SESSION 14

National Legal Policy/ Framework/ Processes

CONTENTS

1. National laws and policies pertaining to Water

1.1. Introduction

Fresh water represents less than 0.5 per cent of the total water on the earth surface. Rest of the water is either in the form of seawater or locked up in icecaps or soil. The worldwide consumption of water is doubling every 20 years, more than twice that of the increase in population.

Water is being used recklessly despite the fact that it is scarce. It is estimated that available technologies along with better practices, the agricultural water demand could be cut by about 50 per cent and that in urban areas by about 33 per cent without affecting the quality of life. However, most governments are not armed with adequate laws or regulations to protect their water systems.

India has almost 14 major, 44 medium and 55 minor river basins. India's ground water resources are almost ten times its annual rainfall. Nearly 85 per cent of the ground water is used for irrigation.

Of the 182.7 million hectares of land used for cultivation, only about 50 million hectares is currently irrigated, the rest is dependent entirely on monsoon rains. Therefore, enlarging the cropped area under assured irrigation is critical for the economy. However, bringing more land under irrigation will take time.

The availability of water in the country is decreasing with every passing day and unless something is done to conserve water, we may be courting trouble viz population, agriculture and industry. Various reports have warned that India, with a sixth of the world's population would face a rapidly growing water crisis, both in urban and rural areas. Such water crisis experts caution could have serious economic and social consequences. According to a Report of the World Bank, it is assessed, "India faces a turbulent water future. Unless water management practices are changed – and changed soon – India will face a severe water crisis within the next two decades and will have neither the cash to build new infrastructure nor the water needed by its growing economy and rising population".

India gets 90 per cent of its rainfall during the summer monsoon season that lasts from June to September. For the rest of the months there is hardly any rain. As a result of the seasonal nature of rain, India can make use of not more than 20 per cent of its potentially available fresh water resources.
Moreover, Himalayan glaciers are said to be receding rapidly and many could melt entirely by 2035. If the giant Gangotri glacier that supplies 70 per cent of the Ganges flow during the dry season disappears, the Ganges would become a

seasonal river, flowing during the rainy season but not summer dry season, when irrigation water needs are the most.

The per capita availability of renewable fresh water in the country has fallen drastically over the last 50 years. The water table is rapidly falling with unregulated over exploitation of groundwater. By 2025, water scarcity in India is expected to be acute and big dams, mega river-linking projects or privatized water distribution may not help. Other than rainfall, the two other important sources of water are rivers and ground water. India has 14 major, 44 medium and 55 minor river basins. India's ground water resources are almost ten times its annual rainfall. Like surface water nearly 85 per cent of the ground water is used mainly for irrigation.

Currently only about 10 per cent of the wastewater generated is treated. The rest is discharged as it is into our water bodies. Due to this, pollutants enter ground water and other water bodies. This water, which ultimately ends up in our household, is often highly contaminated carrying disease-causing microbes. Nina Brooks in her paper entitled 'Imminent water crisis in India' notes: "India's water crisis is predominantly a manmade problem. India's climate is not particularly dry, nor is it lacking in rivers and groundwater. Extremely poor management, unclear laws, government corruption, and industrial and human waste have caused this water supply crunch and rendered what water is available practically useless due to the huge quantity of pollution. In managing water resources, the Indian government must balance competing demands between urban and rural, rich and poor, the economy and the environment".

1.2. Constitutional Provisions pertaining to Water and Water Resources

As most of the rivers in the country are inter-State, the regulation and development of waters of these rivers, is a source of inter-State differences and disputes. In the Constitution, water is a matter included in Entry 17 of List-II i.e. State List. This entry is subject to the provision of Entry 56 of List-I i.e. Union List.

The relevant provisions are Entry 17 in the State List, Entry 56 in the Union List and Article 262. There are other articles and entries, which may have a bearing on the matter; but the ones above mentioned, are specifically concerned with water.

Entry 17 in the State List runs as follows:

"17 - Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of Entry 56 of List I".

Water is indeed in the State List but this is subject to the provisions of Entry 56 in the Union List, which runs as follows:

"56 - Regulation arid development of inter-state rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by parliament by law to be expedient in the public interest".

As such, the Central Government is conferred with powers to regulate and develop inter-State rivers under Entry 56 of List I of Seventh Schedule to the extent declared by the Parliament by law to be expedient in the public interest.

It also has the power to make laws for the adjudication of any dispute relating to waters of Inter-State River or river valley under Article 262 of the Constitution. In case of disputes relating to waters, Article 262 provides:

"Article 262- Adjudication of disputes relating to waters of Inter-state Rivers or river valleys
(1) Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any interstate river or river valley.
(2) Notwithstanding anything in this Constitution, parliament may by law provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as is referred to in clause (1)."

It stands to reason that the legislative competence of a State under Entry 17 must be exercised in such a manner as not to prejudice the interests of other States and create a water dispute within the meaning of Article 262. This has been clearly stated in some of the Tribunals' awards.

Water is not in the Concurrent List; but it is both in the Union List and in the State List. The role given to the Centre in regard to inter-State rivers and river valleys is at least potentially an important one; and this is reinforced by the use of the provisions of Entry 20 in the Concurrent List, namely, `economic and social planning', by virtue of which major and medium irrigation, hydro-power, flood control and multi-purpose projects have been subjected to the requirement of Central clearance for inclusion in the national plan. This has been questioned by some State Governments but the clearance requirement remains. There is of course the requirement of Central clearances under the Forest Conservation Act and the Environment Protection Act.

73rd and 74th Amendments - Apart from the Union and the States there is now a third tier in the constitutional structure, created by the 73rd and 74th Amendments, namely, local bodies of governance at the village and city level: the village *panchayats* and the city *nagarpalikas* (municipalities/corporations). The Eleventh and Twelfth Schedules to the Constitution lay down lists of subjects to be devolved to the *panchayats* and *nagarpalikas.* The lists include, *inter alia*, drinking water, water management, watershed development, sanitation, and so on. It seems likely that in future this third tier will come to play an important role in relation to water-resource development. However, the processes of decentralization and devolution are still evolving, and the role of the third tier is yet to emerge fully.

Deficiencies of the Existing Position – The Sarkaria Commission said that the present constitutional position in relation to water is satisfactory. The Commission was set up in June 1983 by the central government with the objective of examining the relationship and balance of power between Central and State Governments in the country and suggest changes within the framework of Constitution. The Commission was so named as it was headed by Justice Rajinder Singh Sarkaria, a retired judge of the Supreme Court.

Nonetheless, serious doubts in this regard seem warranted, though these are perhaps a matter of hindsight.

- First, even the most general entry regarding water, namely, Entry 17 in the State List, quickly slips into specific uses of water such as water supply, irrigation, etc.

- Secondly, irrigation looms large; and the reference to canals, embankments, drainage, water storage, and so on, shows the heavy influence of the engineering point of view.

- Thirdly, while the word `water' may doubtless be taken to include groundwater, there is no specific reference to the latter; the Constitution-makers seem to have been thinking mainly of river waters.

- Fourthly, the Centre has been given a role only in relation to inter-State rivers and river valleys, but it is conceivable that even in a river which flows entirely in one State that State's intervention might produce environmental or social consequences in another State; and such interventions in intra-State surface waters may also have an impact on groundwater aquifers cutting across State boundaries. There is no explicit recognition of this in the Constitution.

➢ Fifthly, the constitutional provisions do not show any direct evidence of a perception of water as a natural resource much less of water as a part of the larger environment or the ecological system. (Some of the emerging concerns were incorporated into the Constitution at a later stage. Under the 42nd Amendment of 1976, references to the protection of the environment, forests and wildlife were introduced *via* Articles 48A and 51A, and two entries relating to forests and wildlife were added to the Concurrent List.) There is also no explicit evidence of an awareness of traditional community-managed systems of rainwater-harvesting or water management, or of the role of civil society in these matters. Nor is there any *overt* reference to water as a basic essential for life and therefore a basic human and animal right.

Some of these perceptions and concerns are of relatively recent origin, and perhaps the makers of the Constitution cannot be faulted for not having foreseen these developments. Further, a Constitution provides a foundation for the laws of the land, and is essentially a *legal* document; it cannot be expected to spell out sectoral policies in detail. Subject to those caveats, however, it is possible to argue that if the kinds of thinking that have now come to prevail had been well established when the Constitution was being drafted, the constitutional provisions might well have been very different.

1.3. Water Resources Management in India

The management of India's water resources falls under the jurisdiction of a number of government agencies, although the primary responsibility for the development of water belongs to the individual States. The Central government oversees the implementation of national policy on resource development and exploitation, as well as manages inter-state and international rivers and river valleys. It also provides technical advice to individual States on development, flood control, navigation, coastal erosion, dam safety, navigation and hydropower, if required.

The **Ministry of Water Resources** (MOWR) is the principal agency responsible for water management in India and as such, oversees the planning and development of the resource from policy formulation to infrastructure support. Other central departments working in water are:

- Ministry of Agriculture: watershed development and irrigation
- Ministry of Power: hydro-power development
- Ministry of Environment and Forests: water quality

- Ministry of Rural Development: watershed development and drinking water provision

- Ministry of Industry: industrial uses of water
- Ministry of Urban Development: urban drinking water provision and sanitation
- Central Pollution Control Board: water quality monitoring
- Indian Council of Agriculture Research: development of water management techniques

➢ Provisions pertaining to water under the Environmental Protection Act, 1986

The Environmental Protection Act was ratified in 1986 and is based on decisions made at the United Nations Conference on the Human Environment that was held in Stockholm, Sweden in June of 1972. The Act is concerned with the "protection and improvement of the human environment" and as such, does not focus solely on water resource issues. The principal impact of the Environmental Protection Act on water is in terms of protecting water from environmental pollution. In the Act, the government has the power to:

- plan and execute programs related to control and abatement of environmental pollution;
- establish quality standards and maximum allowable limits for emissions and discharges;
- develop standards for the handling of hazardous materials and other substances;
- restrict development in sensitive areas; and
- conduct inspection of facilities as needed to prevent environmental pollution.

Contravention of the Act can result in imprisonment up to five years or a fine up to one lakh Rupees, or both. An additional fine of up to five thousand Rupees per day can be levied if the polluter purposely continues to contravene the regulations.

➢ International Treaties signed by India

A number of international disputes regarding the allocation and management of the water in several large transboundary rivers have arisen between India and its neighbours. Fortunately, these differences have been settled through diplomatic channels with the signing of treaties and agreements.

The three principal treaties are:

- The Indus Waters Treaty - India and Pakistan (1960)
- The Indo Nepal Treaty on the Integrated Development of Mahakali River (1996)

- The Ganges Water Sharing Treaty with Bangladesh: Sharing of Lean Season Flow of Ganga at Farakka Barrage in India (1996)

All three disputes arose from disagreements on the allocation of water resources between India and the other countries. In the case of both the Indus and Mahakali Rivers, the equitable distribution of irrigation water was under contention. The Farakka Barrage dispute originated when the water level entering Bangladesh from India was reduced to almost nothing during the lean season (January to May) due to the construction of the Farakka Barrage on the Indian side of the border. In 1996, an agreement was reached between the governments of India and Bangladesh to share the flow during the lean season in the ratio of 60% (Bangladesh) and 40% (India).

Although the treaties have been signed, there are still a number of issues which remain to be resolved. However, in general, the treaties have generated a sense of goodwill between India and its neighbours which bodes well for future collaborations.

1.4. The National Water Policy, 2002

The current National Water Policy (NWP) in India was formulated in the year 2002. Prior to the said policy, the Water Policy in existence was the NWP of 1987.

The 1987 policy has envisaged a plan promising drinking water for all by 2005. However, it remains as an elusive dream even today. Moreover, there were various loopholes in the 1987 policy and hence, the need arose to revise the NWP. However, it was only in 2002, after a gap of 15 years, that the Union Government released a revised version of the NWP.

The NWP 2002, for the first time, recognizes water as a precious `national asset', a part of larger ecosystems that is to be treated as an essential environment for sustaining all life forms.

The policy emphasizes planning, development and management of water resources in a national perspective through a well-developed information system and river basin organizations for the integrated and multidisciplinary management of entire drainage basins. It has prioritized water allocation, starting with drinking water, irrigation, hydropower, ecology, agro-industries and non-industries, navigation and other uses. It details the various elements required for effective implementation, including environmental-developmental factors and methodological aspects ranging from groundwater, flood control, sea erosion, rehabilitation and inter-State distribution to project planning, participatory approach, private sector participation, etc. For the first time, it asserts the `polluter

pays' principle to manage polluted waters, and legislation to preserve existing water bodies from encroachment and water quality deterioration.

The broad objective of the guidelines governing the allocation of water is defined as "developing the waters of Inter-State River for the betterment of the population of the co-basin States/Union Territories to the extent such developments are not detrimental to the interests of other co-basin States".

Section 21 of the 2002 policy deals with the point of sharing of water among States and provides as follows:

Water Sharing / Distribution amongst the States

21.1 The water sharing / distribution amongst the states should be guided by a national perspective with due regard to water resources availability and needs within the river basin. Necessary guidelines, including for water short states even outside the basin, need to be evolved for facilitating future agreements amongst the basin states.

21.2 The Inter-State Water Disputes Act of 1956 may be suitably reviewed and amended for timely adjudication of water disputes referred to the Tribunal.

Policy of 1987 basically dealt with the idea of developing the water shared by 2 or more states, whereas, the policy of 2002, dwells on the point that rules should be framed, which must be abided by to facilitate the agreements, made between states.

- **Criticisms to the NWP of 2002**

The NWP of 2002 emphasizes continued government control over water resources. Critics of the policy say that it is not the revision of 1987 policy that was long overdue, but what is truly overdue is the removal of those entrusted with its implementation. The NWP has been highly criticized for its stand in continuing government control and for the lack of effective inclusion of crucial water management techniques such as rainwater harvesting, community management of water resources, etc. Sunita Narain, director of the Center for Science and Environment (CSE), is of the opinion that the policy ignores the potential of rainwater harvesting and the importance of involving local communities in simple methods to ensure that rainwater is trapped and refills natural aquifers in the ground. She said, “The National Water Policy will remain inert and ineffectual because it is far removed from the two simple but important challenges of water management today, i.e. rainwater harvesting and community management in this initiative".

The 2002 NWP document is a repeat of the 1987 water policy with words like ‘community’ and ‘participatory approach’ merely added to it on paper but not in sprit. Many experts have also dismissed the document as a mere short-term policy guide. They say that the policy merely highlights issues that need immediate attention but fails to give a strategy for their effective implementation.

The revised policy emphasizes on strengthening the existing State Institutions, but says little about empowering the local communities. Community participation has been limited to mere consultation, say experts. Local people have no role to play in the implementation process, as per the policy.

A part of the funds are directly released by the Central Government to these communities. Nevertheless, as their roles remain unspecified, many fear that it could lead to gross misappropriation of funds. According to L.C. Jain, a former member of India's Planning Commission, India has over the last 50 years spent $50 billion on developing water resources and another $7.5 billion on drinking water with little to show for the money, much of which was siphoned out through a corrupt contractor system. Apart from big dams and irrigation systems, the government has encouraged the digging of millions of tube wells and bore wells energized by electric and diesel-driven pumps that now provide half of the country's irrigation. As more and more water is pumped out of the ground, there has been a dramatic lowering of the water table across the country. Groundwater in States that have taken to intensive agriculture under the so-called Green Revolution of the 70s are now turning brackish or are ridden with fluorides or arsenic.

By 1991 a review of the irrigation sector by the World Bank showed that one of the world's largest irrigation investments was performing unevenly and far below potential, mainly because the focus was on construction of new projects rather than management of existing ones. "Sooner rather than later the burden will be financially unsustainable and infrastructure will be physically unsustainable due to declining construction and maintenance standards. The situation is compounded in some areas by environmental degradation," the Bank noted.

According to Jain, who has served as vice chairman of the World Commission on Dams, the NWP fails to address these problems or to chalk out an effective plan of implementation, creating the possibility of situations where worst fears may come true.

1.5. Interlinking of Rivers

Basically, ' water ' is a State subject, with the Union's role limited to the Inter-State Rivers. The constitutional provisions related to water are contained in the

Seventh Schedule under Article 246. Entry 17 of the State List and Article 262 pertaining to the adjudication of disputes relating to waters of Inter-state Rivers or river valleys have already been discussed in detail.

However, other constitutional provisions pertaining to water and Inter-State Rivers contained in the Union List and Concurrent List are mentioned below.

- ***"List I - Union List" (Entry 56)***

It provides that, "Regulation and development of Inter-State Rivers and river valleys to the extent to which such regulation and development under the control of the Union declared by law to be expedient in the public interest".

