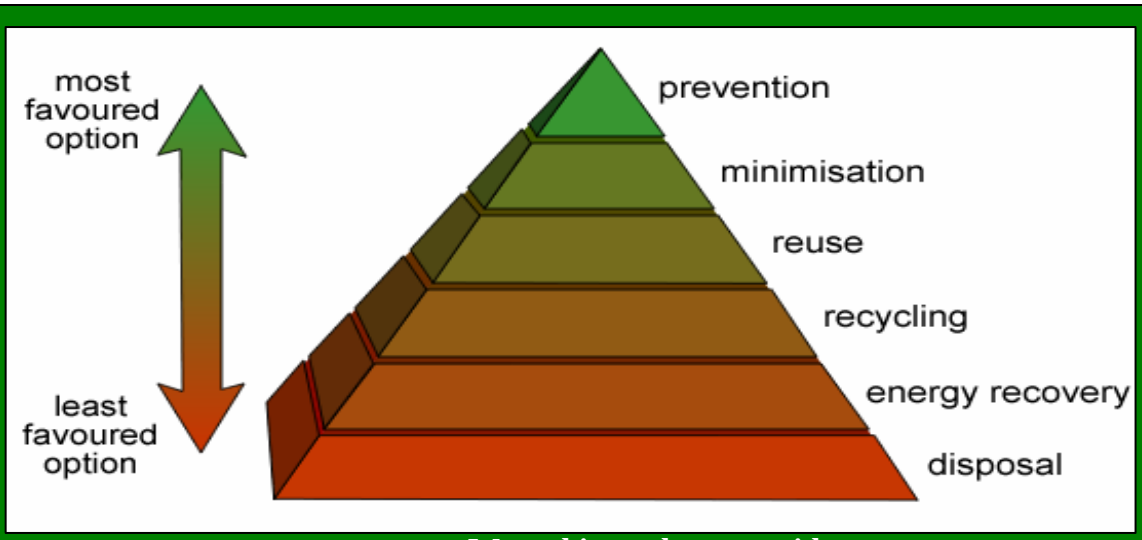
CHAPTER 3

Waste policy and strategies for waste reduction, reuse and recycling

Objective 2: Whether a specific policy for management of wastes existed and whether policies and strategies for the management of waste gave priority to waste reduction and waste minimisation as against waste disposal.

A policy is a deliberate plan of action to guide decisions and achieve rational outcomes and provides a focused thrust to the activities towards achievement of the desired results. Relevant and timely strategies aid in operationalising policy. United Nations Conference on Environment and Development, in 1989, affirmed that environmentally sound management of wastes was among the environmental issues of major concern in maintaining the quality of the Earth's environment and especially in achieving environmentally sound and sustainable development in all countries. Further, Agenda 21 stated that governments should "*promote waste prevention and minimisation as the principal objective of national waste management programmes*" and that governments should "*develop and implement national plans for waste management that take advantage of, and give priority to waste reuse and recycling*".

An overall national or regional ***waste policy*** determines and governs the framework for activities in the waste sector. A clear, concise and consistent policy is a necessary requirement for the waste industry to establish and set up waste management systems and make necessary investments. Thus, a well-established and supported ***waste policy*** is of crucial importance in waste management. According to UNEP, one element common to most waste policies is a ***waste hierarchy***. This hierarchy is a stepwise approach to waste management in the order of environmental priority for different waste management options as illustrated in the waste pyramid below.



Waste hierarchy pyramid

The general principles of the waste hierarchy are prevention, minimisation, reuse, recycling, energy recovery and disposal with prevention being the most favoured and disposal being the least favoured option.

3.1 Existence of a defined waste policy

3.1.1 At the central level

MoEF did not make available information as to whether it had framed a separate waste management policy. However, audit analysed all the policies, laws and rules framed by MoEF and it emerged that MoEF had not framed a separate policy governing the management of waste. Further, a clear hierarchy for the management of waste had also not been defined. In 2006, MoEF laid down the National Environment Policy (NEP) that did reflect some concerns on recycling and waste reduction strategies; but these were not organised into a coherent waste management policy, reflecting the waste hierarchy (further discussed in Paragraph 3.2.1).

Thus, due to absence of a policy on the management of waste, it was not apparent whether the objectives and programmes outlined in Agenda 21 of the World Commission on Sustainable Development had been adequately represented in the waste management programmes being implemented all over India.

