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# **Urban Governance**



# Participatory Planning of Solid Waste Management



# In Selected Small and Medium Towns of India

PRIA is an International Centre for Learning and Promotion of Participation and Democratic Governance

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# Participatory Planning of Solid Waste Management in Small and Medium Towns of India



### **Society for Participatory Research In Asia**

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## ACKNOWLEDGEMENT

The 74<sup>th</sup> Constitutional Amendment Act (CAA) brought out in 1992 guaranteed the existence of Municipalities as institutions of urban local governance. The Schedule Twelve of the Constitution listed eighteen items as the functional domain of the municipalities. It entails that the elected municipality will be responsible to provide such basic services to the citizens and the state government will devolve authorities, funds and functionaries as necessary for the municipalities to become institutions of local governance in urban areas. However, even after almost fifteen years of CAA it remained a distant reality. Solid Waste Management (SWM) in the cities and towns is one such responsibility of the municipalities. The municipalities are supposed to be responsible for preparing comprehensive plans and implementation for collection, transportation and disposal of solid wastes within the jurisdiction of the municipality. Effective democratic urban governance will expect that the municipalities as institutions of local governance will foster civic engagement in the planning, resource allocation, utilization and efficient SWM in the towns. However, even a casual look at most of the Indian cities and towns will indicate an utter failure of municipalities to provide a clean and healthy urban environment to the citizens. Lackadaisical attitudes of the elected councillors and municipal officials, lack of technical knowledge and required resources, and utter apathy and lack of awareness of citizens result in complete mismanagement of solid waste collection, transportation and disposal in cities and towns.

PRIA and its partners made an effort to change this scenario in selected small and medium size municipalities in India by providing technical support to the municipalities to prepare Detailed Project Report (DPR) on Solid Waste Management (SWM). In continuation with PRIA's effort to make the bottom up planning process participatory and inclusive a detailed methodology was followed in the preparation of DPRs.

Our sincere thanks to the Ministry of Urban Development of various state governments like Govt. of Chhattisgarh, Himachal Pradesh, Rajasthan and Uttaranchal for their encouraging support and keeping faith in the entire process of the planning. These novel-planning initiatives could not be undertaken without the support of the officials, councillors, Presidents and Chief Executive Officers of Karauli, Jhunjhunu, Dharamshala, Janjgir and Gopeshwar municipalities. We must acknowledge the wholehearted participation of the citizens of these towns by keeping trust and faith in the planning process. Their engagement made the planning process truly participatory and transparent.

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Dr. Kaustuv Kanti Bandyopadhyay Director, PRIA

## **ABBREVIATIONS**

Abbreviations	Full Form
BSUP	Basic Servuces to Urban poor
CAA	Constitutional Amendment Act
CLCF	City Level Citizens Forum
СРСВ	Central Pollution Control Board
CPHEEO	Central Public Health Environment and Engineering
	Organization
DPR	Detailed Project Report
DRC	Dry Recycle Centre
HARC	Himalayan Action Research Centre
IHSDP	Integrated Housing and Slum Development Programme
ISWM	Integrated Solid Waste Menagement
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
MoEF	Ministry of Environment and Forests
Mohupa	Ministry of Housing and Urban Poverty Alleviation
MoUD	Ministry of Urban Development
MSS	Mohalla Swachchata Samitis
MSW	Municipal Solid Waste
PRIA	Society for Participatory Research in Asia
SMTs	Small and Medium Towns
SPCBs	Small Pollution Control Boards
SRKPS	Shikshit Rojgar Kendra Prabandhak Samiti
SSD	Society for Sustainable Development
SWM	Solid Waste Management
UIG	Urban Infrastructure and Governance
UIDSSMT	Urban Infrastructure Development Scheme for small and
	Medium Towns
ULBs	Urban Local Body

# LIST OF FIGURES AND BOXES

Figures

#### Page

Figure 1.1:	Variation of MSW Generation by Size of City	2
Figure 2.1:	Waste Generation Without Integrated Management	10
Figure 2.2:	Multi-Material, Multi-Source, Integrated Waste	
-	Management Approach for Solid Waste	11
Figure 2.3:	Functional Elements of MSWM	12
Figure 2.4:	Local Government to Citizen Direct Interaction Process	14
Figure 2.5:	Civil Society Organization to Citizen Interaction Process	14
Figure 2.6:	Civil Society Organization – Local Government – Citizen	
C	Interaction Process	15
Figure 3.1:	Methodologies for Participatory Planning of Solid	18
-	Waste Management	
Boxes	0	
Box 1:	Lokprayas in Karauli	17
Box 2:	Common Questions That Were Asked During	
	Stakeholder Consultation	19



Contents		Page
Acknowledgement Abbreviations List of Figures, and Boxes Contents Executive Summary		i - ii iii iv v vi - vii
Chapter1	INTRODUCTION 1.1 Background 1.2 Key Issues Related to SWM	1 2
Chapter 2	<ul> <li>Components of SWM in India</li> <li>2.1 Structures for SWM in India</li> <li>2.2 Principles of Municipal SWM</li> <li>2.3 Functional Elements of Municipal SWM</li> </ul>	8 9 11
Chapter 3	<ul> <li>Participatory Planning of SWM</li> <li>3.1 Approach to Planning</li> <li>3.2 Steps for Preparation of Participatory SWM Plan</li> </ul>	16 16
Chapter 4	Key Lessons and Way Forward	22
	<ul><li>4.2 Key Lessons Learnt</li><li>4.3 Recommendations</li></ul>	23 25
Bibliography		27

# EXECUTIVE SUMMARY

Indian cities are plagued by acute problem of solid waste which is magnified by rapid urbanization of cities. This rapid unplanned urbanization poses threat to the achievement of sustainable development because of the environmental and other adverse effects of intensive resource consumption and poor management. The potential conflict between economic growth and environmental sustainability poses the greatest challenge for sustainable urbanization.

Till now, the problem of waste has been seen as one of cleaning and disposing as rubbish. However, a closer look at the current and future scenario reveals that waste needs to be treated holistically, recognizing its natural resource roots as well as health impacts. The 74<sup>th</sup> Constitutional Amendment Act brought out in 1992 ensured the existence of elected municipalities as institutions of urban local governance. The Schedule Twelve of the Constitution listed eighteen items as the functional dimension of municipalities. It entails that the elected municipality will be responsible to provide such basic services to the citizens and the state government will devolve authorities, funds and functionaries as necessary for the municipalities to become institutions of local governance in urban areas. However, even after almost fifteen years of Constitutional Amendment it remained a distant reality.

