEC to implement plastic bans:
Sikkim became the first Indian state to ban plastic bags in 1998. Discarded plastic bags were believed to be the main cause of chokes in drainage systems that resulted in landslides. Since the ban, the state has been at the forefront of IEC and behaviour change campaigns, propagating the use of sustainable materials in consumer products. There is a very high rate of consumer awareness on the perils of plastic bags, bottles, etc. and several initiatives such as “Plastic Free Days” are undertaken to maintain the low tolerance for this waste.

Case Study for collection and segregation
Producers and importers of plastics in Sweden are mandated to create recycling stations at optimal locations so that effective collection of plastic waste can take place. This contributes to a near-perfect collection and disposal rate across the country. There are some new online waste collection services in India (www.thekabadiwala.com and www.junkart.in) that offer door-to-door collection services for recyclables. They buy waste on predetermined rates and sell it onwards to vendors who recycle, upcycle or refurbish waste. The Ambikapur district in Chhattisgarh has implemented the successful collection and segregation at source and which is further segregated at secondary & tertiary segregation SLRM centres with the help of SHGs. This requires building infrastructure in the form of SLRM centres and IEC from general public including youth and students.

Case Study on EPR implementation
Saahas Waste Management Pvt. Ltd. Has established MoUs with large producers of plastics like Britannia and HUL. They collect post-consumer waste through aggregation centers and supply the collected scrap to either mechanical recycling centers or cement kilns for energy recovery.

Case study on usage of plastics in Road construction
The Chhattisgarh state government in 2015 passed an order prohibiting the production and use of plastic bags in the state. In Ambikapur district, all existing plastic and polythene waste is being proposed to be used in construction of local roads

Case study om Successful Waste management in Indore, Madhya Pradesh[2]
Indore, one of Madhya Pradesh's busiest cities, made it to the list of India's most swachh city in 2017. Today, over 1000 metric tonnes of garbage is collected daily from homes and commercial establishments. The door-to-door collection service started in 2 wards as a pilot project was a resounding success way back in June 2015 which subsequently took a year to achieve 100% door-to-door collection.
The city corporation’s next goals include complete segregation at source, managing the city landfill site and establishing a waste-to-energy plant by 2019.

Case study on Government imposed ban leading to community effort

In response to the growing problem of plastic pollution, the government of Rwanda introduced a ban on plastic bags in 2008. The law prohibits all manufacturing, use, importing and selling of non-biodegradable bags in the country. Plastic bag manufacturers were encouraged to change their business model to recycling by providing incentives, and a new industry emerged producing environmentally friendly, reusable bags.

Rather than introducing a levy on plastic bags, as has been done in many countries, the regulation and standards instead prohibit all manufacturing, use, importing and selling of non-biodegradable bags that fall outside the sustainability criteria.

The Rwandan authorities supported companies that used to manufacture plastic bags by providing tax incentives for purchasing equipment to recycle plastic or manufacture environmental friendly bags.

Local NGOs and citizens quickly took up the challenge to design alternative bags, mostly made from natural materials like cotton or banana leafs, that are more environmentally friendly and sustainable. These cottage industries have helped reduce poverty and create non-agricultural based jobs for Rwandans.

[3] Source:http://www.innovationseeds.eu/policy-library/core-articles/rwanda-plastic-bag-bankl

5.2. Exhibit 2 - Participants of the workshop

Sr No	Name	Organisation	Designation
Category – Producer Responsibility Organisations			
1	Praveen Aggarwal	Action Alliance for Recycling of Beverage Cartons	CEO
2	Snehal Jeriwala	Nepra Environmental Solutions Pvt Ltd (NESPL)	General Manager
3	Sukhjeet Singh	PRO India	Regional Manager
4	Rahul Nainani	RaddiConnect (Swachh Sustainable Solutions Pvt Ltd)	Co-Founder and CEO
5	Rahul V Podaar	Shakti Plastics	Director
Category - Plastic Producers/ Brand Owners			
1	Ganesh Kollegal	Amazon	Senior Public Policy Manager
2	Ankur Srivastava	Amazon	Program Manager
3	Denson Joseph	Coca Cola	Manager Technology & Services
4	Vaibhava Srivastava	Flipkart	Packaging Design
5	Sukhdev Singh Saini	General Mills	Lead - Packaging development
6	Kavita Shukla	Godrej	Assistant Manager
7	Madhavi Purohit	HUL	Sustainability Sr Manager
8	Bhargab Chakraborty	Tata Global Beverages	Quality team
9	Vikas Patil	Tata Global Beverages	Sustainability Coordinator
10	Rajesh Varma	Tata Chemicals	Head- Exports, Quality and SPOC Sustainability
Category - On Ground Organisations			
1	Chitra Mukherjee	Chintan	Founder and director
2	Pratibha Sharma	GAIA (Global Alliance for Incinerator Alternatives)	India Co-ordinator
3	Nalini Shekar	Hasirudala	Co-Founder
4	Gurashish Sahni	RaddiConnect (Swachh Sustainable Solutions Pvt Ltd)	Co-Founder
6	Jyoti Mhapsekar	Stree Mukti Sangathana	President
7	Laxmi Narayan	SWaCH	Co-Founder
Category - Government representation/ Policy makers and other experts			
1	Varun Sanghvi	CM's Office	Fellow
2	Pallavi Sankhe	CM's Office	Fellow
3	Shashank K Singh	EY - Climate Change and Sustainability Services	Senior Manager
4	Prabhjot Sodhi MBE	United Nations Development Program	Head (Circular Economy)
5	Reecha Upadhyay	Purpose	India Campaigns Director
6	Suraj Nandakumar	Recity	Co-Founder