3.1.2 By the states

In the absence of a waste policy framed by MoEF, which, as the nodal ministry for the control of pollution would guide the implementation of '3 Rs'[9] all over the country, it was noticed that the state governments had not paid sufficient attention to the implementation of 3Rs. Of the sampled 24 states it was observed in audit that:

- Only 16 *per cent* of the sampled states had accorded some priority to the '3 Rs'. ***West Bengal*** had made efforts for reduction of the use of plastic bags and reduction of some categories of industrial waste while in ***Rajasthan***, state government had framed waste management policy for utilisation of municipal solid waste and bio-medical waste in generation of power, compost and other products in 2001 and had also defined priority in the guidelines. State governments in ***Maharashtra*** and ***Gujarat*** had accorded priority to waste minimisation/reduction of municipal solid waste and industrial waste respectively.
- 38 *per cent* of the sampled states had not made any efforts to implement the '3 Rs' while it could not be verified in audit whether 46 *per cent* of the states had made any efforts to implement the '3 Rs'. List of states is attached in **Annexure 2**.

Thus, at the level of the states, disposal remained the most favoured solution to the management of waste, instead of waste minimisation and waste reduction. This was further brought out by the fact that only disposal of waste was taking place in the sampled municipalities and no attention was paid to waste processing, as discussed

[9] Waste reduction, reuse and recycle.

in Paragraph 6.2.1 in Chapter 6 of this Performance Audit report. Absence of separate waste management policy incorporating the '3 Rs' would mean that waste management initiatives would continue to be haphazard.

MoEF replied in August 2008 that with regard to policies for management of hazardous waste, MoEF had already prepared a National Environment Policy, 2006 which included management of hazardous waste keeping in view the importance of waste reduction/reuse/recycle and final disposal. It was silent on the issue of a separate waste policy, incorporating the waste hierarchy.

As reported by Audit in Paragraph 3.2.1, the action plan outlined in National Environment Policy, 2006 have remained only on paper and had not been translated into action. Also, MoEF had not enacted any policy for the management of waste as a whole, and especially municipal solid waste which is most amenable to reduction, reuse and recycle. As a result, policy initiatives do not drive waste reduction, reuse and recycling in India.

International good practices:

- ***Denmark*** follows the Lansink's ladder for preferences in managing waste: Prevention, Design for prevention and design for beneficial use, Product recycling (reuse), Material recycling, Recovery for use as fuel, Disposal by incineration and Disposal to landfill.
- *In* ***Japan,*** waste is seen not simply as things to be disposed off, but rather as a valuable resource. Japan has reinforced its policy measures toward tackling waste issues and strengthened its "3R" (recycle, reduce, and reuse) framework.
- ***Korea***'s waste management policy seeks to provide clean environment to people and the natural ecosystem by minimising waste generation, optimising waste recycle and treating waste generated in an environmentally sound manner and the strategic approach to promote '3 Rs' (reduce, reuse and recycle) is the core measure.
- ***South Africa***'s waste management policy seeks *"to reduce the amount of waste that is generated and, where waste is generated, to ensure that waste is recycled, reused or recovered in an environmentally sound manner before being safely treated and disposed off*".
- ***Ireland's*** policy is the *"integrated waste management"* approach, based on the internationally adopted hierarchy of options which places greatest emphasis on waste prevention, followed by minimisation, reuse, recycling, energy recovery and, finally, the environmentally sustainable disposal of residual waste.
- ***Philippines*** waste management policy promotes a systematic, comprehensive and ecological solid waste management programme, which ensures the protection of public health and environment, utilises environmentally sound methods that maximises the utilisation of valuable resources and encourages resource conservation and recovery.
- ***Finland's*** waste legislation defined waste management activities in the order of precedence i.e. preventing wastes and reducing their harmful impacts, recovering wastes - including primarily their material content and secondarily their energy content and finally safe treatment of wastes and the rehabilitation of any related damage.

Recommendation

- *MoEF may consider framing a specific waste policy for the management of wastes in India, incorporating the internationally accepted hierarchy for management of wastes. States may adopt this policy to give thrust to the '3 Rs' for the management of waste.*

3.2 Strategies for waste reduction/reuse/recycle

Strategies are required to achieve the objectives set out in the waste policy/legislation. They put a plan, policy or law into operation. Strategies to recycle, reuse and reduce waste lessen the amount of waste meant for final disposal and thus, the cost of disposal. Article 21.4 and 21.5 of Agenda 21 of World Commission on Sustainable Development states that *"environmentally sound waste management should focus on (a) minimising wastes (b) maximising environmentally sound waste reuse and recycling (c) promoting environmentally sound waste disposal and treatment and (d) extending waste service coverage."* According to Article 21.10 of Agenda 21, governments should initiate programmes to achieve sustained minimisation of waste generation and according to Article 21.9 (b) of Agenda 21, by the year 2000, all industrialised countries should have in place programmes to stabilise or reduce, if practicable, production of wastes destined for final disposal, including per capita wastes, at the level prevailing at that date; developing countries as well should work towards that goal without jeopardising their development prospects. Audit findings with respect to strategies for waste reduction/reuse/recycle are discussed below:

3.2.1 At the central level

As discussed in Paragraph 3.1.1, MoEF had not enunciated a separate waste management policy and had not laid down a waste hierarchy for the management of waste. It had framed rules for the management of bio-medical, municipal and hazardous waste, all of which focused only on the disposal of the generated waste. The rules do not talk about strategies to reduce, reuse or recycle waste. Thus, priority had not been given to '3 Rs' and waste disposal remained the most preferred solution to the problem of waste management. This was in contrast to the practice of '3 Rs' being followed internationally.