Solid waste management (SWM) in the cities and towns is one such responsibility of the municipalities. The municipalities are supposed to be responsible for preparing comprehensive plans and implementation of plans to provide a clean and healthy environment to the citizens. However, municipalities, in the current scenario, have been facing tremendous challenge of planning, developing and managing the solid waste due to lack of technical know-how, human resource, scarce resources remittance from state agencies and most importantly a integrated plan to deal with the issue of SWM. These challenges are compounded for numerous small and medium towns (SMTs) in India.

The other critical aspect other than technical upgradation for achieving sustainable SWM practice in any town is to make the system more inclusive by creating more formal spaces for citizens and civil societies. The present top-down approaches to SWM plan preparation neither encourage the engagement of local stakeholders nor consider the local specificity. This is one of the formidable reasons for failure of SWM planning.

Till early 90s, there was no active participation from citizens in the plan making process. The recent thrust of Government of India to improve urban governance, infrastructure and services through a comprehensive programme – Jawaharlal Nehru National Urban Renewal Mission (JNNURM) with its various sub components like Urban Infrastructure and Governance (UIG), Basic Services to Urban Poor (BSUP), Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), Integrated Housing and Slum Development Programme (IHSDP) and enforcement of Solid Waste (Management & Handling) Rules 2000 in Indian urban cities and towns by community participation is a step forward in endorsing and recognizing participatory method of urban planning as a precursor to any sustainable city development strategy.

In this backdrop PRIA initiated the preparation of participatory Detailed Project Report (DPR) on SWM in Rajasthan (Karauli and Jhunjhunu), Chhattisgarh (Janjgir), Uttarakhand (Gopeshwar) and Himachal Pradesh (Dharamshala). The purpose of this initiative was to develop a sustainable SWM plan by fully engaging the stakeholders and other marginalized sections of the urban society. In this way, PRIA's attempt was to develop a methodology that could be integrated in the larger developmental agenda, that would have more widespread circulation in numerous cities and towns of the country that are taking up SWM initiatives. This occasional paper is intended to share this methodology with development practitioners and policy makers concerned about SWM in numerous small and medium towns in India and elsewhere.

# Chapter 1 Introduction

## **1.1 Background**

Solid Waste Management (SWM) is one among the basic essential services provided by the municipalities to keep cities clean and hygienic. The present scenario of most of the towns in India shows the same dismal picture due to insufficient resources, unscientific and outdated technology, high cost for management of service, lack of citizen participation and poor efficiency. This has led to unaesthetic living conditions in most of the Indian cities and towns. On the other hand municipal law governing the local bodies does not have adequate provisions to address the problem of SWM.

India, the world's second highest populated country is a land of various physiographic, climatic, geographic, ecological, social, cultural and linguistic characteristics. Thus, a common technique of solid waste management does not suit every Indian city. Also, due to rapid urbanization in cities over last 5 years, cities are mounted with the problem of SWM. The urban population has grown five fold in last six decades with 285.35 million people living in urban areas (as per the 2001 Census). The number of towns and cities have increased to 4378 of which 393 are Class-I towns, 401 are class-II towns, 1151 are class-III towns and remaining are classified as small towns with population ranging between 20,000 to less than 5000. The number of metropolitan cities having million plus population has increased to 35 as per 2001 Census, and this has also seen growing public concern with exponential increase in sanitation and environmental issues.

The growth of urban population in India ranges between 2.7 - 35 percent per annum, whereas the yearly increase in the overall quantities of solid waste in the cities will be more than 5 percent. A major study indicated that the major urban centers in India generated about 100,000 tons per day (tpd) of municipal solid waste. On an annual level, therefore, approximately 35 million tons of MSW is generated which will exceed to 260 million tons in a year (approximately eight times more than the present level of waste generation). An analysis of data available with the Central Pollution Control Board (CPCB) shows that waste generation has been found to be a function of consumption and production activity, and thus strongly affected by household income and local

production of goods and services. It clearly states that waste generation is directly related with the consumption and production patterns of cities, hence, small and medium scale towns tend to generate smaller per capita loads and therefore proportionally less waste. The average waste quantities in small and medium towns vary between 200 to 600 gms/capita/day depending upon the type of Urban Local Body (ULB) by population.





Although most of the Indian ULBs spend 20 to 50 percent of their total budget on SWM services, the services are unsatisfactory. The common problems faced by these local bodies are: inadequate coverage of low settlement areas, infrequent waste removal, contamination of surface and ground water by leachate, air pollution due to burning of open dumps, flooding due to clogged drains and non availability of adequate staff, vehicles and suitable dumping sites.

Since the state of an economy to a large extent influences waste generation and municipal solid waste in particular, with increasing urbanization and changes in lifestyles, SWM service is becoming a major problem of Indian cities and towns. Moreover, unionization of the workers, politicization of the labour and the consequent indiscipline among the workforce has added problems in providing regular service to citizens.

### **1.2 Key Issues Related to SWM**

#### (A) Institutional Issues

Institutional problems of municipalities can be demonstrated as inability of municipality in redressing the problem of SWM. The functional inefficiency of municipality could be attributed to the lack of adequate number of sanitary workers, resource crunch, inadequate number of tools and equipment, manual work and lack of mechanization in SWM. Some of the points related to institutional deficiencies are following:

#### (i) Institutional infrastructure

The general lack of critical thinking in relation to solid waste systems is often a barrier to innovative solutions. Lack of political will to make solid waste a priority, that it is usually lacking talented personnel, adequate facilities and the commitment of senior officials. In this sense, the anachronistic organization of municipal government departments and traditional divisions of labour do not lend themselves to innovative problem-solving or to the needs of large cities.

Furthermore, municipalities claim solid waste problem as one of the technical gap and imply the solutions which can be achieved through the acquisition of large facilities. Thus, rise of bureaucratic privileges makes it difficult to introduce innovative proposals in relation to current activities of the community. Another area of concern is lack of clarity in the division of responsibilities, tasks and resources between central, state and local governments which leads to unclear articulation of policy.

#### (ii) Unskilled human resource

Incompetence of staff and lack of interest from municipal authority leads to ineffective management of solid waste without looking for the capacities to be built in existing system. Also, solid waste is a dumping ground for patronage system, which can lead to the appointment of supervisory or management personnel who lack the necessary skills to manage the department that is responsible for the environmental health of the city population.