- ***"List III - Concurrent List" (Entry 20)***

There is no entry on water but there is an entry on planning, under "Economic and Social Planning". Since water is a significant input in agricultural development and industrial development, which are indicators of economic development, and since water is a primary need (drinking and sanitation) for social planning, water resource development could be covered under Concurrent List also.

Only Entry 17 of List II has been in operation all along. However, Entry 20 of List III (Concurrent List) could be also said to have operated indirectly in view of the fact that the Central Government, through the Planning Commission, has to clear Water Resources Development projects for investments if these projects are to be eligible for central funds.[1]

By the powers available under Entry 56 of the Union List and Article 262, Parliament enacted two laws, viz. :-

1) River Boards Act of 1956

It was the first Act made with the provisions for setting up of river boards or advisory bodies by the central government at the request of the interested parties. These boards were to have two functions:

- They would help to bring about proper and optimum utilization of the water resources of inter- state rivers.
- They would promote and operate schemes for irrigation, water supply, drainage, development of hydroelectric power and flood control.

[1] Iyer, R.R., *Federalism and Water Resources*,Economic and Political Weekly, March 26,1994,733-735

Since the enactment of the said legislation, the Central Government has not been able to setup any River Board under this Act so far. The Act has remained dead even after fifty-eight years.
Moreover, the role of the River Boards under the Act is merely advisory in nature. It is hence felt that the Act needs to be amended so that it can serve the purpose for which it was enacted.

2) Inter-State Water Disputes Act of 2002

The mechanism for settlement of water disputes was available in the form of Inter-State River Water Disputes Act, 1956, which provided for settlement of disputes by negotiations failing which referring such disputes to a tribunal for adjudication.

It was observed that the Tribunals set up for resolving inter-State issues took considerable time to give decision/awards. The matter received attention of Sarkaria Commission, which provided certain recommendations in its report at Chapter XVII on Inter-State River Water Disputes.

The recommendations were as follows:-

- Once an application under Section 3 of the Inter-State River Water Disputes Act (33 of 1956) is received from a State, it should be mandatory on the Union Government to constitute a Tribunal within a period not exceeding one year from the date of receipt of the application of any disputant State. The Inter- State River Water Disputes Act may be suitably amended for this purpose.
- The Inter-State Water Disputes Act should be amended to empower the Union Government to appoint a Tribunal, *suo-moto*, if necessary, when it is satisfied that such a dispute exists in fact.
- There should be a Data Bank and information system at the national level and adequate machinery should be set up for this purpose at the earliest. There should also be a provision in the Inter-State Water Disputes Act that States shall be required to give necessary data for which purpose the Tribunal may be vested with powers of a court.
- The inter-State Water Disputes Act should be amended to ensure that the award of a Tribunal becomes effective within five years from the date of constitution of a Tribunal. If, however, for some reasons, a Tribunal feels that the five years period has to be extended, the Union Government may on a reference made by the Tribunal extend its term.
- The Inter-State Water Disputes Act, 1956 should be amended so that a Tribunal's award has the same force and sanction behind it as an order or decree of the Supreme Court to make a Tribunal's award really binding.

These five recommendations were considered by the erstwhile Sub-Committee of the Inter-State Council. The Sub-Committee accepted four out of five recommendations as they were and the remaining one recommendation was accepted with a minor modification, wherein, the time frame specified for constituting a Tribunal by the Union Govt. was increased from one year to two years. The Inter-State Council in its meeting held on 15th October 96 generally endorsed the recommendations. However, in view of the reservations expressed by some of the Chief Ministers, it was decided that they would convey their reservations to the Inter-State Council Secretariat so that their views could be further considered by the Standing committee of the Inter-State council.

Taking into account the views of the State Governments and that of the Ministry of Water Resources, the Inter-State Council Secretariat prepared a consensus paper on the recommendations of Sarkaria Commission, which was deliberated upon during fifth meeting of the Standing Committee of Inter-State council held on 10th November 97 under the chairmanship of the Union Minister of Home Affairs.

The Standing Committee gave its own recommendations on the five recommendations of the Sarkaria Committee. Based on these recommendations (given by the Inter-State Council on Sarkaria Commission's Recommendation) a bill for amending the Inter State Water Disputes Act 1956 was introduced in Lok Sabha on 7th March 2001. The Bill was passed in Lok Sabha on 3rd August 2001 and Rajya Sabha on 11th March 2002 and received the assent of the President on 28th March 2002.

This 2002 Act (Inter-State River Water Disputes Act, 2002) is to provide for the adjudication of disputes relating to waters of Inter-State Rivers and River Valleys. Section 14 of the Act provides for the achievement the objectives set forth. It states:

When any request is received from the state government in respect of any water dispute and the central government is of the opinion that the water dispute cannot be settled by negotiations, the central government is empowered to constitute a water disputes tribunal for the adjudication of the dispute by notifying in the official gazette.

The tribunal thus set up then has to investigate the matters referred to it and forward a report setting out the a facts found by it and giving its decision on the same within a period of three years.

- **Inter-State Rivers disputes – A few case studies**

Most of the major rivers in India are inter-State rivers and there have been some inter-State disputes on sharing of water. Efforts are being made to facilitate resolution of these disputes through negotiations amongst the basin States. Adjudication with the help of water disputes tribunals is also resorted to as and when warranted.

Since the majority of rivers in India are shared between neighbouring States, under the Inter-State Water Disputes Act, the government has the power to constitute Tribunals to serve as intermediaries in the disputes.

To date, five Inter-State Water Tribunals have been established:

1. Godavari Water Disputes Tribunal (April 1969)
2. Krishna Water Disputes Tribunal (April 1969)
3. Narmada Water Disputes Tribunal (October 1969)
4. Ravi and Beas Waters Tribunal (April 1986)
5. Cauvery Water Disputes Tribunal (June 1990)

The first three Tribunals have been completed, but a final decision is still pending on the last two matters.

2. Agriculture Policy and Urban Development Policy

2.1. National Agriculture Policy, 2000

Agriculture is the mainstay of the Indian economy. Agriculture and allied sectors contribute nearly 22 per cent of Gross Domestic Product (GDP of India), while about 65-70 per cent of the population is dependent on agriculture for their livelihood. The agricultural output depends on monsoon as nearly 60 per cent of area sown is dependent on rainfall rather than other sources of water.

Despite a steady decline in its share of the GDP, it remains the largest economic sector in the country. Low and volatile growth rates and the recent escalation of agrarian crisis in several parts of the Indian countryside are a threat not only to national food security, but also to the economic well-being of the nation as a whole.

The first ever National Agriculture Policy was announced on 28th July, 2000. The National Policy on Agriculture seeks to actualize the vast untapped growth potential of Indian agriculture, strengthen rural infrastructure to support faster agricultural development, promote value addition, accelerate the growth of agro business, create employment in rural areas, secure a fair standard of living for the farmers and agricultural workers and their families, discourage migration to urban areas and face the challenges arising out of economic liberalization and globalization.

Over the next two decades, it aims to attain:

1. Over 4 per cent annual growth rate aimed over next two decades
2. Greater private sector participation through contract farming.
3. Price protection for farmers.
4. National agricultural insurance scheme to be launched.
5. Dismantling of restrictions on movement of agricultural commodities throughout the country.
6. Rational utilization of country's water resources for optimum use of irrigation potential.
7. High priority to development of animal husbandry, poultry, dairy and aquaculture.
8. Capital inflow and assured markets for crop production.
9. Exemption from payment of capital gains tax on compulsory acquisition of agricultural land.
10. Minimize fluctuations in commodity prices.
11. Continuous monitoring of international prices.

12. Plant varieties to be protected through a legislation.
13. Adequate and timely supply of quality inputs to farmers.
14. High priority to rural electrification.
15. Setting up of agro-processing units and creation of off-farm employment in rural areas.

2.2. Urban Development Policy

The Constitution of India has assigned the subjects pertaining to the urban areas to the State Legislates. In so far as the urban issues are concerned, the legislative powers of the Union are limited only to the following subject/areas:

- Delhi and other Union Territories
- Property of the Union
- A subject of the state list which two or more state legislatures authorise Union Parliament to legislate.
- Amendment of the Constitution of India.

In exercise of these legislative powers, the Parliament of India has enacted the following legislations which are administrated by the Ministry of Urban Development.

➢ Constitution (Seventy-Fourth Amendment) Act 1992

This is a revolutionary piece of legislation by which Constitution of India was amended to incorporate a separate Chapter on urban local bodies, which seeks to redefine their role, power, function and finances. The salient features of this Act are:

- Urban local bodies, to be known as Municipal Corporations, Municipal Councils and Nagar Panchayat depending on the population, shall be constituted through universal adult franchise in each notified urban area of the country.

- These shall be constituted for a period of five years and if dissolved earlier, an election to reconstitute it shall be completed before the expiration of a period of six months from the date of its dissolution.

- Not less than one-third of total number of seats in each urban local body shall be reserved for women.

- The Legislature of a State may by law entrust on these bodies such power and authority as may be necessary to enable them to function as institution of local self government, including those listed in the Twelfth Schedule.

- The Twelfth Schedule of the Constitution has listed the following functions of the urban local bodies:

    - Urban Planning including town planning.
    - Regulation of land-use and construction of buildings.
    - Planning for economic and social development.
    - Roads and bridges.
    - Water supply for domestic, industrial and commercial purposes.
    - Public health, sanitation, conservancy and solid waste management.
    - Fire services.
    - Urban forestry, protection of the environment and promotion of ecological aspects.
    - Safeguarding the interests of weaker sections of society, including the handicapped and mentally retarded.
    - Slum improvement and upgradation.
    - Urban poverty alleviation.
    - Provision of Urban amenities and facilities such as parks, gardens, playgrounds.
    - Promotion of cultural, educational and aesthetic aspects.
    - Burials and burial grounds; cremations, cremation grounds and electric crematoriums.
    - Cattle pounds; prevention of cruelty to animals.
    - Vital statistics including registration of births and deaths.
    - Public amenities including street lighting, parking lots, bus stops and public conveniences.
    - Regulation of slaughter houses and tanneries.

- In order that the urban local bodies can perform the functions assigned to them, the Legislature of a State shall assign them specific taxes, duties, tolls and levies and authorize them to impose, collect and appropriate the same.

- Each State shall also constitute a Finance Commission which shall review the financial position of the urban local bodies and recommend the principles which should govern the devolution of resources, including grant-in-aid from the Consolidated Fund of the State of these bodies.

- The superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to the urban local bodies shall vest in the State Election Commission.

- In each district a District Planning Committee shall be constituted to consolidate the plan prepared by the urban and rural local bodies.

- Similarly for each metropolitan area a Metropolitan Planning Committee shall be constituted to prepare a development plan for the metropolitan area a whole.

All the State Governments have either enacted new Municipal Law or amended the existing laws to conform these to the Constitution (74th Amendment) Act, 1992. All the States (except Jharkhand and Pondichery) have conducted the election to the local bodies.

All the States (except Arunachal Pradesh) have constituted State Finance Commissions and most of the Commissions have submitted their reports to the State Governments, recommending significant devolution of resources to the urban local bodies. The national Eleventh Finance Commission has also recommended devolution of Rs. 2000 crores as grant-in-aid from the Central Government to the urban local bodies.

Constitution (74th Amendment) Act 1992 has made the urban local bodies into vibrant self governing institutions. This has ushered in a new era of urban governance and urban management in India.

A list of urban legislations passed by the Union Government are:

1. **Delhi Development Act 1957**

This Act replaces the Control of Building Operations Ordinance 1957 by which the DDA was constituted. The Act defines the constitution role, powers and functions of Delhi Development Authority. It further defines the development area of Delhi and stipulates that any development of land in this area shall be undertaken or carried out after obtaining the permission from DDA. The DDA shall prepare the Master Plan for Delhi and Zonal Plans which shall regulate the development of Delhi. The Act also authorises DDA to levy betterment charges in respect of the increasing value of the property resulting from the execution of development.

2. **Delhi Urban Art Commission Act, 1973**

By this Act, Delhi Urban Art Commission was constituted with a view to preserving, developing and maintaining the aesthetic quality of urban and environment design in Delhi.

3. National Capital Region Planning Board Act, 1985

By this Act, the NCR Planning Board was constituted to regulate the growth and to prepare plans and policies for balanced and harmonised development of National Capital Region.

4. Delhi Rent Act 1995

Delhi Rent Act was enacted on 22.08.1995 primarily with a view to balance the interests of the landlords and the tenants. However, the Act could not be brought into force due to agitation by various groups. It was then decided to bring the Act into force after effecting amendments to some of its provisions. The Delhi Rent (Amendment) Bill, 1997 was introduced in the Rajya Sabha on 28.07.1997. The Bill was then referred to the Parliamentary Standing Committee on Urban & Rural Development for examination and report. The Parliamentary Standing Committee on Urban and Rural Development of the 13 th Lok Sabha submitted its report to the Parliament on 21.12.2000. The Government considered the Report of the Committee and accepted all the recommendations of the Committee. Steps were initiated to move official amendments to the Amendment Bill but it could not be debated till the dissolution of the 13 th Lok Sabha. After formation of the 14 th Lok Sabha and the new Government, action has been initiated to place the matter before the Cabinet for pursuing the Amendment Bill further.

5. Delhi Apartment Ownership Act, 1986

Delhi Apartment Ownership Act, 1986 came into force from 1.12.87. The Act was found to be ineffective as it lacked penal provisions. Suggestions for major amendments and revisions came from various quarters. After examining the matter in detail and taking into account various factors, it was decided by the Government to repeal the Delhi Apartment Ownership Act, 1986 and introduce the Delhi Apartment Ownership Bill in lieu thereof. The Delhi Apartment Ownership Bill, 2001 was introduced in the Lok Sabha on 24.7.2001. The Bill was, thereafter, referred to the Standing Committee on Urban and Rural Development for examination and report. The Committee submitted its report to the Parliament on 17.12.2002 suggesting some changes in the Bill. The matter has been considered by the Govt. and steps were taken to finalise the Amendments and then place the matter before the Lok Sabha where the Bill was pending. However, in the meanwhile the XIIIth Lok Sabha was dissolved. With this, the Delhi Apartment Ownership Bill, 2001 introduced in the Lok Sabha on 24.7.2001 has lapsed. After constitution of the XIVth Lok Sabha , action has been initiated for fresh consideration of the matter .

6. **The Urban Land (Ceiling & Regulation) Act, 1976 and Urban Land (Ceiling & Regulation) Repeal Act, 1999**

The Urban Land (Ceiling & Regulation) Act, 1976 came into force on 17.02.1976. Initially States of Andhra Pradesh, Haryana, Gujarat, Himachal Pradesh, Karnataka, Maharashtra, Orissa, Punjab, Tripura, Uttar Pradesh and West Bengal adopted the Act. Thereafter, it was adopted by six more states namely Assam, Bihar, Madhya Pradesh, Manipur, Meghalaya and Rajasthan.

However, after review of the matter in totality, the Urban Land (Ceiling & Regulation) Act, 1976 was repealed through an Ordinance on 11.01.99 which was followed by Urban Land (Ceiling & Regulation) Repeal Act, 1999 in replacement of the Ordinance. The Urban Land (Ceiling & Regulation) Repeal Act, 1999 was notified in the Gazette on 22.3.1999. The Repeal Act is in force in the States of Haryana, Punjab, Uttar Pradesh, Gujarat, Karnataka, Madhya Pradesh, Rajasthan, Orissa and all the Union Territories. The Urban Land (Ceiling & Regulation) Act, 1976 is still in force in the States of Andhra Pradesh, Assam, Bihar, Maharashtra and West Bengal.

7. **The Requisitioning and Acquisition of Immovable Property Act, 1952**

The Competent Authority of the Union likely to need any property for any public purpose can requisition the same by calling the Owner of property giving a fifteen days show - cause notices.

8. **The Public Premises (Eviction of Unauthorized Occupants) Act, 1971**

The Act provides for the eviction of unauthorised occupants from the public premises and for certain incidental matters. The Estate Officer, after making such inquiry as he deems expedient in the circumstances of a case, and for reasons to be recorded in writing, may make an order for the eviction of such person(s) who are in unauthorised occupation of public premises.

- **Urban Scenario in India**

In India out of the total population of 1027 million as on 1st March, 2001, about 742 million live in rural areas and 285 million in urban areas. The net addition of population in rural areas during 1991-2001 has been to the tune of 113 million while in urban areas it is 6 million. The percentage decadal growth of population in rural and urban areas during the decade is 17.9 and 31.2 percent respectively.