Government of India had enunciated a National Environment Policy (NEP) in 2006, which laid some waste reduction and minimisation strategies. Specifically, the NEP, 2006 declared that industrial and municipal waste is a major cause of soil pollution and proposed an action plan, which among other things, envisaged to:

- Strengthen the capacities of local bodies for segregation, recycling and the reuse of municipal solid waste;
- Give legal recognition to, and strengthen the informal sector systems of collection and recycling of various materials;
- Promote biodegradable and recyclable substitutes for non-biodegradable materials, and develop and implement strategies for their recycle, reuse, and final

environmentally benign disposal, including through promotion of relevant technologies, and use of incentive based instruments;

- Promote adoption of clean technologies by industry, in particular in the small and medium sector, through regulatory and fiscal measures, and standards setting;
- Consider use of revenue enhancing fiscal instruments to promote shifts to clean technologies in both existing and new units;
- Set up a mechanism to network technology research institutions in the country, public and private, for cooperation in technology research and development and adaptation, information, and evaluation of clean technologies. Create a database of such technologies, and promote dissemination of new technologies developed both in India and abroad.

MoEF did not state whether it had taken any action to implement the waste reduction strategies laid down in NEP. Thus, despite identifying industrial and municipal waste as a major source of pollution and laying down an action plan to reduce these wastes, it appeared that the government has not operationalised these strategies.

(a) Municipal Solid Waste

MoEF did not make available any information to show whether strategies to reduce municipal solid waste and plastic waste like deposit refund schemes[10], promoting the use of refill packs etc., had also been introduced in India which would be vital in reducing the generation of these wastes. Other strategies which were increasingly being used internationally, specially to reduce the waste generated by consumer and household goods like eco audit[11], life cycle analysis[12], extended producer responsibility[13], product stewardship[14] etc,. also appear not to have been introduced in India as MoEF did not make available any information to show that these had been proposed or introduced.

(b) Hazardous Waste

[10] These offer customers a financial incentive to return packaging for reuse.

[11] Eco auditing is most frequently thought of as an environmental management tool employed by businesses to facilitate better management of their environmental performance. It is the assessment made by a company or organisation of the financial benefits and disadvantages to be derived from adopting a more environmentally sound policy.

[12] The goal of Life Cycle Analysis is to compare the environmental performance of products and services, to be able to choose the least burdensome one. The term 'life cycle' refers to the notion that a fair, holistic assessment requires the assessment of raw material production, manufacture, distribution, use and disposal including all intervening transportation steps. This is the life cycle of the product.

[13] Extended Producer Responsibility (EPR) is a strategy designed to promote the integration of environmental costs associated with products throughout their life cycles into the market price of the products. Extended producer responsibility imposes accountability over the entire life cycle of products and packaging introduced in the market. This means that firms, which manufacture, import and/or sell products, are required to be financially or physically responsible for such products after their useful life.

[14] Product stewardship is a concept whereby environmental protection centers on the product itself, and everyone involved in the lifespan of the product is called upon to take up responsibility to reduce its environmental impact. For manufacturers, this includes planning for, and if necessary, paying for the recycling or disposal of the product at the end of its useful life. For retailers and consumers, this means taking an active role in ensuring the proper disposal or recycling of an end-of-life product.

It was also noticed during audit that though CPCB had proposed the introduction of strategies for the reduction and reuse of hazardous waste like promotion of clean technologies and products, establishment of technical standards to limit the presence of certain dangerous substances in products, reuse of scrap material, waste exchanges[15], ship to the point of use[16] and remanufacturing[17], no information was provided by MoEF to show whether these strategies had been made operational. In March 2003, MoEF signed Charter on "Corporate Responsibility for Environmental Protection (CREP)" with 17 categories of polluting industries for the prevention and control of pollution through various measures including waste minimisation. MoEF stated that the charter had resulted in commitment from the industries to reduce pollution and waste and to increase recycling. However, MoEF stated that since the CREP scheme had a voluntary compliance approach, it had led to mixed response from the various categories of industries. The effect of the CREP scheme in reducing pollution and waste could not be verified in audit in the absence of any records.