Even well intentioned technicians in waste management will frequently opt for the status and attraction of 'modern' technical solutions for the problems they encounter in their city's waste management without applying other alternatives that can be cost effective and more affordable to financial structure of local bodies.

#### (B) Financial Issues

Solid Waste Management (SWM) is a part of public health and sanitation and according to the Indian constitution falls within the purview of the State list. Since this activity is nonexclusive, unrivalled and essential, the responsibility for providing the service lies within the public domain. The provision of funds for SWM is commonly observed to be made on ad hoc basis and is not related to the requirement. SWM receives comparatively inadequate share out of the total municipal budget as the municipal agencies assign a low priority to this work resulting in poor services. Some of the points related to financial instability are explained in concern with all the three sectors involved in SWM.

#### (i) Finances of the municipalities

Few municipal governments in India have a dedicated income stream for solid waste services. The sources of financing which can be used for solid waste come either from the national government, from user fees or charges or out of property taxes. All of these sources can be problematic for the financing of solid waste operations due to old, out of date or preferential assessment of property taxes which generally undertax the owners and provide insufficient revenues. Thus, even if the resident and commercial

establishments are ready to pay, for waste removal, the municipal government is unlikely to know what its true costs are, and so the actual fees often do not fully cover the costs (for example, capital depreciation is not included in most of the municipal charges). Also, when the fees are calculated on the basis of real estate assessments, there is no link between quality generated and amount paid and hence no incentive for reduction of amount is disposed off in this case.

A municipality which proposes to contract out certain waste operations to the formal and informal sector has to justify its decision, generally on the basis of efficiency or lower cost to compensate same amount in which services shall be provided. Most of the contracts are awarded only to pre-qualified contactors and it is suspected that even the set of contractors come to an understanding on who will submit the lowest bid for a particular project. Thus, municipalities have to show that the private sector has financially sound track record and good credit rating, which can become a barrier to contract new entries for any sector.

#### (ii) Finances of the formal private sector

The finances of the formal private sector present fewer although significant barriers to the setting up of partnerships or contracts between municipal governments and particular sector. Moreover, private sector in small and medium towns may not be able to show that it has a good track record, or it may not have the requisite years of financial reporting to allow it to receive municipal contracts. In case of private sector, business operates in the 'free market' and is subjected to fluctuations in supply and demand, which may unable to guarantee that collected recyclable materials can be sold into the commodities market at a guaranteed price.

#### (iii) Finances of the informal private and community sector

As known, informal private sector and community groups (especially low-income) have extremely limited access to financing. These sectors are not able to access funds for equipments and to capitalize their business which make them dependent on variable cost strategies and generally restricts the potential for improving products, broadening markets, improving working conditions and receive incentives for handling of waste.

#### (C) Service Level Issues

#### (i) Absence of segregation at all levels

Segregation of waste at source is key mechanism in reducing the quantity of waste, and promotes reuse of waste. This also helps in reducing the burden on the dumping site where the waste is dumped on daily basis. Some of the developing countries have a system for segregation of waste in three categories viz. biodegradable (vegetable waste, left over food), recyclables (plastic, paper) and hazardous (glass pieces, medicine wrappers, metals). In India, this is not practiced and in most of the urban areas the household waste is disposed of without being segregated into wet and dry. The waste given to the waste collectors consists of recyclables and kitchen waste which has high value in the market. Municipalities in most of the Indian urban towns and cities have not been able to comply with the rules on segregation of waste. In India, the segregation and collection of domestic waste is done mainly by the informal sector in an informal manner by recyclers, scavengers etc. This system is effective and lessens the burden on municipal services since the quantity of waste to be collected and transported is reduced to a great extent. However, yet there is no formal system of incorporating these rag pickers into the SWM system wherein they can segregate the waste at source. Thus, the present system of waste segregation is not fully practiced in most of the urban towns.

#### (ii) Absence of doorstep collection

In most of the Indian cities, the primary collection of waste is very insignificant, as the system of waste storage is yet to be developed. Doorstep collection of waste is insignificant and wherever it is introduced, the waste system does not synchronize with supporting facilities. The waste generated is usually thrown openly on the streets and is mostly collected through means of street sweeping. Shortage of storage bins, inadequate transfer stations and collection vehicles result in non-clearance of waste on daily basis. The collection of solid waste has been a problem since either the ULBs do not have adequate infrastructure or cannot optimally utilize. The selection of vehicular fleet for collecting waste remains the choice of the local body and is mostly based on available financial resources for maintaining the infrastructure and correspondingly the human resources required to operate the systems.

#### (iii) Unhygienic storage depots

In most of the urban areas, communities dump the household waste along the roadsides or at a place of immediate convenience. Places where adequate storage facility is not provided by the municipality, the residents designate a place near their houses where they go and directly dump the waste. Across India, local bodies use different types of storage bins like cement/concrete cylindrical bins, masonry bins, metal containers, plastic bins etc. The capacity of the storage containers provided by the local body is insufficient and very often the waste is seen scattered around the storage site. Moreover the waste is not cleared from these storage depots on daily basis since adequate vehicular fleet is not available. There also exist several cities that have adequate infrastructure in terms of waste storage facility, but it is not appropriately located for citizens to have easy access.

#### (iv) Unplanned and open transportation

Daily clearance of waste from storage depots is necessary to prevent overflowing of bins/ containers and thereby maintaining hygienic conditions in urban areas. Most of the local bodies do not have adequate vehicular fleet to transport the waste from secondary storage depots to the disposal site. Moreover there is no synchronization between the type of storage depots and transportation. Manual loading of waste consumes extra time and reduces the productivity of the vehicles and manpower deployed. Also the collected waste is not compacted and therefore more trips have to be made to disposal site. The transportation network is ill designed and routing of vehicles and clearance cycle of storage depots on daily basis generally breaks down.

In many of the cities the waste collection from houses and open streets is efficient but is not backed with adequate transportation facility. This causes backlog of waste to be cleared and entire cycle is disrupted. Often the local body has adequate vehicular fleet but either they are defunct or utilized sub-optimally.