The percentage of urban population to the total population of the country stands at 27.8. The percentage of urban population to total population in the 1991 Census

(including interpolated population of Jammu & Kashmir where Census could not be conducted in 1991) was 25.7 percent. Thus, there has been an increase on 2.1 percentage points in the proportion of urban population in the country during 1991 – 2001.

Among all the States and Union territories, the National Capital Territory of Delhi is most urbanized with 93 percent urban population followed by Union territory of Chandigarh (89.8 percent) and Pondicherry (66.6 percent).

Among the major States, Tamil Nadu is the most urbanized state with 43.9 percent of the population living in urban areas followed by Maharashtra (42.4 percent) and Gujarat (37.4 percent). The proportion of urban population is the lowest in Himachal Pradesh with 9.8% followed by Bihar with 10.5 percent, Assam (12.7 percent) and Orissa (14.9 percent).

In terms of absolute number of persons living in urban areas, Maharashtra leads with 41 million persons which is 14 percent of the total population of the country. Uttar Pradesh accounts for about 35 million followed by Tamil Nadu 27 million.

The policies of urban development and housing in India have come a long way since 1950s. The pressure of urban population and lack of housing and basic services were very much evident in the early 1950s. In some cities this was compounded by migration of people from Pakistan. However, the general perception of the policy makers was that India is pre-dominantly an agricultural and rural economy and that there are potent dangers of over urbanization which will lead to the drain of resources from the countryside to feed the cities. The positive aspects of cities as engines of economic growth in the context of national economic policies were not much appreciated and, therefore, the problems of urban areas were treated more as welfare problems and sectors of residual investment rather than as issues of national economic importance.

In the First Five Year Plan (1951-56), the emphasis was given on institution building and on construction of houses for Government employees and weaker sections. The Ministry of Works & Housing was constituted and National Building Organisation and Town & Country Planning Organisation were set up. A sizeable part of the plan outlay was spent for rehabilitation of the refugees from Pakistan and on building the new city of Chandigarh. An Industrial Housing Scheme was also initiated. The Centre subsidised Scheme to the extent of 50% towards the cost of land and construction.

The scope of housing programme for the poor was expanded in the Second Plan (1956-61). The Industrial Housing Scheme was widened to cover all workers. Three new schemes were introduced, namely, Rural Housing, Slum Clearance and

Sweepers Housing. Town & Country Planning Legislations were enacted in many States and necessary organisations were also set up for preparation of Master Plans for important towns.

The general directions for housing programmes in the Third Plan (1961-66) were co-ordination of efforts of all agencies and orienting the programmes to the needs of the Low Income Groups. A Scheme was introduced in 1959 to give loans to State Govts. for a period of 10 years for acquisition and development of land in order to make available building sites in sufficient numbers. Master Plans for major cities were prepared and the State capitals of Gandhi Nagar and Bhubaneswar were developed.

The balanced urban growth was accorded high priority in the Fourth Plan (1969-74). The Plan stressed the need to prevent further growth of population in large cities and need for decongestion or dispersal of population. This was envisaged to be achieved by creation of smaller towns and by planning the spatial location of economic activity. Housing & Urban Development Corporation (HUDCO) was established to fund the remunerative housing and urban development programmes, promising a quick turnover. A Scheme for Environmental Improvement or Urban Slums was undertaken in the Central Sector from 1972-73 with a view to provide a minimum level of services, like, water supply, sewerage, drainage, street pavements in 11 cities with a population of 8 lakhs and above. The scheme was later extended to 9 more cities.

The Fifth Plan (1974-79) reiterated the policies of the preceding Plans to promote smaller towns in new urban centres, in order to ease the increasing pressure on urbanisation. This was to be supplemented by efforts to augment civic services in urban areas with particular emphasis on a comprehensive and regional approach to problems in metropolitan cities. A Task Force was set up for development of small and medium towns. The Urban Land (Ceiling & Regulation) Act was enacted to prevent concentration of land holding in urban areas and to make available urban land for construction of houses for the middle and low income groups.

The thrust of the planning in the Sixth Plan (1980-85) was on integrated provision of services along with shelter, particularly for the poor. The Integrated Development of Small and Medium Towns (IDSMT) was launched in towns with population below one lakh for provision of roads, pavements, minor civic works, bus stands, markets, shopping complex etc. Positive inducements were proposed for setting up new industries and commercial and professional establishments in small, medium and intermediate towns.

The Seventh Plan (1985-90) stressed on the need to entrust major responsibility of housing construction on the private sector. A three-fold role was assigned to the

public sector, namely, mobilisation for resources for housing, provision for subsidised housing for the poor and acquisition and development of land. The National Housing Bank was set up to expand the base of housing finance. NBO was reconstituted and a new organisation called Building Material Technology Promotion Council (BMTPC) was set up for promoting commercial production of innovative building materials. A network of Building Centres was also set up during this Plan period. The Seventh Plan explicitly recognised the problems of the urban poor and for the first time an Urban Poverty Alleviation Scheme known as Urban Basic Services for the Poor (UBSP) was launched.

As a follow-up of the Global Shelter Strategy (GSS), National Housing Policy (NHP) was announced in 1988. The long term goal of the NHP was to eradicate houselessness, improve the housing conditions of the inadequately housed and provide a minimum level of basic services and amenities to all. The role of Government was conceived, as a provider for the poorest and vulnerable sections and as a facilitator for other income groups and private sector by the removal of constraints and the increased supply of land and services.

The National Commission of Urbanisation submitted its report. The Report eloquently pointed out the reality of continuing and rapid growth of the urban population as well as the scale and intensity of urbanisation, the critical deficiencies in the various items of infrastructure, the concentration of vast number of poor and deprived people, the acute disparities in the access of shelter and basic services, deteriorating environmental quality and the impact of poor governance on the income and the productivity of enterprises.

In the backdrop of this report the Eighth Plan (1992-97) for the first time explicitly recognised the role and importance of urban sector for the national economy. While growth rate of employment in the urban areas averaged around 3.8% per annum, it dropped to about 1.6% in the rural areas. Therefore, the urban areas have to be enabled to absorb larger increments to the labour force. The Plan identified the key issues in the emerging urban scenario:

- The widening gap between demand and supply of infrastructural services badly hitting the poor, whose access to the basic services like drinking water, sanitation, education and basic health services is shrinking;
- Unabated growth of urban population aggravating the accumulated backlog of housing shortages, resulting in proliferation of slums and squatter settlement and decay of city environment;
- High incidence of marginal employment and urban poverty as reflected in NSS 43rd round that 41.8 million urban people lived below the poverty line.

The response of the Plan to this scenario was the launching of Urban Poverty and Alleviation Programme of Nehru Rojgar Yojana (NRY)

Need of a National Urban Policy

Despite the Report of National Commission on Urbanization (1988) and the two successive National Housing Policies within a span of a decade, the country is yet to evolve a National Urban Policy. States Governments have prepared their respective State Urbanization Strategy Reports taking into account the pattern of urban growth, resources and potentials. At the national level, the Planning Commission has constituted a National Task Force on Urban Perspective and Policy in 1995. Three Technical Groups were also constituted on the subjects of Urban Perspectives and Policy, Urban Infrastructure and Urban Planning. The Technical Group on Urban Planning System under the Chairmanship of Dr. Arcot Ramachandran has submitted its final report. The Reports of other two Technical Groups under the Chairmanship of Shri Vaghul and Prof. Y. K. Alagh are yet to be finalised. After the final reports of the Technical Groups are available the Task Force will finalize its recommendations. These will provide input for the National Urban Policy.

3. Abatement of Pollution

The Environment related Laws enacted by the Parliament under Articles 252 and 253 of the Constitution of India. These include legislations enacted for Abatement of Pollution.

The Water (Prevention and Control of Pollution) Act, 1974 was promulgated as a Central Legislation under Article 252 of the Constitution. Since, the "water" is listed under the State list, a Resolution from two or more State Assemblies empowering the Parliament to enact the Legislation on the State List was required. The Water (Prevention and Control of Pollution) Act, 1974 became effective at the State level when it was adopted by the concerned State Assemblies. The Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986 were promulgated under Article 253 of the Constitution of India, which empowered the Parliament to enact legislations on such matters as necessary for compliance of International Agreements in which India has been a party.

Since 1974, some of the major environmental enactments which have been passed by the Parliament are as follow:

- The Water (Prevention and Control of Pollution) Act, 1974: (6 of 1974)
- The Water(Prevention and Control of Pollution)Cess Act,1977:(36 of 1977)
- The Air (Prevention and Control of Pollution) Act, 1981: (14 of 1981)
- The Environment (Protection) Act, 1986: (29 of 1986)
- The Public Liability Insurance Act, 1991: (6 of 1991)
- The National Environment Tribunal Act, 1995: (27 of 1995)
- The National Environment Appellate Authority Act, 1997: (22 of 1997)

In addition to these Acts, several Rules have also been incorporated under the Environment (Protection) Act, 1986. These Acts and Rules are important guidelines to sort out the environmental problems. Some of the major Rules notified are:

- The Manufacture, Use, Import, Export and Storage of Hazardous Micro-Organism Genetically Engineered or Cells Rules, 1989
- The Hazardous Wastes (Management and Handling) Rules, 1989
- The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
- The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996
- The Bio-Medical Waste (Management and Handling) Rules, 1998
- The Recycled Plastics Manufacture and Usage Rules, 1999
- The Municipal Solid Wastes (Management and Handling) Rules, 2000
- The Noise Pollution (Regulation and Control) Rules, 2000

- The Ozone Depleting Substances (Regulation) Rules, 2000
- The Batteries (Management and Handling) Rules, 2001

The Constitution of India has basic features in respect of the power of judicial review by the Supreme Court. Under Part III of the Constitution, which guarantees fundamental rights to the people and under Part IV, the State is under obligation to implement the Directive Principles. Article 39-A of the Constitution provides "Right of Access to Courts" to the citizens. In exercise of its powers of judicial review, the Court enforces the constitutional and legal rights of the underprivileged by transforming the right to life under Article 21 of the Constitution and by interpretating the Articles 48-A and 51 A (g) of the Constitution. The Hon'ble Supreme Court of India has given a new dimension to the environmental jurisprudence in India with a view to meeting the problems in the environmental field.

The Supreme Court of India in numerous matters elaborated the scope of Article 21 of the constitution of India, which deals with **protection of life and personal liberty -** *No person shall be deprived of his life or personal liberty except according to procedure established by Law.* In the matter of *Rural Litigation and Entitlement Kendra Vs State of U.P.* - the Hon'ble Supreme court held that the right to unpolluted environment and preservation and protection of nature's gifts has also been conceded under Article 21 of the Constitution of India. The Constitutional provisions provide the bed-rock for the framing of environmental legislations in the country. Article 48-A of the Constitution deals with the **Protection and Improvement of Environment and Safeguarding of Forests and Wildlife** – *The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country* . On the basis of the said provisions, the Environment (Protection) Act, 1986 and the Wild Life (Protection) Act, 1972 (as amended in 1986) have been enacted by the Parliament.

Under Part IV-A of the Directive Principles of State Policy, Fundamental Duties have been added under Article 51-A by the 42nd Amendment of the Constitution in 1976. Under Article 51-A(g) provides the **Fundamental Duties with respect to the environment which includes -** *To protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.*

Some legislations that contain specific provisions for abatement of Pollution are:

1. **The Water (Prevention and Control of Pollution) Act, 1974**

The Water Act was enacted by Parliament Act, 1974 purpose to provide for the prevention of control of water pollution and the maintaining or restoring of wholesomeness of water.

The preamble of the Water Act provides that it is an Act to provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water, for the establishment, with a view to carrying out the purposes aforesaid, of Boards for the prevention and control of water pollution, for conferring on and assigning to such Boards Powers and functions relating thereto and for matters connected therewith.

The preamble further provides, “Whereas it is expedient to provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water, for the establishment, with a view to carrying out the purposes aforesaid, of Boards for the prevention and control of water pollution and for conferring on and assigning to such Boards powers and functions relating thereto”.

As on day, it is applicable in all the states of India. In this act, unless the context, otherwise requires

(i) Occupier
(ii) Outlet
(iii) Pollution
(iv) Trade effluent

The relevant provisions of this and are given as below:

Under Section 19 - The entire National Capital Territory of Delhi has been declared as water pollution prevention control area.

Under Section 21 - Officials of DPCC can take samples of the water effluent from any industry stream or well or sewage sample for the purpose of analysis.

Under Section 23 - Officials of the state boards can enter any premises for the purpose of examining any plant, record, register etc. or any of the functions of the Board entrusted to him.

Under Section 24 - No person shall discharge any poisonous, noxious or any polluting matter into any stream, or well or sewer or on land.

Under Section 25 - No person shall without the previous consent to establish shall:

a. Establish or take any step to establish any industry, operation or process or any treatment and disposal system for any extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land or

b. Bring into use any new or altered outlet for the discharge of sewage or

c. Begin to make any new discharge of sewage.

Under this section the state board may grant consent to the industry after satisfying itself on pollution control measures taken by the unit or refuse such consent for reasons to be recorded in writing.

Under Section 27 - A state board may from time to time review any condition imposed by it on the person under section 25 and 26 and may vary or revoke that condition.

Under Section 28 - Any person aggrieved by the order made by the State Board under Section 25, 26 or section 27 may within thirty days from the date on which the order is communicated to hi, prefer an appeal to such authority (referred to as the appellate authority) as the State Govt. may think fit to constitute (in case of NCT of Delhi Appellate authority under this section is Financial Commissioner, Delhi Administration).

Under Section 33 - The State Board can direct any person who is likely to cause or has cause the pollution of water in street or well to desist from taking such action as is likely to cause its pollution or to remove such matters as specified by the Board through court.

Under Section 33A - DPCC can issue any directions to any person, officer or authority, and such person, officer or authority shall be bound to comply with such directions. The directions includes the power to direct:-

i) The closure, prohibition of any industry.
ii) Stoppage or regulations of supply of electricity, water or any other services.

Under Section 43 - Whoever contravenes the provisions of Section 24 shall be punishable with imprisonment for a term which shall not be less than one year & six months but which may extend to six years with fine.

Under Section 45 - If any who has been convicted of any offence under section 24, or Section 25 or Section 26 is again found guilty of an offence involving a contravention of the same proviso shall be on the second and on every subsequent conviction be punishable with imprisonment for a term which shall not less than two years but which may extend to seven years with fine.

Under Section 45A - Whoever contravenes any of the provisions of this act or fails to comply with any order or direction given under this act for which no penalty has been elsewhere provided in this Act, shall be punishable with imprisonment which may extend to three months or with fine which may extend to ten thousand rupees or with both.

As mentioned earlier, the objective of the Act is to prevent and control of water pollution and to maintain or restore wholesome of water. Central and State Governments have constituted Boards for the Act. The Boards composition, terms and conditions of services of members are defined in Secs. 3-12. In some States air and water boards are joint boards. The Boards advises the government on any matter concerning the prevention and control of water pollution. It coordinates the activities and provides technical assistance and guidance. It runs national and state programmes through a mass media. It is collecting, compiling and publishing technical and statistical data, lay down the standard of different constituents of water, management of sewage and trade effluents and giving direction to any pollution units, industry, or person to stop such activity.

As per the Act, the Government have power to restrict any unit, and to take samples of effluents and to get them analysed in Central or State laboratories. Whoever fails to comply with any provision o this Act is punishable with the imprisonment or with fine or with both. Second or third time breaking of the law is further punishable. Under the provision of this Act Central Pollution Control Board was established to fulfil its object.

2. The Water(Prevention and Control of Pollution)Cess Act,1977

Parliament adopted the Water (Prevention and Control of Pollution) Cess Act, 1977 to provide funds for the Central & State Pollution Control Boards. The Act empowers the Central Government to impose a Cess on water consumed by industries listed in Schedule-I of the Act.

The industries as specified Schedule-I in and local authorities are required to pay the water Cess as per the quarterly of water Schedule-I.

Industries specified in schedule I are:

(a) Industrial cooling, spraying in mine pits, or boiler feed;
(b) Domestic purposes;
(c) Processing which results in water pollution by biodegradable water pollutants; or
(d) Processing which results in water pollution by water pollutants which are not easily biodegradable or are toxic.

The Act also provides for a Second Schedule.

The relevant provisions of the Act are:

Under Section 3: The Cess shall be calculated at such rate as may be specified by the Government. The rate notified/specified by the Government indicates two rates for Cess calculation - lower one for industries complying with Section 25 of Water Act, 1974 and standards of effluent as prescribed under EPA, 1986 and higher one for those failing to comply with the above mentioned conditions.