3.2.2 At the level of the states

(i) Most of the states in India had not introduced any strategy for the reduction, reuse and recycling of waste. Out of the 24 sampled states, it was observed that:

- Only eight *per cent* of the sampled states had introduced strategies for reduction, reuse and recycling. State government of ***Rajasthan*** had encouraged industrial units for the adoption of clean technology norms and ***Haryana*** had established technical standards to limit the presence of dangerous substances in products to reduce the quantum of waste being generated.
- Specific strategies like promotion of clean technologies and products, establishment of technical standards to limit the presence of certain dangerous substances in products, eco-audit, life-cycle analysis, reuse of scrap material, waste exchanges, ship to the point of use, remanufacturing, deposit refund schemes, promoting the use of refill packs, extended producer responsibility and product stewardship to reduce the quantum of waste being generated have not been implemented in 63 *per cent* of the sampled states. It could not be verified whether these strategies had been implemented in 29 *per cent* of the sampled states. List of the states is attached as **Annexure 2**.

(ii) With respect to charters/agreements/pacts signed by industries with the state governments/PCBs to introduce greener technologies which would lead to less waste, it was noticed that out of 24 sampled states:

[15] Where the waste product of one process becomes the raw material for a second process. Waste exchanges represent another way of reducing waste disposal volumes for waste that cannot be eliminated.
[16] Making deliveries of incoming raw materials or components direct to the point where they are assembled or used in the manufacturing process can minimise handling and the use of protective wrappings or enclosures.
[17] The most extensive reuse economies are "repair and overhaul" industries which take valuable parts, such as engine blocks , toner cartridges, "one use" cameras, aircraft hulls, and cathode ray tubes and refurbish them in a factory environment, hoping to meet the same specifications as new products.

- Only 17 *per cent* PCBs/state governments had signed charters/agreements with industries. In the sample, PCB of ***West Bengal*** had signed charters/agreements/pacts with industries for the introduction of greener technologies which would lead to less waste. The government had signed Charter on CREPs with 17 categories of industry like aluminim, cement, copper, distillery, pesticides, sugar, tannery etc,. These industries committed themselves to the introduction of greener technologies leading to less waste. Action points and targets with timelines were set for each of the 17 categories of industries. This Charter had lead to the introduction of norms, which are not necessarily limited to compliance of end of the pipe solutions and emission standards to be followed by industries to reduce pollution. CREPs was also signed in ***Uttarakhand*** where it was applicable to 17 categories of industries and this led to introduction of cleaner technology and reduction of water pollution by adopting chemical recovery plant in agro based paper mills, installing electrostatic precipitator and bag filters in sugar mills. CREPs was also signed in ***Orissa*** where it resulted in commitment from industries to reduce pollution and waste and increase recyling. ***Madhya Pradesh*** had cited a case where green technology was being used and stated that the process has resulted in clean technology norms and in decrease in pollution.
- 33 *per cent* of the sampled states had not signed charters/pacts/agreements with industries to reduce pollution and waste and introduce greener technology. It could not be verified in audit whether 50 *per cent* of the sampled states had done so. List of the states is attached as **Annexure 2**.

Thus, waste reduction, recycling and reuse strategies which are beginning of the pipe solution to the issue of waste management and which would result in lessening the amount of waste for final disposal, need to be introduced by MoEF and adopted more effectively by the states.

MoEF replied in August 2008 that the concept and strategy of waste reduction had already been very much envisaged in the bio-medical waste rules with necessary provisions such as segregation of infectious bio-medical waste from other wastes, packaging and colour coding. It was silent on lack of waste reuse, recycle and reduction strategies for other kinds of waste like municipal solid waste, plastic waste, hazardous waste etc,.

However, the bio-medical waste rules only talk about segregation of different kinds of bio-medical waste and its disposal, and do not talk about reduction, reuse and recycling. In addition, no strategies for reduction, reuse and recycling have been introduced for municipal solid waste, e-waste, hazardous waste etc., all of which are significant contributors to waste in India.

Good practices in India:

- ***West Bengal*** PCB along with India-Canada Facility, New Delhi undertook a scheme for adoption of clean technology norms by small and medium scale industries

and waste minimisation circles for the Kolkata metropolitan area which has led to reduction of particulate emission being generated by these small and medium scale industries by 98 *per cent*.