#### (v) Unsafe processing and disposal

In most of the Indian towns, processing and disposal are seen as the common treatment which generally affects the quality and composition of waste. The most common way to deal with waste is by dumping it in low-lying areas. The waste is directly dumped and in most cases does not even get covered with soil. As a result it becomes breeding grounds for flies, rodents and pests. The reluctance of the local bodies in India to comply with the norms is apparent by the fact that there is not even a single sanitary landfill that fulfils the criteria as laid down in rules. A large proportion of municipal budget is allotted for SWM is spent on wages of sanitation worker.

#### (D) Legislative Issues

Legislation and regulation are set up by the state and central agencies, but are not followed in a complete manner due to lack of financial and institutional capacities.

Thus, mostly cross-sectoral involvement is motivated to cover these gaps on the basis of contracts. However, cross-sectoral partnerships lead to certain kind of legislative barriers where mandates for public delivery of services make it difficult or impossible to contract the service to private sectors.

Looking into the present scenario, municipalities in most of the small and medium towns follow state municipal Acts for provision of resources for sanitation and SWM which generally are not found suitable due to regular increase in population. The norms assumed for these towns do not explore all the indicators which are considered important for future expansion. As a result, municipalities are not able to provide a resourceful and sustainable approach for changing trend of these towns.

#### (E) Public Accountability Issues

Community is in the center of all the activities, yet it is ignored by the decision makers and made to merely wait and watch and ultimately what people get in hand is what they do not want or what is not in their priority. This creates a void between the administrators and those administered which distances people from government initiatives.

Municipal authorities in the small and medium towns have failed to mobilize the community and educate citizens on the rudiments of handling waste and proper practices of storing it in their own bins at the household, shop and establishment level. In the absence of a basic facility of collection of waste from source, citizens are prone to dumping waste on the streets, open spaces, drains, and water bodies in the vicinity creating insanitary conditions. Citizens assume that waste thrown on the streets would be picked up by the municipality through street sweeping. For the general public, which is quite indifferent towards garbage disposal etiquette, the onus of keeping the city

clean is entirely on the ULBs. This mind set is primarily responsible for the unscientific systems of waste management in the country.

PRIA started intervening on SWM in 2000 with a comprehensive programme on Urban Governance implemented across five states (Haryana, Madhya Pradesh, Rajasthan, Uttar Pradesh and Kerala) in the country. It was recognized to sharpen the perspectives on better urban governance by strengthening citizens' participation and promoting democratic governance in small and medium towns. Development issues related to sanitation and SWM were taken up in some urban areas, where it was observed that poor administration, financial scarcity and lack of awareness were the major factors behind the poor service provisions. The primary focus was kept on campaigns where IEC activities were undertaken to aware stakeholders and marginalized sections to understand the significance of community participation in issues like SWM. Participatory approaches were practiced to develop models where different sections of the society can contribute for sustainable management of solid waste. Regular orientation programmes and workshops were also conducted to upscale the vision of municipalities when community is involved for decision making in such activities.

These initiatives proved that community participation can change the present pattern of service provided by municipality, but it could not be made successful due to absence of municipal plans in these towns. PRIA's advocacy for long-term participatory planning on SWM was fulfilled when two municipalities of Rajasthan in Karauli and Jhunjhunu showed their interest in this approach. This initiative was later on extended in three more municipalities (Gopeshwar in Uttarakhand, Janjgir in Chhattisgarh and Dharamshala in Himachal Pradesh) on the basis of stakeholder involvement, support from municipality and primary requirements which would entail better sense of ownership for the plan. The present paper focuses the process in which the participatory waste management planning was initiated by PRIA and its partners in the above mentioned small and medium towns. The paper intends to capture the key lessons learned from the approach and key strategies adopted which can be replicated in other cities.

# Chapter 2 Components of SWM in India

It is essential to have basic information on the components of SWM before moving towards the participatory methodology employed in all the towns. Therefore, this chapter will provide information on the various aspects of SWM in India.

### 2.1 Structures for SWM in India

In India, solid waste management comes under the purview of state but ULB is directly responsible for implementation as well as development of required infrastructure. They are directed to obtain authorization from state agencies for setting up of disposal facilities and furnish annual report of compliance. Schemes related to SWM are taken up either in the state sector or in the central sector for the funding, which is provided by the central government either by grants or on matching basis or by the state government based on their capacity of implementation. To ensure compliance, Municipal Solid Waste (Management and Handling) Rules 2000 notified by the Ministry of Environment and Forest in September 2000 are required to be followed by municipalities for obtaining grants/authorization from state and central agencies. At present, SWM activities are undertaken at three levels.

#### (a) Central Level

At the central level, Ministry of Environment and Forests (MoEF), Ministry of Urban Development (MoUD), and Ministry Housing and Urban Poverty Alleviation (MoHUPA) are the main agencies dealing with the subject of SWM in India. Central Pollution Control Board (CPCB) is responsible to coordinate with State Pollution Control Boards (SPCBs) with regard to implementation of rules whereas CPHEEEO is a nodal agency of MoUD responsible for providing technical assistance and advisory support in the issues related to SWM. Other ministries such as Ministry of Agriculture, Ministry of Finance, Ministry of Railways and Ministry of Mines have an important role in this activity.

#### (b) State Level

At state level, projects related to SWM are controlled by SPCBs and State Nodal Agency of the Urban Development. The activities related to institutional building and resource provision is governed by norms under state municipal Act and guidelines of

MSW Rules. State government is responsible to provide necessary support to the local bodies for their financial institutional capacity building.

#### (c) Local Level

At local level, municipality is responsible for provision of service in the planning area of town. These bodies arrange local funds by conservancy tax, user charges, grants and schemes initiated by Central or State Government to plan and allocate resources for management of waste. As a matter of fact, SWM is an activity which is controlled by ULB but till the powers for this activities have not been completely delegated to local bodies.

## **2.2 Principles of Municipal SWM**

Municipal SWM involves the application of principle of Integrated Solid Waste Management (ISWM) to municipal waste. ISWM is the application of suitable techniques, technologies and management programmes covering all types of solid wastes from all sources to achieve the twin objectives of (a) waste reduction and (b) effective management of waste still produced after waste reduction.

#### (a) Waste reduction

It is now well recognised that sustainable development can only be achieved if society in general, and industry in particular, produces 'more with less' i.e. more goods and services with less use of the world's resources (raw materials and energy) and less pollution and waste. Figure 2.1 shows the process of ISWM where waste can be minimized by using internal recycling of materials or on-site energy recovery.