5.3. Exhibit 3 – Agenda of the workshop

Start time	End time	Session
9:45 AM	*10:15 AM*	*Registration and refreshments*
10:15 AM	10:30 AM	Introduction to Tata Trusts and objectives of the day
10:30 AM	10:50 AM	Elevator pitch
10:50 AM	11:05 AM	Agenda for the day and introduction to **"Ideas marketplace"**
11:05 AM	11:25 AM	Let's talk about Extended Producer's Responsibility
11:25 AM	12:25 PM	Break-out Session - **"Start with the end"**
12:25 PM	1:10 PM	Group Presentations
1:10 PM	*2:00 PM*	*Lunch*
2:00 PM	2:10 PM	Energizer
2:10 PM	3:10 PM	Break-out Session - **"Mapping the solution"**
3:10 PM	4:00 PM	Group Presentations
4:00 PM	4:15 PM	Dot Vote
4:15 PM	4:30 PM	EPR Regulations and Notifications by the Govt.
4:30 PM	4:40 PM	Summing-up and vote of thanks
4:40 PM	*5:00 PM*	*Refreshments*

About Tata Trusts

Mission
"To positively and sustainably impact 100 million lives by 2021"

Background
Tata Trusts is amongst India's oldest, non-sectarian philanthropic organisations that work in several areas of community development. Since inception, Tata Trusts (which comprises 14 Charitable Trusts) has played a pioneering role in transforming traditional ideas of philanthropy to make an impactful and sustainable change in the lives of disadvantaged communities across India. Through direct implementation, co-partnership strategies and grant making, the Trusts support and drive innovation in the areas of healthcare, education, rural upliftment, urban poverty alleviation, energy and climate change, water and sanitation, and arts, crafts and culture. The Trusts have created and supported many centres of excellence - Indian Institute of Sciences, Tata Memorial Centre, Tata Institute of Social Sciences, and National Centre for Performing Arts, to name a few - which have significantly contributed to the field of research, sciences, social sciences, education, etc. The principles of the Founder, Jamsetji Tata, and his vision of proactive philanthropy, continue to guide Tata Trusts in the endeavour to catalyse societal development, while ensuring that initiatives and interventions have a contemporary relevance to the nation. Even though India has shown resilient growth in the last few years, given the legacy of issues faced by the country
at the time of independence in 1947 and the substantial increase in population in the intervening decades, the scale of the problems and the numbers of people affected by the problems continue to be very large. In light the past leadership role played by Tata Trusts in community development, and with the vision to remain in the forefront of this noble mission, this has meant that the Trusts have re-evaluated its approach and strategy towards catalysing societal development, and deliberately stretched the bar in terms of the Mission, as also moved to a new way of doing things

The New Approach
While healthcare, education, rural upliftment, urban poverty alleviation, energy and climate change, water and sanitation, and arts, crafts and culture are the primary areas of focus (many of these areas have substantial alignment to national priorities, as declared by the government), there is a concerted effort by Tata Trusts to bring about convergence with priority programmes of the government. Not only does this ensure availability of larger pool of funds to address the developmental issues, but provides the unique opportunity that innovative interventions that are successful in attaining the impact metrics and are carried out at scale, can provide a model capable of being adapted throughout India. Recognising the depth and scale of the challenge that India faces, the Trusts fully appreciate that managing interventions at scale require large resources, monetary and otherwise. The Trusts understand that partnerships and collaborations with like-minded individuals and organisations, help share expertise, resources, and risks, and provide the impetus for
generating sustainable benefits to communities. Tata Trusts has incorporated its past learnings into a systematic approach - adoption of the 'Matrix Approach', to support multiple inter-linked activities in identified 'clusters' of contiguous villages across select geographies, which allows impact multiplication; movement towards direct interventions, through field teams and Associate Organisations, to ensure high-quality implementation, proactive engagement with the community, and strong interface with government officials and bodies; weaving technologies into various programmes, for speed, scale, cost efficiencies, and improved monitoring and assessment, etc.