International good practices:

- ***Ireland's*** strategies include *kerbside collection* of recyclable materials in urban areas, *bring bank* for the collection of glass and aluminum materials, *Civic Amenity sites* for the collection of bulky recyclables and household hazardous wastes and *Materials Recovery Facilities & Transfer Stations* to support recovery facilities such as composting or thermal treatment plants.
- ***USA*** has introduced strategies like *Jobs Through Recycling programme* which awards grants for fostering recycling initiatives, *Pay as You Throw* which requires customers who place more solid waste at curb for disposal pay more for the collection and disposal service, *Resource Conservation Challenge* which seeks to increase the rate of municipal solid waste recycling and helping the country meet a national goal of 35 *per cent*. It also identifies targeted waste streams, proposes 2008 goals for each of the targeted streams and lists criteria for identifying projects that will help reach the goals.
- ***New Zealand*** employs strategies like *Design for the Environment* which involves developing tools and techniques of product design that reduce waste, *Clean Production* which focuses on production processes rather than on the product itself to improve resource efficiency and reduce waste generated during production, *Extended Producer Responsibility* which encourages businesses to prevent wastes at source and set up *Take back and recycling schemes*.
- In ***Netherlands***, producers are required to take back and reprocess their products; product recycling is encouraged by introducing refundable deposits.
- ***Korea's*** strategies include *Volume-Based Waste Fee System* which imposes the cost of waste disposal on individual waste generators to reduce the amount of waste, *Waste Charge System* which imposes charges on products that are hard to recycle or that contain hazardous chemicals, *Regulations on Packaging Material* which bans the use of some substances like PVCs and polysterene in packaging and encourages the use of environment friendly packaging material and *Deposit Refund System for Glass Bottles* and *Packaging Container Reuse System* to promote collection and reuse of used containers and packaging material etc,.

Recommendations

- *MoEF and the states may consider introducing effective strategies for the reduction and recycling of household waste like deposit refund schemes, promoting the use of jute bags rather than plastic bags, waste exchanges, etc., for reduction of waste at source.*
- *MoEF and the states may consider introducing programmes for the reduction of hazardous waste like incentive scheme for the introduction of cleaner technology, remanufacturing, reuse of scrap materials etc., for the reduction of waste at source.*

- *MoEF and the states may consider encouraging big manufacturers to introduce eco audits, life cycle analysis, product stewardship/ extended producer responsibility etc., to minimise the waste being produced.*

3.3 Targets/timelines set for the reduction and recycling of waste

Targets and timelines are indicators of the progress made towards achievement of objectives of waste management. They provide feedback whether a programme is effective or not. Article 21.18 of Agenda 21 declared that by the year 2000, all industrialised countries, and by the year 2010, all developing countries, have a national programme, including, to the extent possible, targets for efficient waste reuse and recycling. Audit findings with respect to setting of targets and timelines are discussed below:

3.3.1 At the Central Level

Reduction of Waste: MoEF/CPCB had not set any targets for the reduction of municipal solid waste, bio-medical waste, hazardous waste and e-waste. CPCB also stated that no targets had been set for the reduction of other kinds of waste like waste from power plants, plastic waste, waste electronic items etc,. While MoEF was silent on whether it had set timelines for the reduction of all kinds of waste, CPCB stated that no timelines were set for the reduction of all types of waste.

Recycling of Waste: As for recycling techniques, MoEF stated that they had prepared specific guidelines for recycling techniques only for non-ferrous metals and ship breaking activities. MoEF was silent with regard to recycling techniques for other wastes like municipal solid waste, which have high recycling potential.

3.3.2 At the level of the states

(i) With respect to setting up clear targets for the reduction of each kind of waste and timelines for reduction of municipal solid waste, bio-medical waste, plastic waste, hazardous waste, it was noticed in the 24 sampled states that:

- Targets/timelines had not been laid down for reduction of municipal solid waste, bio-medical waste, plastic waste, hazardous waste etc., by 79 *per cent* of the sampled states and it was not verifiable whether this was done in 21 *per cent* of the sampled states. List of the states is attached as **Annexure 2**.

(ii) As regards setting specific recycling techniques for different kinds of waste, out of the 24 sampled states, it was observed that:

- Specific recycling techniques for different kinds of waste had not been laid down by 54 *per cent* of the sampled states. It was not verifiable in audit whether 46 *per cent* of the sampled states had done so. List of the states is attached as **Annexure 2**.

Waste reduction and recycling strategies seek to prevent the generation of waste. Hence, these are the beginning of the pipe solutions to waste management. In the absence of plans, targets and timelines for waste reduction and waste recycling, MoEF and the states would neither be able to focus their efforts towards waste

reduction nor would they have a clear picture as to whether waste was actually being reduced.

MoEF did not furnish any reply on the issue of plans, targets and timelines for waste reduction and waste recycling.