#### (b) Effective Management of Solid Waste

Effective SWM systems are needed to ensure better human health and safety. They must be safe for workers and safeguard public health by preventing the spread of disease. In addition to these prerequisites, an effective system of solid waste management must be both environmentally and economically sustainable.

- Environmentally sustainable: It must reduce, as much as possible, the environmental impacts of waste management.
- Economically sustainable: It must operate at a cost acceptable to community.

An economically and environmentally sustainable SWM system is effective if it follows an integrated approach i.e. it deals with all types of solid waste materials and all sources of solid waste (Figure 2.2). A multi-material, multi-source management approach is usually effective in environmental and economic terms than a material specific and source specific approach. Specific wastes should be dealt within such a system but in separate streams. An effective waste management system includes one or more of the following options:

(a) Waste collection and transportation.



- (b) Resource recovery through sorting and recycling i.e. recovery of materials (such as paper, glass, metals) etc. through separation.
- (c) Resource recovery through waste processing i.e. recovery of materials (such as compost) or recovery of energy through biological, thermal or other processes.

- (d) Waste transformation (without recovery of resources) i.e. reduction of volume, toxicity or other physical/chemical properties of waste to make it suitable for final disposal.
- (e) Disposal on land i.e. environmentally safe and sustainable disposal in landfills.



### **2.3 Functional Elements of Municipal SWM**

The activities associated with the management of municipal solid wastes from the point of generation to final disposal can be grouped into the six functional elements: (a) waste generation; (b) waste handling and sorting, storage and processing at the source; (c) collection; (d) sorting, processing and transformation; (e) transfer and transport; and (f) disposal. The inter-relationship between the elements is identified in Figure 2.3

There have been enough evidences that many developmental failures originate in attempts to impose standard top down programme and project on diverse local realities where they do not fit or meet needs of the local citizen. Participation of people is

neither a mere input into a project, nor meant to yield certain tangible benefits to the people. It is a process which rather enables the deprived sections to gain control over their own life situation, knowledge and ideology. It's now well recognized that participation also enhances cost-effectiveness and sustainability. There are enough insights available that local citizens can do more with less capital costs and if local citizen themselves design and construct they are more likely to meet running costs and undertake maintenance.

#### Figure 2.3 Functional Elements of MSWM

Management of SWM covers the full cycle from colle ction of waste from households and commercial establishments to acceptable final disposal. In the process, efforts are made to reduce the final volumes through recycling and material recover, as well as processing/ treatment. The accompanying diagramme out lines the typical system of waste management in India. An analysis along these lines should be carried out for any municipality, as a fist step to understand and deal with the necessary upgrading of the system.



Different researchers, academicians and practitioners have provided interesting insights on participation but to find an ideal definition is impossible as it is historically related with different ideologies and meanings. It can be historically traced that participation as a concept and strategy of development is an outcome of profound disillusionment with established development strategy in post-industrial revolution period. It is more a set of principles than an ideology, an ethic more than a model, learning to respect and listen to the opinions. In short, it can be considered as contribution, organization or tool for empowerment. There are various approaches on which participation has been explained. So, for a general understanding of participation, it can be defined as "contribution by the stakeholders in an organized manner to influence and share control over development initiatives by involving themselves in identifying, planning, implementing and evaluating the programmes or projects that affect their lives". Participation as a concept is employed in development initiatives to replace the conventional top-down approach with down-top approach.

In active participation citizens are to be included in the identifying, planning, implementing and evaluating programmes and projects executed by the agency but passive participation implies voluntary or other form of contributions by the people to predetermined programmes and projects in return for some perceived expected results. Though this is also participation but here projects or programmes are not designed to change the fundamental problems.

The term citizens' participation is too generic. What does 'citizen' mean or who are included in participation? Does the scope for citizen participation in any programme provide 'equal opportunity' to all social categories and classes for effective participation? Even if when the term citizen is narrowed does it ensure equal condition for effective participation for each one?

Most of the participatory initiatives are confined to limited sections of community which is contradictory when exposed to concept of participation. The process adopted for SWM in small and medium towns by PRIA included the categories which are basically excluded from the framework of participation. The most marginalized sections of community such as urban poor, women, dalits, disabled, and minorities were the major contributors to this process. As a result, the quality of participation increased with the passage of time which ensured ownership and implementation of plan.

Based on social setup of towns, financial condition of municipality and relation with stakeholders, three types of models were followed to prepare participatory plan of these towns. The models were used in individual and in combined manner during various stages of the process.

#### A. Local Government to Citizen Direct Interaction Process

This process involved local government centered citizens' participation, where the local government mooted participation in the planning process. The local government provided the technical know-how, leadership, etc. but in return it expected the citizens to maintain and take care of the resources provided by the local government. In this case the local government through ward committees and other special committees gave representation to the citizen in plan formulation (Figure 3.1).



It was discussed during the plan preparation with municipalities of all the towns that municipality should support the action taken by communities for maintaining the resources provided by local government. This idea was appreciated by Gopeshwar municipality where Mohalla Swachchata Samitis (MSS) had been formed in each ward under an order notified by the state government for collection of user charges from residents of ward. Committees were also responsible to promote participation of stakeholders and arrangement of resources for door-to-door collection. It was proposed under the plan that MSS would be strengthened and additional measures should be taken to sustain this initiative.

#### B. Civil Society Organization to Citizen Interaction Process

As compared to the above mentioned process where municipality played a dominant role in organizing people, in this model, Civil Society Organizations and Community Based Organizations directly interacted with the citizen to bring civic services that are otherwise should be provided by the Local Governance Institutions. The services here includes information, mobilization and other capacity building support.



#### C. Civil Society Organization – Local Government – Citizen Interaction Process

In this case, both Civil Society Organization and municipality played a dominant role in organizing people and providing support to strengthen participation in the planning and implementation of the projects and programmes.



# Chapter 3 Participatory Planning of SWM

### **3.1 Approach to Planning**

PRIA adopted a participatory approach for preparation of Detailed Project Report on Solid Waste Management in Karauli and Jhunjhunu in Rajasthan, Janjgir in Chhattisgarh, Gopeshwar in Uttaranchal and Kangra in Himachal Pradesh. All these towns were small and medium towns where PRIA and partners have been actively engaged with the ULBs to foster citizen engagement in urban planning and development. Earlier interventions of PRIA had created spaces for citizen participation in some of the municipal affairs, however, it was felt that the role of stakeholders could be made more meaningful and productive by motivating them to participate in the formulation of plans. It was also observed that these towns were not able to produce plans appropriate to the funds allocated to them from the state governments. Thus, it was strategized that the participatory plans could be prepared under the guidelines of UIDSSMT.