Under Section 4 : For the purpose of measuring and recording the quantity of water consumed, every person carrying on any specified industry and every local authority shall affix meters of such standards and at such places as may be prescribed.

Under Section 7 :Where any person or local authority, liable to pay the Cess under this act, installs any plant for the treatment of sewage or trade effluents, such person or local authority shall be entitled to a rebate of 25% of the Cess payable by such person or local authority, provided that the person/local authority is not contravening section prescribed 25 of the Water Act 1974 and effluent standards prescribed under EPA, 1986 and is not consuming water in excess of the maximum quantity as may be prescribed by the government for any specified industry or local authority.

Under Section 9: Any officer or authority of the State govt. specially empowered in this behalf can enter any premises at any reasonable time for the purpose of carrying out his duties under this Act.

Under Section 10 : If any person carrying on any specified industry or local authority fails to pay any amount of Cess payable under Section 3 within the date specified in the order of assessment made such person or local authority is liable to pay interest on the amount to be paid as laid down.

Under Section 13 : Any person or local authority aggrieved by an order of assessment made under Section 6 or by an order imposing any penalty made under

Section 11 may within such time as may be prescribed, appear to such authority in such form and in such manner as may be prescribed.

3. The Air (Prevention and Control of Pollution) Act, 1981

The Air (Prevention & Control of Pollution) Act was enacted by the Parliament in 1981 with an objective to prevent, control & abatement of air pollution. Under Section 19 of this act the whole of National Capital Territory of Delhi has been declared as air pollution control area by the Central Government. Under this section the government approved fuels to be used in the air pollution control area.

The preamble to the Act states, "An Act to provide for the prevention, control and abatement of air pollution, for the establishment, with a view to carrying out the aforesaid purposes, of Boards, for conferring on and assigning to such Boards powers and functions relating thereto and for matters connected therewith.

Whereas decisions were taken at the United Nations Conference on the Human Environment held in Stockholm in June, 1972, in which India participated, to take appropriate steps for the preservation of the natural resources of the earth which, among other things, include the preservation of the quality of air and control of air pollution; and whereas it is considered necessary to implement the decisions aforesaid in so far as they relate to the preservation of the quality of air and control of air pollution".

The following are the important provisions of the Air (Prevention & Control of Pollution) Act:

Under Section 21(1): Person establishes or operates any industrial unit in National Capital Territory of Delhi without obtaining prior consent of the DPCC.

The consent application will be disposed off within 4 months of receipt of the consent application. However, DPCC may either grant consent or reject the application within 4 months for reasons to be recorded in writing. It may also revoke previous, consent to the industry before expiry of the same after giving a reasonable opportunity of being heard.

Any consent requires the compliance with the following conditions:-
i) Control equipment of such specification as the State Board may approve.
ii) Control equipment referred above shall be kept at all times in good running condition.
iii) Chimney, wherever necessary, of such specifications as state boards may approve.
iv) Any other such conditions as the state board may specify.

Under Section 22 : No person operating any industrial plant, in any air pollution control area shall discharge or cause or permit to be discharged the emission of any air pollution in excess of the standards laid down by the state board.

Under Section 22(A) : State Board can also approach the court to stop any person from doing air pollution.

Under Section 24(i), 26(i) : DPCC office have powers to inspect any premises in performance of their duties, take samples, examine records, documents etc. or performing any other duty entrusted to him by the board. Every person operating any equipment is bound to provide all assistance to the person who is inspecting. When samples are taken, officials can collect the samples after informing the person of the industry. Any analysis of the samples done in the air lab can be produced as evidence in a court.

Under Section 31 : Any person aggrieved by an order made by the state board under this act may, within 30 days from the date on which order is communication to him, prefer an appeal to the authorized authority who in the case of Delhi is the Joint Secretary, Ministry of Environment & Forest.

Under Section 31(A) : The state board can give directions to any person or office or authority in writing and such person or officer or authority is bound to comply with such directions which includes:

i) The closure, prohibition or regulation of any industry, operation or process or
ii) Stoppage or regulation of electricity, water or any other services.

Under Section 37 : Any person failing to comply with the provisions of Section 21 or Section 22 or directions issued under Section 31(A) can be imprisoned from 1-1/2 years to 6 years, with fine or with a fine upto Rs.5000/- per day.

If violation continues beyond one year imprisonment can be increased upto 7 years with fine.

Under Section 39 : Whoever contravenes any of the provisions of this Act or any order or directions issued thereunder, for which no penalty has been elsewhere provided in this act, shall be punishable with imprisonment for a term which may extend to three months or with fine which may extend to ten thousand rupees or with both, and in case of continuing contravention with an additional fine which may extend to Rs.5000/- for every day during which such contravention continues after conviction for the first such contravention.

4. The Environment (Protection) Act, 1986: (29 of 1986)

In the wake of Bhopal tragedy, the Government of India enacted the Environment (Protection) Act, 1986 (EPA) under article 253 of the constitution. The purpose of the Act is to act as an "umbrella" legislation designed to provide a frame work for Central government co-ordination of the activities of various central and state authorities established under previous laws, such as Water Act & Air Act.

The potential scope of the Act is broad, with "environment" defined to include water, air and land and the inter-relationships which exist among water, air and land, and human beings and other living creatures, plants, micro-organisms and property.

However the Delhi Pollution Control Committee has been vested with the powers under the provisions under Section 5 the Central Government may, in exercise of its powers and performance of its function under this act, issue directions in writing to any person, officer or any authority and such person, officer or authority shall be bound to comply with such directions which includes (a) the closure, prohibition or regulation of any industry, operation or process; or (b) stoppage or regulation of the supply of electricity or water or any other service (The Central Government has delegated the powers

The Environment Protection Act, 1986 provides for the Prevention, Control and Abatement of Environmental Pollution. The provisions of the Act provide as follows:

- No person carrying on any industry, operation or process shall discharge or emit or permit to be discharged or emitted any environmental pollutant in excess of such standards as may be prescribed.
- No person shall handle or cause to be handled any hazardous substance except in accordance with such procedure and after complying with such safe guards as may be prescribed.
- Where the discharge of any environmental pollutant in excess of the prescribed standards occurs or is apprehended to occur due to any accident or other unforeseen act or event, the person responsible for such discharge and the person in charge of the place at which the discharge occurs shall be bound to prevent or mitigate the environmental pollution and shall also

(a) intimate the fact of such occurrence or apprehension of such occurrence; and

(b) be bound, if called upon, to render all assistance.

- On receipt of such information, the authorities or agencies shall cause such remedial measures to be taken as are necessary to prevent or mitigate the environmental pollution.

The expenses incurred by any authority or agency may be recovered from the person concerned as arrears of land revenue or of public demand.

➢ Noise Pollution (Regulation and Control) Rules, 2000

Noise is measured in decibel (dB). A whisper in ear is about 30 dB. The normal talk is 60 dB. Research shows that noise above 90 dB can cause loss of hearing and irreversible change in the nervous system. World Health Organization has fixed 45 dB as the safe standard and noise level upto 68 dB is considered tolerable.

Noise is a disturbance to the human environment that is escalating at such a high rate that has become a major threat to the quality of human lives. In the past few decades, noise in all areas, especially in urban areas, have been increasing rapidly. There are numerous effects on the human environment due to the increase in noise pollution.

Governments up until the 1970s viewed noise as a "nuisance" rather than an environmental problem. In the United States there are federal standards for highway and aircraft noise; states and local governments typically have very specific statutes on building codes, urban planning and roadway development. In Canada and the Europian Union there are few national, provincial, or state laws that protect against noise.

In India, to control the increasing ambient noise level in public places from various sources, *inter alia*, industrial activity, construction activity, generator sets, loud speakers, public address system, music systems, vehicular horns, and other mechanical devices, Noise Pollution (Regulation and Control) Rules, 2000 has been enacted by the Central legislature in exercise of its powers conferred under the Environment (Protection) Act, 1986.

4. Hazardous Wastes and their Disposal/Toxics

4.1. Hazardous Waste Management

The increasing use of chemicals in all sectors of society (including the home) has resulted in many residues that have hazardous properties.

During the past decade, the country has become increasingly aware of the seriousness of one of the major consequences of development, that is, the quantity and diversity of hazardous wastes generated by its industrial activities. Such wastes are usually a by-product of industrial operations which involve heavy metals such as arsenic, cadmium, chromium, lead, mercury, etc; processes which utilise different categories of oil and petrochemicals; products such as PVC and plastics; waste products from photocopiers; chemicals such as PCBs; and finally, by-products such as dioxins and furans which are now recognised as extremely toxic substances, affecting all forms of life. In fact, depending upon their characteristics, nature, and concentration of contaminants, some of these wastes are extremely toxic and hazardous.

The impact of heavy metals on human health is well documented in the scientific literature. Children under six years, for example, are most susceptible to lead, and adverse effects include reduction in I.Q., shortened attention span, hyperactivity, aggressive behaviour and other learning and behavioural problems. Exposure to high concentrations can lead to mental retardation, coma, convulsions and death.

Mercury and tin can get converted into organic forms like methyl mercury and methyl tin which become more injurious to health and environment than the parent compounds. Mercury poisoning can cause severe brain damage. Well documented incidence of mercury poisoning is available from Japan in the form of Minamata Disease, a severe and sometimes lethal neurological disorder. Hexavalent chromium in high doses during industrial exposures has been implicated as a cause of digestive tract cancers, cutaneous and nasal mucous membrane ulcers and dermatitis. Certain chromate salts, e.g. calcium chromate, are carcinogenic, at least when inhaled: lung cancer has been reported in workers employed in chromate industries. The toxic effects of cadmium have been documented in Japan (itai-itai disease).

Waste oil is another potent pollutant. When it is dumped in the open environment, into sewers or in landfills, it is capable of migrating into the soil and underground aquifers. It is said that one gallon of used oil can contaminate one million gallons of water, rendering it un-potable. Marine species can be adversely affected if exposed to oil concentrations as low as 1 part per million. Since waste oil contains various hazardous contaminants, the burning of such oil increases air pollution as

toxic gases are vented to the atmosphere, affecting not just human beings but plants and birds as well.

As far as heavy metals are concerned, the problem is compounded by the fact that although they are essential for economic development, they are available in small quantities or (in some countries) not at all. Because extracting and processing them from ores results in significant environmental damage and high energy costs, the global economy has wisely moved in the direction of recovering such metals from industrial wastes to the extent possible. Close to 70% of U.S. iron and steel and 90% of its aluminium, for example, is today recycled from scrap. This is also true of zinc, lead, etc. Recovery or reclamation of metal is a decidedly friendlier option, environmentally speaking, than extraction from ores, and reflects a policy committed to conservation of resources. So does the re-refining of used oil. But such recovery/reclamation has to be carried out with appropriate care.

The difficulty is that recycling of hazardous wastes itself generates hazardous wastes that are often more toxic in concentration than the material recycled. Such wastes, left unattended or carelessly disposed of, have a seriously detrimental impact on public health and the natural environment, including wildlife.

Concern over the health and environmental impacts of hazardous wastes has been expressed worldwide. Adverse effects on human health have been reported from the landfill sites of "Love Canal", Niagra Falls, NY, at Hardeman County near Memphis TN, and Lipari Landfill, Mantua town, Gloucester County, New Jersey, USA, in the seventies where solid/liquid wastes were dumped 10 to 20 years earlier. Workers engaged in collecting, processing and disposal of the hazardous wastes are also at risk. Since hazardous wastes can have long-term consequences on the environment and human health, they must be carefully handled and properly regulated.

The problems associated with hazardous wastes start at the conceptual level itself. So far, there is no uniformly accepted international definition for what constitutes hazardous wastes. Different substances are hazardous at different concentrations, at different time scales.

The Basel Convention on Transboundary Movement of Hazardous Wastes and their disposal defines wastes in Article 2 as follows:

"Wastes" are substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law.

The Convention defines hazardous wastes in Article 1.1 as follows:

(i) Wastes that belong to any category contained in Annex I, unless they do not possess any of the characteristics contained in Annex III; and,

(ii) Wastes that are not covered under paragraph (i) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit.

It will be seen from the foregoing that the Basel Convention does not provide a conceptual definition of hazardous wastes.

In India, the **Hazardous Wastes Rules, 1989**, was notified on July 28, 1989 and published in the Gazette of India, Extraordinary, Part II, 3(ii) on the same day. It was subsequently amended vide S.O. 116(E) dated 5-2-90, G.S.R.380(E) dated 31-3-92, S.O.625(E) dated 3-9-96, S.O.24(E) dated 6-1-2000 and S.O.593(E), dated 20-5-2003.

The Rule defines 18 categories of wastes, when handled above a certain quantity, as hazardous. These are listed in the Schedule to the Rules.

In the HW Rules, 1989, as amended in 2000, hazardous wastes are defined as follows:

(i) Waste substances which are generated in the processes indicated in column 2 of Schedule 1 and consist wholly or partially of the waste substances referred to in column 3 of the same Schedule. (Schedule 1 describes 46 processes and 136 waste streams as generating hazardous waste.)

(ii) Waste substances which consist wholly or partially of substances indicated in column-2 of Schedule-2, unless the concentration of the substances is less than the limit indicated in the same Schedule; and,

(iii) Waste substances indicated in Part-A, list-"A" and "B" of Schedule-3 applicable only to rule 12, 13 and 14 unless they do not possess any of the hazardous characteristics in Part B of the same Schedule.

In order to classify any waste as hazardous, it is usually subject to evaluations based on its attributes such as nature, composition and inherent characteristics. Thus, parameters such as flammability, ignitability, toxicity, corrosivity, reactivity, infectiousness, radioactivity, etc. have been proposed and used to designate specific wastes as hazardous. Based on such criteria, various international organizations have defined hazardous waste in different ways.

After careful consideration, the hazardous wastes can be defined as:

Any substance, whether in solid, liquid or gaseous form, which has no foreseeable use and which by reasons of any physical, chemical, reactive, toxic, flammable, explosive, corrosive, radioactive or infectious characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or environment, and should be considered as such when generated, handled, stored, transported, treated and disposed of. This definition includes any product that releases hazardous substance at the end of its life, if indiscriminately disposed of.

- **Status Report on Management of Hazardous Waste in India[2]**

1. Preamble

India is the second most populous country, which has about 16% of the world population and 25% of the land area. Rapid industrialization last few decades have led to the depletion of pollution of precious natural resources in India depletes and pollutes resources continuously. Further the rapid industrial developments have, also, led to the generation of huge quantities of hazardous wastes, which have further aggravated the environmental problems in the country by depleting and polluting natural resources. Therefore, rational and sustainable utilization of natural resources and its protection from toxic releases is vital for sustainable socio-economic development.

Hazardous waste management is a new concept for most of the Asian countries including India. The lack of technical and financial resources and the regulatory control for the management of hazardous wastes in the past had led to the unscientific disposal of hazardous wastes inIndia, which posed serious risks to human, animal and plant life.

2. Regulatory Frame Work

India is the first country that has made constitutional provisions for protection and improvement of the environment. In the Directive Principles of State Policy of the Constitution, Article 48-A of Chapter IV enjoins the state to make an endeavor for protection and improvement of the environment and for safeguarding the forest and wild life of the Country. In Article 51 A (g) of the Constitution, one of the fundamental duties of every citizen of India is to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures.

In order to manage hazardous waste (HW), mainly solids, semi-solid and other Industrial wastes which are not covered by the Water & Air Acts, and also to

[2] Source: http://www.envis.neeri.res.in/management.php, as visited on April 21, 2008.

enable the authorities to control handling, treatment, transport and disposal of waste in an environmentally sound manner, Ministry of Environment & Forests (MoEF). Government of India notified the Hazardous Waste (Management & Handling) Rules (HWM Rules) on July 28, 1989 under the provisions of the Environment (Protection) Act, 1986 and was further amended in the year 2000 & 2003. These amendments enable to identify hazardous wastes by means of industrial processes and waste streams in Schedule I and also by way of concentrations of specified constituents of the hazardous waste in Schedule II. Categories of wastes banned for export and import have also been defined (Schedule-8) The procedure for registration of the recyclers /re-processors with environmentally sound facilities for processing waste categories such as used lead acid batteries, non-ferrous metal and used oil as contained in schedule-4 and schedule-5 respectively has also been laid down.

Further, separate Rules have also been notified in continuation of the above Rules for bio-medical wastes as well as used lead acid batteries.

3. The Basel Convention on hazardous wastes

India is a Party to the Basel Convention on transboundary movement of hazardous wastes. The basic objectives of the Basel Convention are for the control and reduction of transboundary movements of hazardous and other wastes subject to the Convention, prevention and minimization of their generation, environmentally sound management of such wastes and for active promotion of the transfer and use of cleaner technologies.