International good practices:

- ***USA*** has set a national target of 35 *per cent* recycling rate for municipal solid waste through its Resource Conservation Challenge.
- ***Ireland*** has set targets to be achieved by 2013, which are - diversion of 50 *per cent* of household waste from landfill, minimum 65 *per cent* reduction in biodegradable wastes, recycling of 35 *per cent* of municipal waste, recycling of 85 *per cent* of construction and debris waste.
- ***Japan*** has targeted to reduce by 20 *per cent* the garbage discharged from households per person per day as compared with year 2000.

Recommendation

- *MoEF, in consultation with the states, should prepare an action plan for the reduction, reuse and recycling of wastes in India, with clearly defined numerical targets as well as timelines for the achievement of targets.*

3.4 Coordination with other ministries for introducing '3 Rs' strategies

Coordination with other ministries would also be essential in promoting recycling and reuse:

- Ministry of Finance (MoF) could be approached for promoting the procurement of recycled products by the government;
- Ministry of Commerce (MoC) could be approached for providing incentives for the reuse of products in manufacturing; and
- Department of Industries could be approached for promoting the use of recycled products and encourage industries to use cleaner technology, to undertake product stewardship and other such waste reduction, reuse and recycling strategies.

All of these initiatives would have to come from MoEF considering that one of its main roles is the control of pollution and waste is one of the major causes of pollution.

MoEF stated that it had approached MoF and Department of Industries for introduction of cleaner technology that would minimise waste. However, efforts made by MoEF did not lead to any significant policy decisions from MoF and Department of Industries with regard to promoting waste reduction, reuse and recycling strategies. MoEF also stated that it had not approached the MoC for providing incentives for the reuse of products in manufacturing.

Thus, MoEF needs to secure the cooperation of other ministries for promoting the use of cleaner technologies, modern recycling techniques, granting incentives for reuse of products in manufacturing etc., more effectively.

Recommendations:

- *MoEF should coordinate and impress upon the Ministry of Finance for promoting the procurement of recycled products by the government.*
- *MoEF should approach the Ministry of Commerce for providing incentives for the reuse of products in manufacturing.*

3.5 Role of the informal sector in recycling

According to Article 21.26 (b) of Agenda 21, governments should assist informal sector waste reuse and recycling operations. United Nations Commission on Sustainable Development, in its Working Paper for Agenda 21, recommended increased synergy between the formal and informal sectors and said that despite the significant role of the informal sector in solid waste management, there are few attempts to capitalise on this potential. It recommended that United Nations organisations should assist municipal authorities to recognise and integrate the potentials of the informal sector. The Asia-Pacific Environmental Innovation Strategies, an Asia-Pacific initiative to help realize the Plan of Implementation of the World Summit on Sustainable Development, studied the role of the informal sector in the waste management sector and found that in Asia, there are a large number of informal sectors engaged in garbage collection, which collect recyclable materials from individual households and sell them to the recycling market. Most of these informal sectors work in an unorganised manner. Therefore, their work of collecting these materials is not effective and sustainable. It suggested that it would be beneficial to formalise this sector in order to enhance its performance by developing a registration system and providing capacity building, thus to improve its efficiency and minimise the adverse social and environmental impacts from its operations. Audit findings with respect to efforts of MoEF/states in promoting the role of the informal sector in recycling are discussed below:

3.5.1 At the central level

MoEF had not recognised the role of ragpickers in recycling and reducing municipal solid waste formally by an Act/ legislation. Thus, any kind of legal protection was not envisaged for them. In addition, MoEF had not assessed the economic value of the role of ragpickers in recycling and reducing waste. Further, the health risks they were exposed to when sorting out garbage had also not been studied.

3.5.2 At the level of the states

(i) Regarding recognition given to ragpickers, it was noticed in the 24 sampled states that:

- Only in 17 *per cent* of the sampled states had the role of ragpickers been recognised. Governments of ***Delhi, Maharashta, Andhra Pradesh*** and ***Punjab*** recognised the role of ragpickers in recycling and reducing waste. In ***Maharashtra***, directives had been issued to all the municipalities to take the help of ragpickers for the segregation of waste.

- In 54 *per cent* of the sampled states, the role of ragpickers in reduction of waste has not been recognised while it was not verifiable whether in 29 *per cent* of the sampled states**,** this had been done. List of states is attached in **Annexure 2**

(ii) It was also noticed in audit that out of the 24 sampled states:

- The economic value of ragpickers in recycling and waste had not been regognised by 63 *per cent* of the sampled states while it was not verifiable in audit whether 37 *per cent* of the sampled states had done so. List of states is attached in **Annexure 2.**

Recommendation

- *MoEF/states should consider providing legal recognition to rag pickers so that recycling work becomes more organised and also ensure better working conditions for them.*