Extensive consultation and participation was evoked throughout the plan preparation process. This included identification of stakeholders whose participation was thought to be important for creation of demand based plan for these towns. Subsequently, the plans were evolved through series of discussions and structured dialogues with the citizens and other stakeholder groups. The municipalities and the authorities of state government were involved at various stages of the planning process.

The approach followed in the planning process was different from the conventional processes as it focused on intensive participation of the citizens and stakeholders in generating ideas and deciding upon appropriate alternatives with identification of technical gaps in the system. The broad aim of this inclusive approach was to develop a participatory agenda that would:

- build capacity of ULBs and create a process which would involve communities before taking any decisions for modifications in the SWM system;
- recognize the importance of local stakeholders' involvement for improvement of existing situation of the town by incorporating their demands and suggestions in the action plan;
- ensure that the informal sector and the marginalized are part of the planning process.

### **3.2 Steps for Preparation of Participatory SWM Plan**

The planning methodology agreed upon was through partnership, dialogue and discussions involving stakeholder at all stages. It was aimed to be participatory at all possible stages, technically sound and financially implementable for the ULB. The following section highlights the key steps undertaken in the planning process.

(a) Liaisoning with state authorities: The planning for municipal solid waste management comes under the authority of ULBs, however, in the present context the state authorities play important role in any planning of the cities. Several consultation meetings were organized with the state level authorities to cover various grounds. The primary aim was to get assurance that once the plans are prepared, the state government would arrange for their appraisal, approval and allocation of resources to the municipalities. Finally, it was agreed upon that the plans would be prepared under UIDSSMT guidelines or follow other state schemes to acquire technical support and minimize financial burden from municipalities in selected small and medium towns

#### Box-1 Lokprayas in Karauli

In Karauli a district level consultation was organized to involve the civil society groups in the planning and reform processes proposed under JNNURM/UIDSSMT/IHSDP. This meeting provided a venue to the people of Karauli to engage with the administration to advocate for citizen centric planning under JNNURM, UIDSSMT and IHSDP. A city level committee was formed immediately after this consultation. It led to regular interface meetings with citizens committee named the Nagrik Committee with the District Collector, the Sub-Divisional Magistrate and the Municipal Commissioner. The District Collector was informed about these schemes and advocated for citizen centric planning strongly. It also led to formulation of strategies for citizen centric planning where Nagrik Committee members conducted several small meetings with the citizens. A number of issue based sub-committees were formed by the citizens to prepare specific proposals to be included in the paln. Strategies of mass awareness on JNNURM, UIDSSMT, IHSDP schemes were also formulated and a city level consultation was organized. A total of 500 citizens attended this meeting. A well-designed pamphlet were also printed for this purpose and distributed in citizens. Help of electronic and print media was sought for wider coverage of the event and discussion.

(b) Orientation of municipal officials, elected councillors and other stakeholders: Orientation workshops were organized in all the towns to build capacity of institutions, representatives and stakeholders about the schemes and need of participatory solid waste management in small and medium towns. Mandatory reforms related to community participation were made clear to municipality. Strategies on better participation were discussed to sensitize stakeholders about their responsibility towards the plan formulation and implementation. The guidelines of above-mentioned schemes were distributed to local communities in the form of brochure to understand the basic facts. Apart from this, media was also involved in knowledge building of mass on these schemes. Number of articles were written and disseminated for suggestions from citizens to improve the quality of participation.

The major challenges faced during this process were related to specific issues such as historical negligence from the part of municipalities to embrace a citizen centric planning and implementation. They have been following methodologies of planning which hardly take into account the expectations of stakeholders or demonstrate respect towards local knowledge and information.



- (c) Signing of MoU with municipalities: After discussion and getting approval from the state government PRIA sent a letter to the ULBs to discuss the issue in a relevant forum. The Mayor in Council /President in Council approved the proposal and a formal MoU was signed between the municipalities and PRIA. The expectation was that the municipalities would provide local support through out the process during the preparation of the plan.
- (d) Stakeholder engagement and awareness campaigns: The fundamental objective behind participatory SWM plan was to achieve maximum involvement of stakeholders whose decisions were used to develop a strategy which are informed by local knowledge and geared towards broader ownership of the plans made. In a more formal manner, number of stakeholder groups directly or indirectly related to SWM were identified and consulted through semi-structured interviews to make sure the convergence of interests.

A standard set of questionnaire had been prepared to know the type of services in terms of collection, segregation, transportation and processing would be accepted by local stakeholders. Another set of questions captured the recommendations from various stakeholders who have major role in this process. Various types of consultation in the form of focus group discussion (FGD), one to one consultation and small and large group meetings were conducted in the process of stakeholder consultation.

#### Box-2

#### Common Questions That Were Asked During Stakeholder Consultation

- 1. Are you satisfied with the management of solid waste in your mohalla, ward and city? If no, Why? If yes, give the reasons.
- 2. Who is responsible for the management of solid waste at mohalla, ward and city level?
- 3. What roles do citizens play in the management of solid waste at mohalla, ward and city level?
- 4. How citizen could contribute in solid waste management of their ward and mohalla?
- 5. How do you ensure the support of citizens for door-to-door collection of waste?
- 6. Which measures would you take to improve the management of solid waste in your mohalla, ward and and city segregation of waste at the doorstep, reducing the waste at household level, promotion to door-to-door collection by giving user charge?
- 7. Do you support user charges for better service of SWM?
- 8. Are you aware of the economic value of waste? Do you know how it could provide the livelihood support to the urban poor?
- 9. What should be the mechanism to capture the economic value of wet and dry waste?
- 10. Can Dry Recycle Center serve the purpose of capturing the economic value of dry waste?
- 11. Is composting the suitable option of capture the economic value of wet waste?
- (e) Data collection: Data collection process was divided into two parts: secondary and primary data collection. Most of the secondary data was obtained from municipalities and some of the line departments but for primary data, some surveys were conducted at city level and ward level to obtain the exact values, essential for technical recommendations in the plan. As such, three types of surveys were conducted in all the towns. Surveys related to per capita waste generation was done for 5 days which was later on analyzed to calculate the approximate quantity of waste generated in the town. Another survey was done by SPCB to know the characteristics and suitability of landfill site selected by municipalities for disposal. The third survey was done to know the type of service required by stakeholders which was later on used to develop a strategy for SWM.
- (f) Preparing and sharing of conceptual plans: Based on the suggestions and feedback from the citizens during stakeholder consultations, conceptual plan was prepared to demarcate the number of zones required in the planning area for participatory management of SWM. Maps related to city profile, existing infrastructure on SWM (Distribution of Bins, Transportation Route etc.) were prepared to understand the detailed requirements of the towns.