As a party to the Convention, India is obliged to regulate and minimize the import of hazardous waste or other wastes for disposal or re-cycling and also to prohibit export of waste to parties, which have prohibited the import of such wastes. As a party India is also required to minimize generation of hazardous waste in the country taking into account social, technological and economic aspects. Further, hazardous waste generated in the country is also required to be managed in an environmentally sound manner. India, as a party, can prevent the import of hazardous waste or other waste if it has reason to believe that the waste in question will not be managed in an environmentally sound manner.

4. Present Hazardous Waste Generation Scenario

The hazardous waste generated in the country per annum is estimated to be around 4.4 million tones (Table 1) while as per the estimates of Organization for Economic Cooperation and Development(OECD) derived from correlating hazardous waste generation and economic activities, nearly five million tones of hazardous waste are being produced in the country annually. This estimate of

around 4.4 million MTA is based on the 18 categories of wastes which appeared in the HWM Rules first published in 1989.Out of this, 38.3% is recyclable, 4.3% is incinerable and the remaining 57.4% is disposable in secured landfills. Twelve States of the country (Maharashtra, Gujarat, Tamil Nadu, Orissa, Madhya Pradesh, Assam, Uttar Pradesh, West Bengal, Kerala, Andhra Pradesh, Karnataka and Rajasthan) account for 97% of total hazardous waste generation. The top four waste generating states are Maharashtra,Gujarat, Andhra Pradesh and Tamil Nadu . On the other hand, states such as Himachal Pradesh, Jammu & Kashmir, all the North Eastern States excepting Assam generate less than 20,000 MT per annum. Given the wide variations in quantity and nature of waste generated across states and union territories (UTs) and also considering the wide variations in climatic as well as hydro-geological conditions in different regions of the country, the approach to waste management has to be essentially state-specific.

Consequent upon amendments made in the year 2000 and subsequently in 2003, the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) are in the process of re-inventorising hazardous waste generated. The current exercise has brought to light the serious short-comings in the earlier inventorisation.

As a result, the total quantum of waste generated as well as its composition in terms of landfillable, incinerable etc. would undergo substantial changes. Nevertheless, the geographical distribution of waste generated and its distribution amongst the states is unlikely to undergo major changes.

While it is well recognized that inventorisation has to be reviewed and updated periodically to account for growing industrialization, it is necessary to prepare a reliable inventory as this forms the basis for formulating a suitable hazardous waste management strategy & developing infrastructure (treatment/disposal facilities) for their management. While field verification supplemented by stoichiometric assessments would be the ideal way forward, reasonably reliable estimates can be made based on product wise waste streams generated and quantities thereof. In India, there are over 13,000 industrial units located in 340 districts, out of which nearly all units have been granted authorization for multiple disposal practices encompassing incineration, storage, land disposal and other disposal (mostly recycle and reuse)options.

Small and medium sized enterprises (SMEs), however, are the major hazardous waste generators.

Table 1

State-wise status of number of units generating hazardous waste, and quantities generated in wastes types (recyclable, incinerable and disposable).

S. N.	State	No. of Districts		No. of Units Generating Wastes		Quantity of Waste Generated (Waste Type) [in TPA]			
		Total	H.W. Units	Autho-rised	Total	Recycl-able	Inciner-able	Disposal	Total
1	Andhra Pradesh	23	22	478	501	61820	5425	43853	111098
2	Assam	23	8	18	18	-	-	166008	166008
3	Bihar	55	12	31	42	2151	75	24351	26578
4	Chandigarh	1	1	37	47	-	-	305	305
5	Delhi	9	9	-	403	-	-	-	1000
6	Goa	2	2	25	25	873	2000	5869	8742
7	Gujarat	24	24	2984	2984	235840	34790	159400	430030
8	Haryana	17	15	42	309	-	-	31046	32559
9	Himachal Pradesh	12	6	71	116	-	63	2096	2159
10	Karnataka	27	25	413	454	47330	3328	52585	103243
11	Kerala	14	11	65	133	93912	272	60538	154722
12	Maharashtra	33	33	3953	3953	847436	5012	1155398	2007846
13	Madhya Pradesh	61	38	183	183	89593	1309	107767	198669
14	Orissa	30	17	78	163	2841	-	338303	341144
15	J & K	14	5	-	57	-	-	-	1221
16	Pondicherry	1	1	15	15	8730	120	43	8893
17	Punjab	17	15	619	700	9348	1128	12233	22745
18	Rajasthan	32	27	90	344	52578	6747	95000	140610
19	Tamil Nadu	29	29	1088	1100	193507	11564	196002	401073
20	Uttar Pradesh	83	65	768	1036	36819	61395	47572	145786
21	West Bengal	17	9	234	440	45233	50894	33699	129826
	TOTAL	524	373	11138	13011				4434257

(Source: Report of the High Power Committee on Management of Hazardous wastes, 1999)

The amount of hazardous waste generated in this country is quite small in comparison to that of the USA, where as much as 275 million tones of hazardous waste was generated annually. However, considering the fragile ecosystem that India has (The State of India's Environment, Part I, National Overview, The Citizens Fifth Report, Centre for Science & Environment, 1999), even this low quantum of hazardous wastes (around 4.4 million MTA) can cause considerable damage to natural resources if untreated before releases. India's fragile ecosystem could be seen from the following:

1. Air pollution in Indian cities is highest amongst the world

2. Over seventy percent of the country's surface water sources are polluted and, in large stretches of major rivers, water is not even fit for bathing
3. India has among the lowest per capita availability of forests in the world, which is 0.11 ha as compared to 0.50 ha in Thailand and 0.8 ha in China

The security of Indian fragile ecosystem, therefore, warrants sustainable consumption of natural resources and protection from environmental degradation.

5.0 Significance of SMEs in Industrial Output and Hazardous Waste Generation

Nearly fifty percent of the total industrial output in India is contributed by the SMEs. They also account for 60 to 65 percent of the total industrial pollution. However, most of these industries generate hazardous wastes, which find their way uncontrolled into the environment. According to the National Productivity Council, New Delhi (India), there are more than 3 million small and medium scale industries, which are spread throughout the country in the form of clusters/industrial estates. SMEs in India cannot afford to adopt and maintain adequate hazardous waste treatment and disposal technologies. In the absence of common disposal facilities, the waste generators have been accorded temporary permission to store waste in their premises except in areas serviced by common facilities that have come up in the States of Gujarat, Maharashtra and Andhra Pradesh(where storage period should not exceed for more than 90 days). The lack of common facilities has been a major factor in mushrooming of illegal dump sites since most of the units in the small and medium sector do not have adequate space within their premises to arrange for storage over several years. Therefore it is urgently required to make available common hazardous waste treatment and disposal facility in the areas in all the states where SMEs are operating.

There has been considerable delay in notifying sites for hazardous waste disposal. Of the 93 sites identified, only 30 have been notified. The State Governments should not only expedite notification of sites based on environmental impact assessment but play a catalytic role and persuade the industry associations to set up common facilities. Such common facilities would need to be planned based on reliable estimate of current waste generation and projections for the future. As this was not done, hazardous waste dumping was rampant in all the states which prompted in public interest litigations in High Courts and Supreme Court.

6. Supreme Court Interventions on non-implementation of HWM Rules

- Petition complaining the violation of fundamental rights

Though the HWM Rules came into existence in 1989, Rules they were never implemented in letter and spirit. The non-implementation resulted in

indiscriminate & illegal dumping of hazardous waste on land. Due to alarming situation created by illegal dumping of hazardous waste, its generation and serious and irreversible damage as a result thereof to the environment, flora and fauna, health of animals and human beings, a petitioner approached the Supreme Court under Article 32 complaining of violation of Article 14 and 21 of the Constitution of India. The petitioner has, *inter-alia*, relied upon the Basel Convention which was signed by India on15th March, 1990 and ratified on24th June, 1992. The ratification of Basel Convention by India shows the commitment of the country to solve the problem on the principles and basis stated in the said document.

The HWM Rules have been amended twice (2000 & 2003) during pendency of this petition, the latest amendment being on23rd May, 2003.

Considering the magnitude of the problem and the extent of hazardous waste generated, this Court issued notices to all the State Governments, Central Pollution Control Board and State Pollution Control Boards, Pollution Control Committees in the Union Territory, so as to identify the problem, and the extent of such waste, availability of the disposal sites and various other aspects relevant to minimizing the generation, its proper handling and disposal with a view to safeguard the environment.

- Orders of the Supreme Court prior to this petition

Prior to above-mention petition, the Supreme Court had issued the following orders which are listed in a chronological order:

By order dated 5th May, 1997, considering the decision that have been taken by 65 conference parties by consensus to ban all exports of hazardous wastes from Organization for Economic Co-operation and Development (OECD) to non-OECD countries immediately for disposal, the Court, *inter alia*, directed that no authorization/permission would be given by any authority for the import of hazardous waste items which have already been banned by the Central Government or by any order made by any Court or any other authority and no import would be made or permitted by any authority or any person, of any hazardous waste which is already banned under the Basel Convention or to be banned hereafter with effect from the dates specified therein. In view of the magnitude of the problem and its impact, the State Governments were directed to show cause why an order be not made directing closure of units utilizing hazardous waste where provision is not already made for requisite safe disposal sites. It was further ordered that cause be shown as to why immediate order be not made for closure of all unauthorized hazardous waste handling units.

In the order dated4th August, 1997 it was observed that all State Governments and Union Territories have not taken steps required under the applicable laws as well as earlier directions of the Court and have not placed before the Court all materials facts in spite of considerable time having been given. It has been further observed that all the authorities do not appear to appreciate the gravity of situation and need for prompt measures being taken to prevent serious adverse consequences. Even Central Government was not given full information by all the State Governments about the compliance of the Directions of this Court. Under these circumstances, it was observed that an appropriate Committee deserves to be constituted to ensure that needful is done to arrest further growth of the problem.

- Constitution of the High Power Committee

In this background, by order dated13th October, 1997, a High Power Committee (HPC) with Prof. MGK Menon as its Chairman was constituted to examine all matters in depth relating to hazardous waste and to give a report and recommendations at an early date. The fourteen Terms of Reference on which the High Powered Committee was required to give its report and recommendations were:

1. Whether and to what extent the hazardous wastes listed in Basel Convention have been banned by the Govt. and to examine which other hazardous wastes, other than listed in Basel Convention and Hazardous Wastes (Management and Handling) Rules, 1989, required banning.
2. To verify the present status of the units handling hazardous wastes imported for recycling or generating/recycling indigenous hazardous wastes on the basis of information provided by respective States/UTs and determine the status of implementation of Hazardous Wastes (Management and Handling) Rules, 1989 by various States/UTs and in the light of directions issued by theSupreme court.
3. What safeguards have been put in place to ensure that banned toxic/hazardous wastes are not allowed to be imported?
4. What are the changes required in the existing laws to regulate the functioning of units handling hazardous wastes and for protecting the people (including workers in the factory) from environmental hazards?
5. To assess the adequacy of the existing facilities for disposal of hazardous wastes in an environmentally sound manner and to make recommendations about the most suitable manner for disposal of hazardous wastes.
6. What is further required to be done to effectively prohibit, monitor and regulate the functioning of units handling hazardous wastes keeping in view the existing body of laws?

7. To make recommendations as to what should be the prerequisites for issuance of authorization/permission under Rule 5 and Rule 11 of the Hazardous Wastes (Management and Handling) Rules, 1989.
8. To identify the criteria for designation of areas for locating units handling hazardous wastes and waste disposal sites
9. To determine as to whether the authorization/permissions given by the State Boards for handling hazardous wastes are in accordance with Rule 5(4) and Rule 11 of hazardous waste Rules, 1989 and whether the decision of the State Pollution Control Boards (CPCBs) is based on any prescribed procedure or checklist.
10. To recommend a mechanism for publication for inventory at regular intervals giving area-wise information about the level and nature of hazardous wastes.
11. What should be the framework for reducing risks to environment and public health by stronger regulation and by promoting production methods and products which are ecologically friendly and thus reduce the production of toxics?
12. To consider any other related areas as the Committee may deem fit.
13. To examine the quantum and nature of hazardous waste stock lying at the docks/ports/Inland Container Depots(ICDs) and recommend a mechanism for its safe disposal or re-export to the original exporters
14. Decontamination of ships before they are exported toIndia for breaking."

The High Powered Committee comprised of experts from different disciplines and fields as would be apparent from the following :

1. Dr. Claude Alvares (scientific aspects of environmental damage and their impacts on society, legal aspects, Basel Convention, accountability to the public),
2. Dr. D.B. Boralkar (Chemistry, Pollution Control Board, Basel Convention, experience at CPBC and SPCB in enforcement of regulations);
3. Dr. Mrs. Indrani Chandresekharan (Chemistry, formulation of legislation, Basel Convention, experience at MoEF);
4. Dr. V.K. Iya (Chemistry and biomedical aspects, public involvement);
Shri Prem Chand (Non-ferrous metals and industry);
5. Dr. K.R. Ranganathan (Environmental studies, pollution control and functioning of Central Pollution Control Board (CPCB), accountability to the public);
6. Dr. A.K. Saxena (Environmental engineering, experience at National Productivity Council on hazardous waste management projects, particularly landfill technology);
7. Dr. P.K. Seth (Aspects of health and hazardous wastes; industrial toxicology);

8. Dr. Sudhir Singhal (Issues relating to oil);
Shri Paritosh Tyagi (Pollution control, institutional mechanisms and experience as a former Chairman, CPCB);
9. Dr. R.R. Khan, Director, Ministry of Environment and Forests & Member Secretary;
10. Dr. T.S.R. Prasad Rao, Director, Indian Institute of Petroleum, Dehra Dun (represented by Dr. Himmat Singh, Deputy Director).

The High Powered Committee submitted its Report on 20th April, 1998 . The Report had highlighted the industrial operations (solid, liquid, gaseous waste) which results in generation of the hazardous wastes including industries recycling hazardous waste and others as detailed in the scope of work. The HPC has concluded that the hazardous wastes situation in India is fairly grim

On the basis of the findings of the High Powered Committee, directions were issued in terms of the order dated 10th December, 1999.

- Order of the Supreme Court on October 14, 2003

On the basis of the recommendations of High Powered Committee, Supreme Court had passed an order on October 14, 2003.The legal principles on which the order is based are:

1. In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.
2. Environmental concerns have been placed at same pedestal as human rights concerns, both being traced to Article 21 of the Constitution of India. The rights to information and community participation for protection of environment and human health are also rights which flow from Article 21. The Government and authorities have thus to motivate the public participation. These well-shrined principles have been kept in view by the Court while examining and determining various aspect and facets of the problems in issue and the permissible remedies
3. Applicability of the precautionary principle and polluter pays principle, which are part of the concept of sustainable development, is to be ensured in all decision making processes

At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision making processes. States shall facilitate and encourage public awareness and participation by making information widely

available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided."

- Compliances

Highlights of the order include certain compliances on the part of Ministry of Environment and Forests (MOEF) and other ministries of the Central Government, Central and State Pollution Control Boards and Pollution Control Committees. The highlights and compliances are summarized as under:

a) Ministry of Environment and Forests(MOEF)

b) Inter-sectoral coordination

The MOEF is the focal point in the Government of India for all matters relating to the environment. The directions sought for by the petitioner to which MOEF has agreed shall be implemented in letter and spirit. The implementation wherever it is to be done by the MOEF, should be done forthwith and wherever it is required to be done by any other Ministry or Authority or Agency, the Nodal Ministry/MOEF shall ensure that it be so implemented.. As the Nodal Ministry, its first and foremost responsibility is to ensure coordination with all other Ministries that come into the picture. HPC discussions and studies show that there are major roles that have to be played by other Ministries as well.

For example:

1. All imported goods have to pass through Customs, which comes under the Ministry of Finance.
2. All matters relating to imports and exports are handled by the Ministry of Commerce under whom the Director General of Foreign Trade(DGFT) and Director General of Commercial Intelligence (DGCIS), both located in Calcutta, operate.
3. The need for employment generation, and consequently, matters relating to labour and industrial policy, industrial safety, occupations health hazards, compensation for disability/death are all matters dealt with by the Ministry of Labour.
4. A significant part of environmental pollution relates to water (both surface water and, particularly, groundwater); the Ministry of Water Resources is clearly involved.
5. Toxicological aspects of hazardous wastes like heavy metals, hormone disrupting chemicals and such other issues have to be dealt with by the Ministry of Health. Major research facility that comes under it is the Indian Council of Medical Research. Council of Scientific and Industrial Research

(CSIR) and the Department of Biotechnology, on the other hand, comes under the Ministry of Science and Technology.