3.6 Government procurement

Since government procures a lot of goods and services, the role of the government as a purchaser is very significant. As a major purchaser, it can influence the providers of goods and services to provide more environmentally friendly goods and services. According to Article 4.23 of Agenda 21, *"governments themselves also play a role in consumption, particularly in countries where the public sector plays a large role in the economy and can have a considerable influence on both corporate decisions and public perceptions. They should, therefore, review the purchasing policies of their agencies and departments so that they may improve, where possible, the environmental content of government procurement policies, without prejudice to international trade principles."* The 1997 Programme for the Further Implementation of Agenda 21 further encourages governments to take the lead in changing consumption patterns by improving their own environmental performance with action-oriented policies and goals on procurement, the management of public facilities and the further integration of environmental concerns into national policy-making. More recently, the Plan of Implementation adopted at the World Summit on Sustainable Development called for promotion of public procurement policies that encouraged development and diffusion of environmentally sound goods and services. Audit findings with respect to efforts made by the government in procurement of environmentally friendly goods for its use are discussed below:

3.6.1 At the central level

There was no evidence on record to show that MoEF has (a) mooted the proposal that government procurement systems be altered to include Environmentally Preferable Purchasing (EPP) or sustainable procurement and (b) recommended practices for obtaining recycled products**.** Introduction of EPP would give a big boost to taking environmental aspects of products like printers, computers, paper etc., into consideration

and not just price, before any department of the government makes any purchase decision**.**

3.6.2 At the level of the states

With regard to alteration of government procurement systems in 24 sampled states, it was observed that:

- Government procurement systems had not been altered in 46 *per cent* of the sampled states to include EPP. It could not be verified if EPP had been introduced in 54 *per cent* of the sampled states. List of states is attached in **Annexure 2**

Thus, initiatives taken by MoEF and the states in promoting green procurement practices needs to be strengthened.

International good practices:

- ***Canada*** government's green procurement policy seeks to reduce the environmental impacts of government operations and promote environmental stewardship by integrating environmental performance considerations in the procurement process.
- ***Japan's*** Law concerning the Promotion of Procurement of Eco-friendly Goods and Services by the State and Other Entities aims to establish the necessary provisions to encourage the State and local governments to procure eco-friendly goods and to encourage a shift in demand towards eco-friendly goods.
- ***USA's*** Comprehensive Procurement Guidelines is a key component of the government's "buy-recycled" programme, which recommends recycled-content levels for items to be purchased.

Recommendation

- *MoEF should consider the introduction of Environmentally Preferred Purchases and lay down guidelines for the purchase of recycled products to promote the purchase of eco friendly goods by the government and the agencies controlled by it.*

3.7 Consumer information

Consumers as well as the general public need to be educated about the benefits of the '3 Rs' so that there is significant public support for recycling and reduction strategies.

Article 4.26 of Agenda 21 talks about reinforcing values that supports sustainable consumption. It says that governments should promote more positive attitudes towards sustainable consumption through education, public awareness programmes and such means. With reference to waste management, Article 21.20 (e), Agenda 21 says that governments should intensify efforts at collecting, analysing and disseminating to key target groups, relevant information on waste issues.

3.7.1 At the central level

MoEF was silent on the efforts undertaken for promotion of '3 Rs' through the audio-visual and the print media for municipal solid waste and plastic waste. MoEF was also

silent on the efforts undertaken to educate citizens on reuse and recycling of wastes and threats posed to environment and health by open dumping of waste. CPCB stated that it had promoted the '3 Rs' for bio-medical and hazardous waste, though no records were made available to support this claim in respect of bio medical waste.

3.7.2 By the states

Scrtutiny of the efforts made by the state governments in the 24 sampled states for the promotion of reduction, reuse and recycling of waste through the print or the audiovisual media and educating the citizens about the threat to environment and health posed by waste and how reuse, recycling can promote a cleaner and healthier environment, revealed that:

- Only 34 *per cent* of the sampled state governments had promoted reduction, reuse and recycling of waste through the print or the audiovisual media and to educate citizens about the threat to environment and health posed by waste. Eight *per cent* of sampled states had not conducted such publicity. There was no evidence to indicate whether any publicity had been carried out in 58 *per cent* of the sampled states. List of states is attached in **Annexure 2.**

Thus, efforts of MoEF and the states to create awareness about waste and '3 Rs' were inadequate. A sustained public awareness campaign would go a long way in creating more awareness about the necessity of inculcating the values of '3 Rs' which would, in turn, result in less generation of waste.

International good practices:

- ***Austria's*** traveling exhibition "entSORGEN", encourages Austrians to ask themselves questions such as "What can I do to avoid hazardous household waste?", "What are the alternatives?" and to motivate them to act.
- ***New Zealand's*** Life after waste programme is aimed at changing how the waste industry and the general public think about waste.
- ***Ireland's*** 'Race against Waste campaign' was launched in 2003 for better awareness and turning that awareness into action.