Some of the major things that were shared during conceptual plans included division of city in different zones on the basis of stakeholder consultation, figures of waste generated, collected, transported and disposed in a day, suitable recommendations for different zones and maps of different types such as zonal map, collection and transportation map, disposal site map.

(g) **Financial Investment Plan:** After detailed discussion during the conceptual plan sharing, plans with details regarding financial investment for municipalities was prepared to understand the type and exact cost of resources demanded and required for proper management of waste.

The plan was prepared after detailed analysis of the demands and technical gaps in the existing system. Various documents such as municipal revenue, cost rate of required equipments and inflation status for next 15 years were referred to explain the projected requirements. These plans were prepared on the basis of investment required at zonal level and city level showing the structured investment for the full term of the plan.

- (h) Preparation and submission of final plan: Based on the above two discussions, the final plan was prepared and submitted to the municipality. The final plan was documented with the necessary time period for implementation of plan and allocation of resources after initial sharing in the last step.
- (i) Formation and strengthening of City Level Citizens' Forum (CLCF): After submission of the plan to municipalities, state authorities were contacted for appraisal of the plans. During this period, a forum of citizens was catalyzed to pressurize the municipality and promote ownership of the plans among different groups in the community. Thus, formation of CLCF helped municipality to conduct regular meetings with local stakeholders and state agencies for implementation of plan.
- (j) Technical support for approval of plans: Based on the suggestions of State Level Nodal Agencies (SLNA) formed under JNNURM, the final plans were submitted to the state authorities for approval. A number of meetings were conducted with the senior officials of municipality to facilitate and deepen their understanding on the significance of participatory planning approaches.

### **3.3 Key Achievements**

The achievement of participatory planning approaches lie in the acceptability and ownership of plans by the local stakeholders. The SWM plans prepared through such participatory processes comprehensively dealt with local problems articulated by different stakeholders. Some of the other achievements of this plan were as follows:

**Decentralized management**: One of the key objectives of this plan was to utilize local knowledge and local resources in solving the problems associated with management of waste. Local stakeholders were oriented about the principles of decentralized management to create a sense of responsibility. Thus, it helped to create an understanding that all the sections of community can support ULBs by building

decentralized models to tackle the issue. In order to promote such management structure and processes, concept of decentralized administration was introduced in all the plans where municipalities will provide the service and local community shall be responsible for monitoring of services.

**SWM related data collection by the municipalities in SMTs:** It was observed that all of these towns were ailing with lack of data regarding all the aspects of waste management. This was evident by the fact that the municipalities were unaware that the quantum of collection was far behind the quantum of waste generated in the planning area. Also, template prepared for these municipalities by state authorities was not updated with the relevant questions. Thus, field surveys were done in all the towns in various communities within the towns to know the exact quantity of wastes generated which would commensurate the resources required by municipality to manage it.

**Mechanism to capture economic value of waste**: Solid waste is defined as the waste which does not have economic value in eyes of first user. However, it has economic value for the secondary users and provides them the livelihood support. Therefore, mechanism of capturing the economic value of waste was introduced in the plan with the introduction of the concept of Dry Recycle Centre (DRC). These DRCs were recommended for informal sectors of the towns those who were dependant on the waste for their survival and livelihood. It will provide economic benefits to municipality by selling the recyclable waste to private agencies. In addition to this, collection of recyclable material will promote segregation of waste at all levels.

**Integrated partnership model:** The participatory DPR process introduced a new approach to tackle the issues related to basic service in small and medium towns. This type of model helped to generate a demand based plan which identified and addressed the issues of all the stakeholders. Each component of the plan involved the community to tap resources identified and prioritized by the people. Such engagements helped in evolving a sustainable plan for small and medium towns

# Chapter 4 Key Lessons and Way Forward

## 4.1 Key Challenges

#### (a) Lack of awareness in municipalities and citizens on participatory planning

Lack of awareness among municipalities as well as citizens on participatory planning inhibited them to fully participate in the plan preparation. Planners, local leaders and the municipal authority at times were apprehensive and resentful about participatory approaches as they wrongly conjured the approach as a need arising out of failure on their part to deliver. They became apprehensive to the process as they thought it was a challenge to their authority, which may result in their losing power. It therefore required to build the capacity of the local authority and citizen leaders on the process and its benefits, which was understood to affect the status and political influence of leaders in the society.

In the beginning, the municipalities seemed to be confused in following the new methodologies which was different from their traditional process of expert driven planning. Although different type of surveys are important to assess the current situation as fundamental requirement in the preparation of plan, most of the surveys and tests were expensive to bear by such small and medium municipalities.

#### (b) Investing adequate time in the preparation of plan

Preparation of participatory plan required investing adequate time to prepare all the stakeholders to meaningfully participate and therefore costs. The participatory approach required time for environment building, stakeholder consultation, conceptual plan sharing, draft plan sharing and final plan sharing. On the other hand reluctance of citizens in plan preparation comes as major obstacle for stakeholder consultation which was resolved by educating them about importance of citizen participation in plan preparation.

# (c) Absence of a supportive legislative framework limits community and civil society engagement

Lack of supportive legislative framework limited the participation of citizens, civil society organizations and other stakeholders. The existing state legislations (municipal as well as town planning acts) did not adequately recognize the potential contributions of the citizens, CSOs, municipalities, etc. in preparation of the plan. As a result their valuable contribution to the planning process and subsequent implementation process often missed out. Governments needed to acknowledge local people's knowledge, and work in close collaboration with the communities in all aspects - information procurement, planning, prioritizing, monitoring, implementing etc. Support to the process by senior level bureaucrats, politicians, and senior planners helped in taking forward the process and in influencing policy.