6. Ministry of Petroleum and Natural Gas is involved in respect of the oil sector while the Ministries of Railways, Defence and Surface Transport deal with matters relating to large scale use of battery systems and their disposal.
7. Ministry of Law is to be interacted on matters that relate to legislation, and extensively with the State Government in relation to implementation of laws, rules and regulations, and guidelines at grassroots level.

In case of any doubt or dispute, it would be the responsibility of MOEF to satisfy this Court. Further, the Ministry shall also develop a mechanism to ensure that wherever its directions are not implemented, necessary action shall be taken against those who are responsible for it. If any Inter-Ministerial consultation is required, the lead is to be taken by MOEF to see that such consultation takes place and effective measures are taken. The HPC believes that the principal role and responsibilities of the MOEF should be to inculcate the necessary concern and sense of urgency, and to ensure coordination amongst the various Ministries and State Governments on issues as they come up. Such coordination can be at the level of meetings taken by the Minister/Secretary who chairs Secretary-level inter-Departmental meetings.

- Consideration for zero import of hazardous waste

The import of 29 items has been prohibited under Schedule-8 of the HW Rules as amended in May, 2003 while the Basel Convention has banned 76 items. The Ministry of Environment and Forests is required to examine the remaining items. It is implicit that if more items are banned, the corresponding Notification shall be issued by the Central Government under Section 11 of the Customs Act. Section 11 of the Customs Act, 1962 empowers the Central Government to prohibit either absolutely or subject to such conditions as may be specified in Notification the import and export of the goods if satisfied that it is necessary so to do for any of the purposes stated in sub-section (2). The Court directs that, in addition to 29 items, the MOEF will take into consideration what has been stated under heading 'A' (Imported Hazardous Waste which need to be included in the HWM Rules and ban of other Wastes) in the directions sought for by the petitioner on the basis of the recommendation of HPC. Further, the Ministry should also examine the question of banning used edible oil, cow dung, plastic scrap used PVC in any form, pet bottles etc. which, though not covered by Basel Convention, have hazardous impacts in terms of the HPC Report. According to the recommendations of HPC, these items also deserve to be banned. The Ministry shall also examine any other item which may have similar hazardous impact.

Another aspect that has been brought to the notice of the Court is the malpractice arising out of purported import of some permitted items. It appears that unscrupulous traders in the garb of importing used oil or furnace oil, in fact, import waste oil which is a banned item. They also Illegally import zinc wastes despite it being not permissible except in case where more than 65% of zinc can be recovered from the wastes. The Court is of the opinion that an enquiry should be conducted and appropriate action taken against concerned officer/officers of department responsible therein and, if necessary, a specific provision to that effect can be incorporated in Rules, wherever needed.

In regard to import of sludge oil under Marpol Convention the Court directed the Central Government to file an affidavit indicating in detail how the said oil is dealt with after import. It shall also be clarified in the affidavit whether such oil can, in the perception of the Central Government, be imported or it is only a technical import at the time of discharge of oil as suggested in the affidavit from MoEF dated 14th February, 2003.

- Disposal of illegally imported wastes

It has been brought to the notice of the Court that 15 importers, whose names and addresses are known, illegally imported waste oil in 133 containers in the garb of lubricating oil. The HPC in its report (pp. 170-171) had noticed the presence of the consignment of this waste oil. On direction of the Court, the laboratory tests undertaken have shown the same as hazardous waste oil. By order dated 5th May, 1997, the Court directed that no import would be made or permitted by any authority or any person of any hazardous waste which is already banned under the Basel Convention or to be banned hereafter with effect from the date specified therein. The importers are directed to show cause why the consignment in question shall not be ordered to be re-exported or destroyed at their cost and why the amount spent on analysis in the laboratory (Rs.6.35 Lacs) be not recovered from them and why they should not be directed to make payment of compensation of Polluter Pays Principles and other action taken against them. The Ministry would be empowered to have assistance from Police/District Magistrate/Metropolitan Magistrate for affective service of notice on the importers

1. Awareness Creation

Another important role that the MOEF has to play is to create awareness in society and other stakeholders at large, and to ensure educational training programs. The latter should certainly cover those directly concerned with implementation programs, e.g. environmental scientist, officials etc.

- Research and development initiatives

The MOEF also has a responsibility to ensure that research and development is conducted on scientific and technological aspects relating to this area. By and large, broad ranging and futuristic research has to be conducted with the support of the Central Government. It is unlikely that, in the present financial situation, any significant financial support will come from State Governments for this. The MOEF should also encourage industry and industrial associations to participate in research, particularly related to their specific areas of activity e.g. ETPs, CETPs, disposal facilities, clean and cleaner technologies, etc. There can also be a cess levied on those industries dealing with hazardous material, which should be specifically earmarked for the promotion of research and development.

6.5.1.6 Sustainable development initiatives

The MOEF has to work closely with the Planning Commission in the area of sustainable development. The need for development programs to increase production, productivity and to create employment is well recognized. GDP growth, industrialization, energy production, exports are all part of this. However, this cannot be at the cost of present and the future in terms of quality of life for society as a whole. Industrial policy relating to what industries should be encouraged and permitted, the role of SMEs, issues relating to industrial estates (including their governance, facilities to be provided etc.), land use patterns, urban development and zoning and such other matters are of a general nature which call for over all national policy. These cannot be dealt with by any individual Ministry Department with concerns only for its limited area of responsibility. MOEF has the responsibility to put forward the environmental implications implicit in various policy options. The MOEF willbe the focal point in the Government of India with regard to the international issues that arise in this area.

- Testing Facility Creation

The MOEF must be encouraged to make use of the vast technical capabilities that exist in the country. This may be with CPCB, suitably strengthened and assigned necessary responsibilities. In addition, the State Pollution Control Boards must be equipped and staffed properly, as also laboratories coming under various scientific agencies in the country and in the private sector. The MOEF must ensure that adequate facilities are available at the gateway points in the country (e.g. Ports, ICDs, Customs areas) to make the first level measurements to aid decision-making; as also certified laboratories (whether these are in the public or the private sector) which can provide reports that are scientifically valid and credible. Increasingly, exports will have to be environmentally compliant suitably labeled and certified.

- Location of Industrial Sites and Secured Landfills

The MoEF would consider the suggestion of HPC regarding development of National Policy for landfills sites. The suggestion is to the following effect:

In industrialized countries, the selection of sites for disposal facilities lies with the Government. In view of this, a national policy needs to be developed for locating such centralized/common TSDFs. The location of final disposal facilities should be based on the total quantity of hazardous waste generated in the individual State. For effective monitoring and an economically viable facility, it is important to locate a centralized facility within a distance of about 100 km. of the waste-generating units. Those States which generate less than 20,000 tones per year of hazardous waste may be permitted to have only temporary storage facilities and then transfer the waste to the final treatment and disposal facilities in the nearby State. It is not necessary and also not advisable to develop a facility in each and every district and/or State as land is a valuable natural resources.

- National Policy Document on Hazardous Waste

MoEF is directed to either itself or through the CPCB or any other agency draft a policy document on hazardous waste generation and its handling within the country. While examining this aspect, the following recommendations of the HPC would be kept in view:

The policy document should emphasize a commitment to the recycling of wastes and propose incentives for encouraging and supporting recycling. Industries must be given a clear message that they must show concrete and tangible results as far as prevention and reduction of wastes are concerned. If they do not, they should be made to pay a waste generation tax. The policy document should enunciate a doctrine of partnership between SPCBs, entrepreneur and other stakeholders like the community, which will be involved in monitoring, preventing and reducing hazardous waste generation. The policy should review further growth of non-ferrous metallic waste, waste oil and used lead acid battery recycling in the SSI sector.

MoEF and Health Ministry shall examine and respond to the recommendations of HPC which read MoEF and Ministry of Health are required are to compile an extensive data regarding exposure and epidemiological studies (with special reference to endocrine disruptors). Directions may also be issued for centres of excellence for environmental health science and for existing institutes engaged in related activities. A network of R&D institutions, medical colleges and universities may also be created. MoEF should encourage the industries and their associations to participate in research activities concerning environmental health. These studies should be made public so that people could know about toxicity and

its impact. A cess can be levied on the industries dealing with H.W., which should be specifically earmarked for promotion of R&D.

- Implementation of Plastic Waste Recycling Rules, Battery Waste Recycling Rules, Draft Used Oil (Management and Handling) Rules.

MOEF is directed to ensure compliance of "Recycled Plastics, Plastics Manufacture and Usage Rules, 1999 and the "Batteries Management and Handling Rules, 2001". The Ministry shall issue directions to all Public Sector Institutions not to openly auction their hazardous wastes but only to those who are registered units having Environmentally Sound Technologies (EST).

MOEF has constituted a Standing Committee on hazardous waste to advise the Ministry on issues pertaining to hazardous waste and other related areas. The Terms of Reference of the said Committee are as follows:

a)Characterization of hazardous wastes:

Identification of hazardous waste and characterization of the constituents that would render such wastes hazardous.

b)Prohibition/restriction of hazardous wastes:-

Identification and listing of hazardous wastes of prohibition/restriction for exports/imports and handling of these wastes.

c)Environmentally sound technologies:-

Identification and list of environmentally sound technologies for reprocessing and recycling of wastes, treatment and disposal; and MOEF should consider making a provision for bank guarantee being given by importer while seeking permission to import used oil, furnace oil and zinc wastes to be released only on the imported consignment being found to be in conformity with the declared item of import.

- Responsibilities of Ministries of Labour and Industry

The Court considered the suggestion of HPC under term of reference no. 4 relating to impact of hazardous waste on worker's health and directed the Ministry of Labour and Ministry of Industry to constitute a special committee to examine the matter and enumerate medical benefits which may be provided to the workers having regard to the occupational hazard as also keeping in view the question of health of the workers and the compensation which may have to be paid to them. The Court directed the Ministry of Labour and Ministry of Industry to constitute a

special committee to examine the matter and enumerate medical benefits which may be provided to the workers having regard to the occupational hazard as also keeping in view the question of health of the workers and the compensation which may have to be paid to them. The Committee while examining the recommendations, shall also keep in view the judgment of this Court in Consumer Education and Research Centre Vs. Union of India (1995 (3) SCC 42).

- Responsibilities of the Central Government

The Export and Import Policy (Exim Policy) issued from time to time, under the Foreign Trade (Development and Regulations) Act, 1992, inter alia, sets out the goods, import whereof is prohibited. We direct the Central Government that the said policy shall also correspond with the Hazardous Waste Rules, as amended from time to time, which means that if import of any item is prohibited under Hazardous Waste Rules, it shall be reflected in the prevalent Exim Policy.

For design and setting up of disposal facility as provided in Rule 8-A of HW (M&H) Rules, the criteria for Hazardous Waste Landfills published by CPCB in February, 2001 and the Manual for Design, Construction & Quality Control of Liners and Covers for Hazardous Waste Landfills published in December 2002 shall be followed and adhered to. 89 sites were identified out of which 30 were notified. Out of 30, 11 common landills are ready and operationl - one in Maharashtra, one in Andhra Pradesh and nine in Gujarat and that some of these landfills are in accordance with the Criteria and Manual aforesaid. The steps are being taken to expedite the completion of the remaining landfills. With this development in view, steps should be taken towards shifting of hazardous waste from wherever it is permissible to these landfills. The transport of hazardous waste would be in accordance with Rule 7 and the Guidelines issued by

Under Article 9 the HPC has recommended that in order to deter any transboundary movement of hazardous wastes or other wastes, i.e. illegal traffic, the national/domestic legislation shall be enacted/amended appropriately to prevent and punish illegal traffic. The Government is directed to examine the aspect and file a report.

- Responsibility of Central Pollution Control Board , SPCBs and PCCs

All SPCBs/PCCs are requiredto implement the directions that may be issued by the Ministry of Environment and Forests (MoEF).

The SPCBs are directed to produce a comprehensive report on illegal hazardous waste dump sites in their jurisdiction. Reports should be based on inspection,

assessment of the size of the dump site, age, whether the dump site is passive or active and whether precautions have been taken to prevent damage to the environment. The SPCBs will and PCCs also take samples of the groundwater in the vicinity of the dump site at different point and prepare a report on contamination of the groundwater, if any, and if so, to what extent.

The SPCBs and PCCs are directed to draw up a plan with financial estimates for immediate measures that may be required to stop environmental damage. A full scale rehabilitation should also be prepared, together with detailed estimate of costs. All these reports will be sent to the CPCB.

The CPCB shall issue guidelines to be followed by all concerned including SPCBs and PCCs and the operators of disposal sites for the proper functioning and upkeep of the said sites.

SPCBs and PCCs are directed to close forthwith those units which are functioning without valid authorization issued under the HWM Rules. The authorization for any unit should not be issued or renewed until the occupier undertakes that they have a programme in place to reduce the volume or quantity and toxicity of hazardous wastes to the degree determined by them to be economically practicable and that the proposed method of treatment, storage and disposal is the most practicable method currently available to them which minimizes the present and future threat to human health and environment.

Further, for effective implementation of the directions and to regulate the hazardous waste, it is necessary to strengthen the SPCBs and CPCB by providing them the requisite infrastructure and manpower so that they can issue the necessary guidelines to monitor the handling of hazardous wastes as suggested under Terms of Reference.

Particular care must be taken to prevent industries that use our Indian soil for processing of products and commodities of which production has been banned in other industrial countries. Units which propose to engage in this activity should not be permitted or licensed under any circumstances. The Rules should effectively prevent this. It is not enough to protect the country form the import of hazardous wastes; one should also look carefully at the import of those industries that will generate problematic hazardous wastes. The import of industries or product must be carefully screened in order to avoid dirty technologies and products, and the CPCB should do research on this so that the relocation of these industries from industrialized countries to India is effectively thwarted and technology transfer does not turn into hazardous transfer. The research done in this regard should be communicated by the CPCB to the SPCBs to form part of their decision-making process regarding absence of consents and authorizations. After

research, if necessary, CPCB shall take up the matter with the MOEF for requisite regulatory measure.

The HPC has observed that incineration is the most important treatment method for the destruction of all high calorific and highly toxic wastes. High temperature incineration at 1200 degree Celsius mineralizes (breaks down into basis non-toxic components) all kinds of organic matter. Destruction efficiencies of effectively 99.99% of toxic compounds with no generation of persistent organic pollutants (as products of incomplete combustion) should be prima criteria for design of such disposal systems. It has further observed that in addition, while designing the disposal system, relevant operating parameters for example temperature, residence time and turbulence should be considered. On inspection it was bound by HPC that barring a few, most of the incinerators are mere combustion chambers or industrial boilers where the maximum temperature is around 500oC, which is much too low. Often they are not equipped with adequate air pollution control devices and all types of wastes, including non-chlorinated with chlorinated hydrocarbons, being burnt. There seems to be an urgent need to develop the design criteria for incinerators to safeguard the environments so as to have proper and efficient working of incinerators close to the place of generation of hazardous wastes. The design criteria is required to be set by the CPCB which is now ready in the form of a draft report.

Inventory

The Courtdirects that toxic inventory prepared by SPCBs regarding the generation of hazardous wastes, after its verification by CPCB shall be filed tothis Court so that order for its conversion into National Toxic Inventory can be passed. The inventorization is in progress and the information is provided in the Action Taken Reports (ATRs) submitted by the SPCBs and PCCs to the CPCB.

Dump sites

The Toxic inventory with regard to hazardous waste dump sites in different States should be prepared by SPCBs and PCCs and after verification by CPCB, shall be filed in this Court so that the orders can be passed on the same being treated as Authenticated National Inventory on hazardous waste dump site.

Steps before clearance

Before clearance of any hazardous wastes imported to India the Port and Customs authorities would ensure that the consignment in question corresponds with the details of authenticated copy of Form 7 sent by the country of export. CPCB, for a period of two year, would be empowered to monitor the import of hazardous waste, which means, it would be empowered to undertake random check from time to time as a safeguard.

Testing

The testing procedure and criteria evolved or which may be evolved by CPCB shall be followed by the concerned laboratories.