Recommendations

- *MoEF and the states should consider launching an effective and visible public awareness campaign to educate the general public about the advantages of recycling and reduction of waste, especially municipal solid waste.*
- *MoEF should take up the matter of introducing waste management concepts in schools with the Ministry of Human Resource Development and NCERT.*

3.8 Environment labeling

According to Article 4.20 of Agenda 21, Governments and international organisations, together with the private sector, should develop criteria and methodologies for the

assessment of environmental impacts and resource requirements throughout the full life cycle of products and processes. Results of those assessments should be transformed into clear indicators in order to inform consumers and decision makers. Governments, in cooperation with industry and other relevant groups, should encourage expansion of environmental labeling and other environmentally related product information programmes designed to assist consumers to make informed choices.

3.8.1 At the central level

MoEF introduced a scheme on environmental labeling called "ECOMARK" in 1991. The goal of the scheme was to provide accreditation and labeling for household and other consumer products which met certain environmental criteria along with quality requirements of the Indian Standards for that product. The specific objectives of the scheme were to provide an incentive for manufacturers and importers to reduce adverse environmental impact of products; to reward genuine initiatives by companies to reduce adverse environmental impact of their products; to assist consumers to become environmentally responsible in their daily lives by providing information to take account of environmental factors in their purchase decisions; to encourage citizens to purchase products which have less harmful environmental impacts and ultimately to improve the quality of the environment and to encourage the sustainable management of resources. As per the Scheme, a Steering Committee was set up in MoEF by the Central Government to decide the product categories to be taken up under the scheme, and to formulate the strategies for promotion, future development and improvement of this scheme. The product categories were to be notified from time to time.

India's ECOMARK

It was observed in audit that the Steering Committee was set up in MoEF and a Technical Committee in CPCB, as envisaged in the scheme. The Steering Committee chose the logo for the ECOMARK scheme and the Technical Committee and Steering Committee identified specific products and product categories for classifying the products as environment friendly. CPCB stated that 20 licenses to 15 companies under three product categories had been issued the ECOMARK label. MoEF stated that it had involved the industry in this programme as well as undertaken activities for the creation of mass awareness for promotion and acceptance of the scheme. However, the effectiveness of the ECOMARK scheme could not be evaluated by Audit as MoEF did not produce the records relevant to the working of the ECOMARK scheme.

Further, it was observed that neither MoEF nor CPCB had evaluated the environmental impacts of these products from time to time to ensure that there is continued adherence to the standards laid down. MoEF stated that the ECOMARK products were not being widely used.

Thus, the implementation of ECOMARK scheme had been ad hoc, even though it was launched as early as 1991. As a result, the government did not appear to be in a position to effectively promote the consumption of environment friendly products.

International good practices:

- ***Japan's*** Eco Mark was introduced in 1989 as a seal of approval programme that aims to spread information on the environmental effects of products and to encourage consumers to choose environmentally friendly products and has 64 product categories and has been awarded to 5,176 products.
- ***Germany's*** Blue Angel Programme was introduced in 1977, making Germany the first country to implement a national eco-labeling programme.
- ***Norway, Sweden, Finland, Iceland,*** *and* ***Denmark*** participated in a programme called 'The Nordic Swan', introduced in 1989 as a voluntary and neutral seal of approval programme. It has developed 60 product categories and awarded the label to over 1,200 products.
- ***Taiwan's*** Environmental Protection Administration launched Taiwan's Green Mark Programme in 1992. The programme aims to promote recycling, pollution reduction, and resource conservation and has 41 product categories and has awarded the label to 451 products.

Recommendation

- *The Ministry should review its ECOMARK scheme and include more products under it and monitor adherence to environmental standards of these products. It should also prescribe standards for classifying products as environmentally friendly and carry out environmental impact studies of such products.*

Conclusion

Many countries had a clearly enunciated waste management policy, which also spelt out the hierarchy that would govern the waste management efforts in their respective countries. Despite being a signatory to Agenda 21 of the World Commission on Sustainable Development of the United Nations Conference on Environment and Development, waste management efforts in India were not directed by a policy, which incorporated a clear-cut waste hierarchy. The order of priority for management of wastes had not been defined in India leading to the current focus being only on disposal strategies. No effective strategies have been introduced by MoEF or the states to implement the '3 Rs' (recycle, reduce and reuse).

The National Environmental Policy, 2006, which promoted certain waste reduction strategies, had not been translated into action. Further, role of informal sector in reducing waste had not been adequately addressed. In addition, MoEF had not taken effective action in promoting green procurement practices. Its environment education, consumer information and environment labeling programmes also need strengthening.