#### (d) Lack of respect to local knowledge and information

The culture of disrespect towards local knowledge and information by urban experts is counterproductive. Distrust in local knowledge leads to hypothetical plan which is impractical and unsustainable for urban development. The demands articulated by the stakeholders are often considered by the experts as ineffective as compared to the immediate technical requirements and solutions. It is a challenge for participatory urban planner and city managers who prepare plans to find a match and creative blend of local knowledge and wisdom and expert technical knowledge.

#### (e) Apprehension of non-implementation of the plan

The municipality and community had experience wherein plans have been prepared but never been implemented resulting in tangible changes in service delivery. Inviting participation and ownership of the citizens and municipal authority in such situations posed greater challenges. The municipality in face of powerful state government also felt helpless in the implementation of the plan.

### **4.2 Key Lessons Learnt**

Participatory planning of Solid waste Management in small and medium towns has important lessons to be learnt, which evolved from the challenges faced during the preparation of plan. The lessons can be applied to areas where participatory DPR needs to be prepared.

#### (a) Identification of stakeholder groups

For preparation of participatory DPR, stakeholders are the most important component at all stages. In order to achieve the desired outputs it will be imperative to identify the primary and secondary stakeholders in the formulation and implementation of the plan through a series of discussions. In the process several stakeholder groups emerge as to help in raising awareness among other stakeholders about the planning process.

#### (b) Mechanism for data collection and data management

It is well known that municipal authorities in most of the small and medium towns do not have up-to-date and accurate data related to Solid Waste Management. It is important to figure out a proper mechanism for preparing database regarding primary information about the town. This helps in recommending appropriate quantity of resources required to achieve economic feasibility of the plan. Also, a mechanism needs to be in place so that the municipal authorities update the data regularly.

#### (c) Intensive orientation and training programmes

Orientation and training programmes should be conducted at the initial stage of plan preparation in order to increase the knowledge of stakeholders about the issues related to participation, solid waste management and decentralized management. The knowledge enhancing exercise would galvanize further the grassroot knowledge in such a manner that the suggestions obtained from stakeholders are thoughtful and feasible.

#### (d) Result oriented stakeholder consultations

After achieving the desired level of understanding about the stakeholders, consultations should be organized to know the demands and requirements of various stakeholders and the rationale to respond to them. These consultations should be result oriented without raising any conflicts among various stakeholders on issues that are not related to plan. On the basis of different types of consultations and technical analysis of the town, recommendations must be prepared for plan in accordance with Municipal Solid Waste (Management & Handling) Rules 2000, State Municipal Act and Guidelines.

#### (e) Networking with CSOs, media and state government

The participatory process requires constant networking with different sets of partners to garner maximum support for implementation of the plan. This type of networking helps in informing and educating citizens and civil societies, facilitate citizen participation in the planning, implementation and monitoring of plan and offering technical capacities possessed by different groups or actors.

#### (f) Phase wise implementation strategy

The participatory plan should have phase wise implementation strategy. It should clearly tap the recommendation of stakeholders to prepare an investment plan which identifies resource needs, potential areas for tapping resources and roles of each partner in the short, medium and long run. It is also important that all the actors are comfortable with the process and the phasing strategy proposed under the plan.

#### (g) Integration of livelihood with participatory SWM Plan

Solid waste is also livelihood product for urban poor such as recyclers, scavengers and hawkers who are directly associated with collection of recyclable materials from the households and other sources of solid wastes. Thus, recommendation for improvement of these groups would also help in solving the institutional and service related problems of municipality at a large scale.

#### (h) Promotion of private sector and community participation

It is well known that municipality does not have sufficient resources and capacities to provide services in small and medium towns on its own. However, an efficient decision to promote private sector and/or community participation will definitely help in curbing the problems related to service provision. The contract shall be handed over to efficient private or community operator.

#### (i) Recommendations on the sustainability of the plan

Participatory plans should have recommendations that lead to sustainability of the action plan. In order to achieve this, sustainability phenomena should be studied and factors associated with it shall be incorporated in the plan.

### **4.3 Recommendations**

Solid Waste Management is an obligatory responsibility and cannot be neglected in any case by the municipalities. Different municipalities will move at varying pace on these issues but momentum needs to be developed. Municipal Solid Waste Management requires both increasingly sophisticates management as well as relatively small capital investment. However, there is ample evidence that conventional approach to planning and implementation of SWM in small and medium towns is not effective and sustainable. The indirect participation, which offhandedly involves citizens, is also a token gesture as the prepared plan is presented to the elected body for objections/ suggestions, who are generally incapacitated to comprehend the full significance of the plan. The participatory SWM planning process on the contrary is a viable management tool that focuses on participation of stakeholders for incorporation and utilization of local knowledge, skills and resources to prepare the plan, which will prioritize the issues of stakeholders, can have the feeling of ownership and have concerns for investment since the decisions directly affect them.

It rests heavily upon effective facilitation to mobilize and sensitize the stakeholders for participation. Civil Society Organizations can play a key role in supporting grassroots mobilization, and sharing their knowledge about these issues. The initiative undertaken by PRIA to prepare participatory plans for selected town is a unique experience to achieve a common objective. It brought into focus the issues of citizens to the municipalities and the state governments through various channels of communication during the plan preparation. The concept of decentralization was introduced in every aspect to promote citizen monitoring in the town.

# (a) Up-scaling and mainstreaming of methodologies related to citizen centric centric planning

Different methodologies related to citizen participation have been introduced in the planning process, however, it is important to upscale and mainstream these methodologies in the long run. Continued dialogue and advocacy is required to

mainstream this process in small and medium towns. Also, monitoring by the ministry and other stakeholders would also mainstream citizen participation in the long run.

# (b) Favorable legislative framework for enactment of community participation Law

Mainstreaming of citizen centric planning depends on enactment of legal framework for community participation in municipalities. Therefore, enactment of community participatory law is essential for successful implementation of plan in small and medium towns. This will provide a legal route to municipalities who are focused towards citizen engagement.

#### (c) Enhancing community ownership

The success of the plan depends largely on the participation of the people in the implementation and monitoring of activities and outcomes. Institutional support is important to build innovative strategies for strengthening stakeholder participation. It has been experienced that the partnership built between the people and the concerned authorities can bring long lasting changes by invoking a sense of community ownership of the process, ensuring sustainability of the plan.

#### (d) Promotion of decentralized management

It has been proposed in the plan that decentralized management is the key to achieve sustainability in the plan. Various decentralized practices such as three-tier structure of administration (ward, zone and town), household level treatment of waste are some of the activities which could decentralized in all the towns.

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