- Compliances at a glance

In the order of October 14, 2003, the action shall be taken as per the schedule hereunder:

SR.No	Activity	Status	Agency
1	Proposed change in the HW Rules, 1989 as amended in 2003	Completed	MoEF
2	Review of list "A" Schedule VIII Items in Basel Convention other than 29 banned items already include in the HW Rules, 2003	Completed	MoEF
3	Review of waste materials like used edible oil, cow dung, plastic scrap, used PVC in any form, PET bottles etc. which are required to be banned.	Under progress	MoEF
4	Directions regarding compliance of Recycled Plastics, Manufacture and Usage Rules, 1999 and the Batteries (Management and Handling) Rules, 2001	Completed	MoEF
5	Directions to be issued regarding collection and transportation of used oil from different sources to be sold and recycled by registered refiners with requisite undertaking from refineries.	Issued	MoEF/CPCB
6	Closure directions to the units operating without any authorisation or in violation of conditions of operations issued under HW Rules,	Complied with	SPCBs/PCCs

	1989 as amended		
7	Directions to SPCBs/PCCs bringing to their notice the latest cleaner technology and requiring the said Boards/Committees to ensure compliance thereof by concerned units within the fixed time frame	Under progress	CPCB
8	Preparation and issuance of check-list and ensuring its compliance by SPCBs/PCCs	Completed	
9	Transportation of HWs (Preparation of Guidelines)	Completed	
10	Amendment in the Rules incorporating the principles of Article 9 of the BASEL Convention-Affidavit to be filed	Completed	
11	Upgradation of Laboratories at Port/Docks/ICDs (Gateways)	Under progress	MoEF/Nodal Ministries
12	Uniform Testing Procedure to be followed by the labs	Under progress	CPCB
13	Direction regarding display of relevant information on HW by concerned units	Under progress	SPCBs/PCCs
14	Awareness Programme in Media regarding HWs		MoEF/CPCB
15	Preparation of State/UT Inventories Re. HW generation by SPCBs/PCCs	Under progress	SPCBs/PCCs
16	Random check-up of the inventories by CPCB	Under progress	CPCB
17	Submission of the State/UT	Under	CPCB/SPCBs/PCCs

	Inventories regarding HW generation before this Hon'ble Court for preparation of National Inventory	progress	
18	Preparation of States/UT Inventories regarding Waste Dump Sites and rehabilitation Plan	Under progress	SPCBs/PCCs
19	Cross check by the CPCB and evaluation of the rehabilitation Plan	Under progress	CPCB
20	Submission of the said Inventory and Rehabilitation Plan before this Hon'ble Court	Under progress	CPCB/SPCBs/PCCs
21	Preparation and publication of National Inventory of HW generation and HW Dump Sites	Under progress	MoEF/CPCB
22	Fixing time frame for implementation of Rehabilitation Plan by SPCBs/PCCs	Under consideration	SPCBs/PCCs
23	National policy for landfill sites	Under progress	MoEF/CPCB
24	Guidelines for proper functioning and upkeep of disposal sites	Completed	CPCB
25	Guidelines of HW Incinerators	Completed	MoEF/CPCB
26	Institutional Reforms MoEF/CPCB/ SPCBs/PCCs	Under progress	MoEF/Nodal Ministries
27	National Policy Document on HW	Under progress	MoEF/CPCB
28	CPCB to do research and take up the matter with MoEF for requisite regulatory measures in regard to import of dirty technologies in	Under progress	MoEF/CPCB

	industries - step to be taken		
29	Various directions with regard to ship-breaking	Under progress	MoEF/State Maritime Boards/SPCBs

- Public Participation and Third Party Audit

It has been recommended that public participation should be secured in the management of environment pollution and hazardous waste to maximum possible extent. Suggestions given in these regards are as under:

Selected local residents should be appointed as wardens for environmental surveillance, particularly to take note of illegal dumping of hazardous wastes.

Access to public records with the environment protection authorities should be freely allowed to the public, as the right to a healthy environment has been defined as part of the Right to Life under Article 21 of the Constitution.

Relevant important information should be displayed on notice boards and newspapers and communicated through radio, television and the Internet. The HPC would like to see all industries, involved in hazardous chemicals and the generating hazardous wastes display on-line date outside the factory gate, on quantity and nature of hazardous chemicals being used in the plant, as well as water and air emissions and solids wastes generated within the factory premises. If such date is not made available, the unit should be asked to show cause or even be asked to close down.

Informers and "whistle-blowers" within industry, who provide information, should be protected and strict confidentiality about them maintained. Third-party audit of hazardous wastes, where the audit team includes members of the community, should be made a routine practice.

- Hazardous waste from ship breaking

Ship breaking activity grew into a full-fledged industry by 1979, when Govt. of India recognized it as a manufacturing industry. Now it has been recognized as a manufacturing process as per Central Excise and Sales Act, also. The ship braking activities are carried out at various coasts of the county; however, the main center lies on the West Coast at Alang, Gujarat. The geography of Alang makes it ideal for ship breaking. The beach is low and tides are as high as 10 meters. During low tide, the sea recedes by three km. The industry was set up in Alang in 1982, By 1990, over 100 ships started landing in Alang each year. In 1996-97, the industry scrapped a record 348 ships. The annual turnover of the industry stands at Rs

6,000 crore. The profit margins in the ship breaking industry are huge and big-time contractors make unbelievable profits.

On an average 200 ships per year are being cut at the Alang Ship Breaking Yard. The ship breaking industry is generating re-rollable steel scrap, directly used by the re-rolling industries at the down stream. At present, ship-breaking industry is producing around 2 million tones of re-rollable steel per annum. During the process of ship breaking, pollutants like oil, paint-chips, debris, rubber & plastics insulating materials, thermocole, glass wool, asbestos, etc. find their way to marine / terrestrial eco-system. Also some times the ships contain unidentified matters and toxic chemicals like paints / components, lead, heavy metals, poly-chlorinated byphenyls (PCB), asbestos, tin etc. Water pollutants, generated during ship breaking, result in change in water quality and marine eco-system especially in inter-tidal zone. The open burning of solid wastes including hazardous wastes, becomes a potential source of air pollution.

The accidental death rate reported at ship breaking yard is high. The reasons of death are gas leakage, explosions, inadequate safely measures during cutting, breaking and other operations.

The Court did not suggest discontinuing of ship breaking activity but noted that it deserves to be strictly and properly regulated. When the ship arrives at a port for breaking, the concerned authorities have to be vigilant about the hazardous waste which may be generated if appropriate timely action by various agencies, in particular, Maritime Board and the SPCB are not taken. The major ship breaking activity in India is at Alang in State of Gujarat and, therefore, Gujarat Maritime Board and Gujarat SPCB have to be alive to the consequences of the appropriate steps to be taken before the breaking activities start. According to the recommendation of HPC, the Inter Ministerial Committee comprising Ministry of Surface Transport, Ministry of Steel, Ministry of Labour and Ministry of Environment should be constituted with the involvement of Labour and Environment organizations and representatives of the ship breaking Industries

The Court has accepted the following recommendations of HPC:

1. Before a ship arrives at port, it should have proper consent from the concerned authority or the State Maritime Board, stating that it does not contain any hazardous waste or radioactive substances.
2. The ship should be properly decontaminated by the ship owner prior to the breaking. This should be ensured by the SPCBs.
3. Disposal of waste material, viz. oil, cotton, dead cargo of inorganic material like hydrated/solidified elements, thermocole pieces, glass wool, rubber, broken tiles, etc. should be done in a proper manner, utilizing technologies

that meet the criteria of an effective destruction efficiently of 99.9 per cent, with no generation of persistent organic pollutants, and complete containment of all gaseous, liquid and solid residues for analysis and, if needed, reprocessing. Such disposed of material should be kept at a specified place earmarked for this purpose. Special care must be taken in the handling of asbestos wastes, and total quantities of such waste should be made known to the concerned authorities. The Gujarat Pollution Control Board should authorize appropriate final disposal of asbestos waste.

4. The ship breaking industries should be given authorization under Rule 5 of the H.W. Rules, 2003, only if they have provisions for disposal of the waste in environmentally sound manner. All authorization should be renewed only if an industry has facilities for disposal of waste in environmentally sound manner.
5. The State Maritime Board should insist that all quantities of waste oil, sludge and other similar mineral oils and paints chips are carefully removed from the ship and taken immediately to areas outside the beach, for safe disposal.
6. There should be immediate ban of burning of any material whether hazardous or non-hazardous on the beach.
7. The concerned State Pollution Control Board(s) be directed to close all units which are not authorized under the HW Rules.

That the plots where no activities are being currently conducted should not be allowed to commence any fresh ship breaking activity unless they have necessary authorization.

The Gujarat PCBs should ensure continuous monitoring of ambient air and noise level as per the standards fixed. The Gujarat PCBs be further directed to install proper equipment and infrastructure for analysis to enable it to conduct first level inspection of hazardous material, radio-active substances (wherever applicable).

The Gujarat SPCB will ensure compliance of the new Gujarat Maritime Board (Prevention of Fire & Accidents for Safety & Welfare of Workers and Protection of the Environment during Ship breaking Activities) Regulations, 2000, and should submit a compliance report to the Court.

The Notification issued by GMB in 2001 on Gas Free for Hot Work, should be made mandatory and no ship should be given a beaching permission unless this certificates is shown. Any explosion irrespective of the possession of certification should be dealt sternly and the license of the plot holder should be cancelled and Explosives inspector should be prosecuted accordingly for giving false certificate.

A complete inventory of hazardous waste on board of ship should be made

mandatory for the ship owner. Breaking permission should not be granted without such an inventory. This inventory should also be submitted by the GMB to concerned SPCBs to ensure safe disposal of hazardous and toxics wastes.

Gujarat Maritime Board and Gujarat SPCB officers should visit sites at regular intervals so that the plot owners knows that these institutions are an Inter-Ministerial Committee comprising Ministry of Surface Transport, Ministry of Steel, Ministry of Labour and Ministry of Environment should be constituted with the involvement of labour and environment organizations and representatives of the ship breaking industry.

The SPCBs along with the State Maritime Board should prepare land fill sites and incinerators as per the CPCB guidelines and only after prior approval of the CPCB. This action should be taken in a time bound manner. The maximum time allowed should be one year.

At the international level, India should participate in international meetings on ship breaking at the level of the International Maritime Organisation and the Basel Convention's Technical Working Group with a clear mandate for the decontamination of ships of their hazardous substances such as asbestos, waste oil, gas and PCBs prior to exports to India for breaking. Participation should include from Central and State level.

That the above conditions also apply to other ship breaking activities in other Coastal States, if practiced.

- Constitution of the Supreme Court Monitoring Committee

It appears from the HPC Report that about 80% of country's hazardous waste is generated in the State of Maharashtra, Gujarat, Tamil Nadu and Andhra Pradesh. This may also show good industrial growth in those States. In order to ensure that the generation of hazardous waste is minimum and it is properly handled in every State including the aforesaid States, in particular, it is necessary to appoint a Monitoring Committee to oversee the compliance of law, directions of this Court and Rules and Regulations.

The Court, therefore, constituted a Monitoring Committee comprising of the following members as also Dr. Claude Alvares, NGO and Dr. D.B. Boralkar, now the Member Secretary of the Maharashtra Pollution Control Board. This Committee shall oversee that the direction of this Court are implemented timely. It would also oversee that the aspects to which the Ministry has agreed are implemented in letter and spirit and without any laxity or delay in the matter. It would be open to the Monitoring Committee to co-opt a representative of the State

Government or State Pollution Control Boards or any other person or authority as the Committee may deem fit and proper. The Monitoring Committee shall file quarterly reports in this Court.

The composition of the Committee is :

Dr. G. Thayagarajan, Senior Secretary, COSTED, Chennai	Chairman
Mr. V. Rajagopalan, Chairman, CPCB	Member
Director, NEERI, Nagpur	Member
Director, NML	Member
Director, IIP, Dehradun	Member
Director, NCT, Pune	Member
Dr. N.H. Hosabettu, Director, HSM Div., MOEF	Member-Secretary
Director, IICT	Co-opted Member

7. Priorities in Hazardous Waste Management

Ranking of options in Hazardous Wastes Management follows the widely accepted hierarchical preference for waste management in general. Accordingly, waste avoidance and minimisation ranks the highest followed by recycling and safe disposal of waste generated.

- Waste Avoidance and Waste Minimisation

Given the difficulties in handling of hazardous wastes and the serious adverse impacts that result from improper management of such wastes, waste avoidance and minimization gather added significance. Unlike other sectors of industrial activity, it is necessary to have a closer look at processes generating hazardous wastes rather than leave technological options entirely to the entrepreneur. Such an assessment of the avenues for waste avoidance/minimization would naturally be industry-specific and product-specific.

On priority, it would be necessary to identify industry sectors which continue to adopt out-dated and highly polluting technology generating significant quantities of hazardous wastes. For example the paper and pulp industry which continues

with elemental chlorine based bleaching whereas there has been a major shift the world over to elemental chlorine-free bleaching. Similarly, the conversion of mercury cell based caustic soda manufacturing to membrane cell process would need to be expedited. Economic incentives, wherever needed for switch-over to cleaner production processes, would need to be provided to offset additional financial burden and make such switch-over a financially attractive option.

The entire chemical industry would need to be studied through industry specific assessments on cleaner technology options leading to waste avoidance / minimisation and resource recovery. Within the chemical industry group, major segments such as pesticides and pesticide intermediates, dyes and dye intermediates as well as bulk drugs and intermediates would require special focus. In these industry categories, wherever laboratory scale demonstrations have been completed as in the case of H-acid manufacture wherein suitability of catalytic hydrogenation has been well established, pilot plants would need to be set up to enable speedier adoption by the industry. In cases wherein techno-economic feasibility of cleaner production process has been well established and already adopted by some units such as adoption of cyanide-free electroplating, a dialogue should be started forthwith with the concerned industry associations for switch-over within a specified time period.

In the petrochemicals, pesticides and dyes and dye intermediates sectors, product-wise opportunities available for recovery of resources such as solvents, other reagents and by-products as well as re-generation of spent catalysts have been well documented. This exercise needs to be followed up by setting up dedicated task forces under the guidance of concerned CSIR laboratories and such task forces could serve as an inter-face between industry associations and CSIR laboratories to carry the work forward for actual application in field conditions.

- Recycling of Hazardous Waste

Recycling of non-ferrous metallic wastes such as zinc dross, brass dross, used lead acid batteries, copper oxide mill scale and used lubricating oil offer attractive options for resource recovery in an environmentally sound and techno-economically feasible manner. Current gap between demand and supply of lead, zinc and copper as well as the projected widening of the gap due to rapid growth in demand arising from the automobiles sector etc. serve as added incentives for re-cycling. As compared to primary production of metals, re-cycling is energy efficient and environment friendly subject to a careful selection processing technology and disposal of wastes generated.

At present, there are about 200 recyclers of non-ferrous metallic wastes/waste oil who are registered under the HWM Rules. Registrations have been granted based

on their possessing facilities for environmentally sound re-processing and suitable facilities for disposal of wastes generated. However, but for a few exceptions, almost the entire recycling takes place in the small scale sector. As such, there are serious limitations on technology upgradation which would be necessary to ensure that re-processing is done as per guidelines evolved by the Basel Convention.

In order to promote technology upgradation, it would be necessary to make a distinction between re-processors with State-of-the-art facilities which meet the Basel Convention guidelines and those that do not. The current import regime would need to be re-examined to give access to imports of non-ferrous metallic wastes to only State-of-the-art facilities from a prospective date. In fact, such Units could also be given preferential access to wastes generated within the country. Need for other economic incentives would also need to be considered to offset additional burden arising from enhanced capital investment and recurring expenditure on pollution control and waste disposal.

While the traditional approach to pollution control in India has been to stipulate industry-specific standards and leave the choice of technology to the entrepreneur, a break from convention was made in the case of used oil re-processing and technology upgradation was legally mandated from a prospective date. Such an approach would need to be examined for its usefulness and relevance in re-cycling of non-ferrous metallic wastes as well.

Despite the registration scheme for recyclers, the menace of recycling in the unorganized sector with all its attendant environmental and health hazards still continues. This underscores the importance of channelisation of wastes generated. While the battery Rules, 2000 mandate return of used lead acid batteries, compliance remains unsatisfactory. It would be necessary to look into the causes thereof and devise suitable economic incentives such as advance recycling tax which is suitably structured to provide adequate incentive for the battery users to return used batteries to authorized dealers. Simultaneously, an organized drive would be necessary to break the nexus between scrap dealers, backyard smelters and those engaged in battery re-conditioning.

At present, there are no re-processing facilities in the country to recover toxic metals such as mercury from thermometers, tube-lights. and cadmium from batteries, etc. Considering the potential for serious health impacts posed by co-disposal of such hazardous wastes with municipal solid wastes, development of a system for channelisation of such wastes and development of re-processing facilities deserve to be accorded high priority.

- Safe disposal of Hazardous Waste Generated

The third and the last option is to dispose of the hazardous waste safely. Depending on the waste category, land disposal or incineration could be adopted. Design and operation of such facilities, either captive or common need to strictly adhere to the guidelines. Supervision of such facilities during construction stage is of paramount importance. Common facilities should invariably be equipped with laboratory facilities to verify waste categorisation.

- Setting up of Common Facilities

At present, there are 3 integrated Hazardous Waste Management facilities in the States of Andhra Pradesh and Maharashtra in addition to 11 common landfill facilities available in Gujarat. States are currently at various stages of planning their common facilities. Common facilities including integrated facilities have to be planned following the polluter-pays principle although at the initial stages a certain level of assistance from the State Governments could significantly accelerate the process of setting up of these facilities and also ensure their viability in the initial years which is vital. Currently, several State Governments have made available land at concessional rates for setting up of these facilities which are part of the state's industrial infra-structure on the lines of Common Effluent Treatment Plants. For economic viability of common facilities, waste assurance is undoubtedly the single most important factor. Considering the urgency to set up common facilities and also the imperative to make them viable given the dire consequences to human health and environment the absence of such facilities could lead to, setting up of common facilities calls for scientific planning backed by sound economic rationale. Transportation costs could account for a significant portion of total treatment costs particularly in the case of landfillable wastes.

An integrated waste management facility should be designed to handle at least 1 lakh tonne / annum of hazardous wastes; such a facility should comprise of a secured landfill, intractable waste stores, incinerator, reuse/ recycling facility, laboratory capable of comprehensive analysis, arrangement for transportation and handling of wastes including supporting infrastructure. Such a facility should be permitted one per State (until interstate movement of hazardous waste comes into place).

1. The integrated facility as indicated above should have a Zone of coverage of 200 kms radius from the facility.

2. This facility should be located close to the major waste generation area.

3. Beyond the Zone of coverage (where transport cost plays a major role), smaller

facilities (satellite facility) comprising only of a secured landfill including waste stabilization / solidification facility, laboratory capable of Finger Printing Analysis, Mechanized Transportation and Handling of Wastes and a transfer station should be established, where feasible.

4. These facilities should be linked with the integrated facility of the State for comprehensive analysis of wastes, storage of intractable wastes, incineration and such other services.

5. These transfer stations cum landfill facilities should be atleast 300 kms from each other and the integrated facility.

6. All liability for these facilities shall also rest with the integrated waste management facility.

7. After the first integrated facility reaches satisfactory level of capacity utilization (50% of estimated waste) further integrated facilities can be planned.

8. New bio-medical waste treatment facilities, both common and individual, should not be allowed within forty kms. of an integrated facility since bio-medical wastes can also be handled at the integrated facilities.

Interstate transportation of Hazardous Wastes

Interstate movement of hazardous wastes would be required when (a) landfillable waste generated by a State is less than the pre-determined level of say 20,000 MTA (b) for a company with units located in several states and wishing to incinerate wastes at one facility and (c) for incineration purposes when incinerable waste generation in a State is not adequate to support 3000 MTA of incineration. Facilities for landfilling / incineration should be set-up within one year.

In some of the States like Delhi, Kerala, Himachal Pradesh, Chandigarh and North East States etc., efforts for development of hazardous waste disposal facilities are still in progress. There are difficulties in identifying sites as the quantity of waste generation is low and is not viable for disposal by landfilling or availability of ground water table close to the surface of the ground or high annual rainfall or high transportation cost. Therefore, it is felt that in case of Delhi, Kerala, Himachal Pradesh, Chandigarh and North Eastern States etc., combined facility with neighboring state including inter-state movement is required due to various factors such as land availability and the amount of waste generated suitable for landfilling / incineration.

Based on mutual consultations between the State Boards including the system of

differential rates to be charged for wastes coming from other States, interstate movement of hazardous wastes for the interim period (say one year) may be allowed for the Units in States where common facilities are yet to be developed.

For proper tracking of HW disposal in an environmentally sound manner followed the manifest system, 5% of disposal charges may be made available to concerned SPCBs / PCCs where the wastes are proposed to be disposed by the occupier/operator of a facility satellite facility.

- Use of Cement Kilns for HW incineration

Incineration of high calorific value hazardous wastes in cement kilns is a safe alternative to conventional disposal in dedicated waste incinerators. Sludges from petrochemical, oil refinery and paint industries as well as spent solvent from pesticide industries are particularly suitable.

In the cement kilns, the high flame temperature of around 20000C and high material temperature of around 14000C and large residence time of around 4-5 seconds ensure complete combustion of all organic compounds. Acid gases formed during combustion are neutralised by the alkaline raw material. The non-combustible residue including heavy metals gets incorporated into clinker in an irreversible manner.

The spread of cement industry in India across the States makes this option particularly attractive in the Indian context. That about 250 cement works in Europe utilise about 3 million tons of hazardous wastes indicates the potential that this option holds for India given that in India we have over 200 cement kilns and the incinerable hazardous wastes generated is only about 0.2 MTs. Trial runs need to be taken up under close supervision to study suitability of this option under Indian conditions in all major HW generating States. A CPCB study reveals the potential of using combustible and high calorific value hazardous waste as fuel in cement kilns. For example, sectors like pesticides, paints, oil refineries, pharmaceuticals generate high calorific value hazardous waste that can be used as fuel in cement industry. Similar potential lies in using waste oil and used tyres. This goes to show that waste of one sector can be used as raw material in another.

Illegal Dumpsites and remediation

In the absence of common facilities, illegal and clandestine dumping of Hazardous Waste has been reported in many States. Even after waste disposal facilities have become operational in some States, the problem persists since illegal dumping helps avoid costs of transportation and disposal. To prevent the problem from growing out of proportions, surveillance, especially during night hours, both by

enforcement agencies as well as industry associations should be made effective.

Rehabilitation of dumpsites should be based on scientific assessment of contamination of soil and groundwater and projected future damage based on modelling. The strategy for intervention, whether the focus should be on excavation of waste at site to the nearest TSDF and measures to prevent further spread of contamination through containment measures would suffice or whether site remediation should be taken up and, if so, the approach therefore, would vary from site to site depending on nature of pollutants, future damage potential and remediation costs and benefits thereof. In any case, the 'Polluter Pays' Principle has to be basis for cost-sharing unless it becomes impossible to identify the culprits through finger printing of contaminants and tracing the wastes back to the producer.

In cases where it becomes impossible to track down the polluters, a dedicated fund needs to be created at the State level to which mandatory contributions from all producers of hazardous wastes could be prescribed.

For removal of HW wastes from premises of units to the nearest TSDF, the individual producers should also be levied a fine for indiscriminate disposal within premises in violation of conditions of authorisation for secured on-site storage for a temporary period.

The problem of hazardous wastes and chemicals lying in units which have been closed should also be tackled strictly based on the 'Polluter-Pays' Principle.

8. Custom & Laboratory Strengthening

Customs play an important role in regulating import of hazardous wastes into the country. Cases of illegal imports of hazardous wastes have clearly indicated the need to plug existing loopholes. Priority areas for action include training of customs staff engaged in inspection as well as sampling and also upgradation of customs labs.

Appraisers carrying out inspection of goods received and having discretion to pick up samples need to be trained to pick up representative samples to achieve the best results. In addition to sampling techniques, assessors should be made aware of current hazardous wastes regulations, documentation requirements etc. Equally important is the need to upgrade laboratory facilities at all major ports of entry. Difficulties faced recently by customs authorities in distinguishing between used oil and waste oil serves as a case in point to identify the gaps. Lack of laboratory facilities for analysis of trace organics such as PCBs could either result in holding up of supplies for long periods of time merely on grounds of suspicion or lead to

illegal imports of waste oil under the garb of used oil. As a first step, a through assessment of laboratory facilities available at all the ports, in particular, facilities available both in terms of equipment and trained man-power and equipment for analysis of all important heavy metals and trace organics, should be taken up and a time-bound plan prepared for their upgradation. Till such time all the ports are upgraded both in terms of equipment and training of laboratory personnel,, it would be necessary to consider channelisation of all hazardous wastes through selected ports well equipped to handle them and for this purpose, ports may be categorised suitably. As an interim measure, outsourcing of laboratory related work to laboratories recognised under the EP Act in respect of all relevant parameters may be considered.

Synchronising Customs categorisation of wastes with amendments in the Hazardous Wastes Rules should be made automatic so that the customs lists need not be amended every time there is a change in the lists of various waste categories in the HW Rules. Incidentally, this would also help in eliminating the time gap between amendments in the HW Rules and the Customs waste lists which causes avoidable confusion. Harmonisation of custom codes with the international system as amended from time to time should also be accorded high priority.

9. Disposal of date expired and banned pesticides

There are significant quantities of date expired pesticides lying in various States and concerned departments are looking for safe disposal. The options available are (i) to reprocess wherever possible by the industry who has supplied earlier; (ii) to appropriately incinerate either through dedicated incinerators of individual industries or through available with common integrated facilities. In order to deal with such hazardous wastes, interstate transportation should be permitted by the concerned State Governments and also disposal in a facility as per above said options available.

10 Conclusions

The industry driven economy of India's has resulted in hazardous waste problems, which are difficult to manage in an environmentally friendly manner. The non-enforcement of 'Polluter Pays' principle, continuation of import of hazardous wastes despite the ban, absence of proper infrastructure viz. centralized disposal facilities and lack of technical and financial resources have led to the unscientific disposal of hazardous wastes posing serious threat to human, animal and plant life. A High Power Committee (HPC) on hazardous waste management, constituted by the Hon'ble Supreme Court of India in 1997, made similar observation and conclude that the hazardous wastes situation in India is fairly grim. Thus, there is

an urgent need for formulating proper hazardous waste management strategies, implementation of hazardous wastes management regulations and establishment of proper hazardous waste treatment and disposal facilities (HWTDF) for controlling the unscientific disposal of hazardous wastes This is now being done in accordance with the order of the Supreme Cout which was issued on October 14, 2003 under the supervision ofthe Supreme Court Monitoring Committee.

4.2. Municipal Solid Waste Management

Municipal solid waste (MSW) is a waste type that includes predominantly household waste (domestic waste) with sometimes the addition of commercial wastes collected by a municipality within a given area. They are in either solid or semisolid form and generally exclude industrial hazardous wastes. The term *residual waste* relates to waste left from household sources containing materials that have not been separated out or sent for reprocessing.

Municipal Solid Wastes (Management & Handling) Rules, 2000 (MSW Rules) are applicable to every municipal authority responsible for collection, segregation, storage, transportation, processing and disposal of municipal sol

The Rule contains four Schedules, namely:

1. Schedule-I :Relates to implementation Schedule
2. Schedule-II :Specifications relating to collection, segregation, storage, transportation, processing and disposal of municipal solid waste (MSW).
3. Schedule-III : Specifications for landfilling indicating; site selection, facilities at the site, specifications for landfilling, Pollution prevention, water quality monitoring, ambient air quality monitoring, Plantation at landfill site, closure of landfill site and post care.
4. Schedule-IV : Indicate waste processing options including; standards for composting, treated leachates and incinerations.

4.3. Bio-Medical Waste Management

The hospitals and bio medical facilities meant to ensure better health have unfortunately become a potential health risk due to mismanagement of the infectious waste. Realizing this, Ministry of Environment and Forests, Govt. of India notified the rules, called Bio-Medical Waste (Management and Handling) Rules, 1998, which has come into force since July 27,1998.

Bio-medical waste from hospitals, nursing home and other health centers composed of variety of wastes like hypodermic needles, scalpels blades, surgical cottons, gloves bandages, clothes, discarded medicine, blood and body fluids, human tissues and organs, radio-active substances and chemicals etc. This area of waste management is grossly neglected.

The situation of bio medical waste management in entire north zone is pathetic. In Punjab a common facility has been developed to cater to the cities of Ludhiana,Jallandhur,Patiala and Amritsar. In Haryana clearance have been given for a common facilities, which however is yet to be developed. In H.P out of total 10 incinerators installed one each at Shimla and Paonta Sahib is also working as common incinerators for the hospitals in that region. In U.P. only 5 common facilities have been so far developed and few more are in process.

The common facilities at Ludhiana in Punjab and in Kanpur are comprehensive as stipulated in the Act but at other places common facilities are mainly having incinerators as treatment facility. Segregation is the most neglected aspect and progress on this part paint dismal picture.

The current scenario shows that there is lack of awareness amongst the hospital staff including doctors towards the segregation of infectious waste is one of the main reasons for mismanagement of Bio-medical waste in the hospital.

The segregation of waste in almost all hospitals is not satisfactory. Colour coding for various categories of waste is not followed. The storage of bio-medical waste is not in isolated area and proper hygiene is not maintained. Personal protective equipment and accessories are not provided. Most of the hospitals do not have proper waste treatment and disposal facilities. In the cities where common treatment facilities have come up, many medical establishments are yet to join the common facility. Mass awareness programme for management of bio-medical must be taken up.

4.4. E-Waste Management

The advance of science and technology has given us a whole new array of electrical and electronic products, and rendered many of them affordable to billions of people known as the "global consumer class" both in developed and developing countries. On the one hand, this advance has revolutionized the world with widely used cheap products; on the other hand it means that they become rapidly obsolete. The result is a tremendous and ever increasing quantity of electronics and electrical appliances being discarded, since it is often cheaper to

buy new than to repair or to upgrade a broken or obsolete product. This has given rise to a new environmental challenge: waste from electrical and electronic equipment or "e-waste".

The Organization for Economic Co-operation and Development has identified e-waste as one of the fastest growing waste streams. UNEP's expert advisory group meeting on the 10-year Framework on Sustainable Consumption and Production (The Marrakech Process) also identified e-waste as a priority waste stream.

E-waste is a generic term encompassing various forms of electronic and electrical equipment (EEE) which are old, end-of-life electronic appliances and which have ceased to be of any value to their owners. It can be defined as electronic equipments / products connect with power plug, batteries which have become obsolete due to: advancement in technology, changes in fashion, style and status nearing the end of their useful life.

E-waste encompasses ever growing range of obsolete electronic devices such as computers, servers, main frames, monitors, TVs & display devices, telecommunication devices such as cellular phones & pagers, calculators, audio and video devices, printers, scanners, copiers and fax machines besides refrigerators, air conditioners, washing machines, and microwave ovens, e-waste also covers recording devices such as DVDs, CDs, floppies, tapes, printing cartridges, military electronic waste, automobile catalytic converters, electronic components such as chips, processors, mother boards, printed circuit boards, industrial electronics such as sensors, alarms, sirens, security devices, automobile electronic devices.

It is well known that there are toxic substances in e-waste such as lead and cadmium in circuit boards; lead oxide and cadmium in monitor cathode ray tubes (CRTs); mercury in switches and flat screen monitors; cadmium in computer batteries; polychlorinated biphenyls (PCBs) in older capacitors and transformers and brominated flame retardants on printed circuit boards, plastic casings cables and polyvinyl chloride (PVC) cable insulation. However, e-waste can also be valuable since it also contains precious and strategic metals and other high-tech materials. Discarded equipment can also often be repaired, and its components can be refurbished and reused.

In some developing countries, the recycling and separation of electronic waste has become the main source of income for a growing number of people

In the absence of suitable techniques and protective measures, recycling e-waste can result in toxic emissions to the air, water and soil and pose a serious health and environmental hazard. While the largest generators of e-waste are industrialized

economies, the most vulnerable to the hazards of e-waste are informal recyclers in developing and emerging economies.

Indian Scenario : There is an estimate that the total obsolete computers originating from government offices, business houses, industries and household is of the order of 2 million nos. Manufactures and assemblers in a single calendar year, estimated to produce around 1200 tons of electronic scrap. It should be noted that obsolence rate of personal computers (PC) is one in every two years. The consumers finds it convenient to buy a new computer rather than upgrade the old one due to the changing configuration, technology and the attractive offers of the manufacturers. Due to the lack of governmental legislations on e-waste, standards for disposal, proper mechanism for handling these toxic hi-tech products, mostly end up in landfills or partly recycled in a unhygienic conditions and partly thrown into waste streams. Computer waste is generated from the individual households; the government, public and private sectors; computer retailers; manufacturers; foreign embassies; secondary markets of old PCs. Of these, the biggest source of PC scrap are foreign countries that export huge computer waste in the form of reusable components.

With extensively using computers and electronic equipments and people dumping old electronic goods for new ones, the amount of E-Waste generated has been steadily increasing.

Electronic waste or e-waste is one of the rapidly growing environmental problems of the world. In India, the electronic waste management assumes greater significance not only due to the generation of our own waste but also dumping of e-waste particularly computer waste from the developed countries. Regulations for management of E-Waste are contained in The Batteries (Management and Handling) Rules, 2001 – Notified in the official gazette on 16/5/2001 *vide* S.O.432 (E).