



Green Files

Newsletter on environment audit and sustainable development
issues

International Centre for Environment Audit and
Sustainable Development (iCED)



Green Files, a quarterly newsletter compiled by iCED Jaipur, is meant for circulation in IA&AD. This newsletter highlights issues on environment and sustainable development which can enable audit offices identify areas of audit concern. It comprises results of recent environmental conferences-national & international; "state in focus" where environment issues in a state are highlighted; critical appraisal of national environmental acts; snapshots of recent news on environment from across India; Supreme Court judgements on environment issues as well as recent national and international audit reports pertaining to environment and sustainable development.

We look forward to your suggestions to make Green Files more relevant. Contributions to the newsletter are also welcome. These can be mailed to iced@cag.gov.in.

Contents

I.	The Basel, Rotterdam & Stockholm Convention On Chemicals And Hazardous Waste Safety: Joint meeting- May 2013	2
II.	Environment Case law in India: M.C. Mehta v. Union of India, 1985 (Oleum Gas leak case)	3
III.	National Water Policy 2012: a critical analysis	7
IV.	Environment news snapshots from across India	12
V.	State in Focus: Rajasthan	15
VI.	Audit Report: Disaster Management performance in Uttarakhand	18
VII.	International Audit Report: Norwegian: Sustainable Management of Forest resources	22

I. The Basel, Rotterdam & Stockholm Convention On Chemicals and Hazardous Waste Safety –May 2013

1. The Basel, Rotterdam & Stockholm conventions

To reduce harmful global impact, three conventions have been established that regulate chemicals and hazardous waste at a global level:

i) **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal** regulates the export/import of hazardous waste and waste containing hazardous chemicals. The Convention was adopted in 1989 and entered into force in 1992. It currently has 180 Parties.

ii) **Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade** currently regulates information about the export/import of 47 hazardous chemicals listed in the Convention's Annex III, 33 of which are pesticides (including 4 severely hazardous pesticide formulations) and 14 of which are industrial chemicals. The Convention was adopted in 1998 and entered into force in 2004. It currently has 152 Parties.

iii) **Stockholm Convention on Persistent Organic Pollutants** currently regulates 23 toxic substances that are persistent, travel long distances, bioaccumulate in organisms and are toxic. The Convention was adopted in 2001 and entered into force in 2004. It currently has 179 Parties.

2. Joint meeting

The three conventions that govern chemicals and hazardous waste safety at the global level concluded their first ever jointly held meetings of parties in Geneva in May, 2013. It

aimed at strengthening protection against hazardous chemicals and waste and to strengthen cooperation and collaboration between the conventions, with a view to enhancing the effectiveness of their activities on the ground. The global agency leaders pledged to deepen cooperation and collaboration as part of a broader effort to raise the profile of chemicals and waste issues, promote green growth and alleviate poverty. The joint meetings of the conferences of the parties to the Basel, Rotterdam and Stockholm conventions also reviewed the impact of the arrangements put in place by governments in 2011 to strengthen synergies among the treaties.

3. Outcomes

- The joint meeting acclaimed the "Geneva Statement on the Sound Management of Chemicals and Waste". The Geneva Statement welcomed the UNEP-led consultative process on financing options for chemicals and waste that has considered the need for heightened efforts to increase the political priority accorded to sound management of chemicals and waste.
- The Global Environment Facility (GEF) has committed its financial support to help countries addressing the challenges of protecting the planet's critical ecosystems from contamination by hazardous chemicals and waste and GEF support for strategies to overcome them. To assist them in their efforts to mainstream sound chemicals management in national agendas, creating an integrated GEF chemicals and wastes focal area, and expanding engagement with the private sector.

- The parties endorsed the organization of the Secretariat, and adopted a programme of work and budget individual and for joint activities of three conventions in 2014-2015. The parties agreed to strengthen capacity building and technical assistance for countries by investing the savings realized over the past two years into an enhanced technical assistance programme that better meets the needs of developing countries and countries with economies in transition.

- The Parties adopted a framework for the environmentally sound management of hazardous wastes and other wastes, and agreed, over the next two years, to develop technical guidelines on transboundary movements of electronic and electrical wastes (e-waste).

- The meeting also decided terms of reference for the newly established Environmental Network for Optimizing Regulatory Compliance on Illegal Traffic (ENFORCE), which aims to prevent and combat illegal traffic in hazardous and other wastes through the better implementation and enforcement of national law.

- The Convention had considered the possible addition of five chemicals and one severely hazardous pesticide formulation to Annex III of the Convention. It agreed by consensus to add the pesticide azinphos-methyl and the industrial chemicals PentaBDE, OctaBDE and PFOS to Annex III of the Convention. Listing in Annex III triggers an exchange of information between Parties and helps

countries make informed decisions about future import and use of the chemicals.

- The Conference of the Parties to the Rotterdam Convention did not succeed in reaching agreement on the addition of chrysotile asbestos and a severely hazardous pesticide formulation containing paraquat to the Convention.

Source:-

<http://www.unep.org/newscentre/default.aspx?DocumentID=2716&ArticleID=9501>

II. Environment Case law in India: M.C. Mehta v. Union of India, 1986 (Oleum Gas leak case)

1) Background of the case

On December 4th and 6th 1985, a major leakage of Oleum gas¹ took place from one of the units of Shriram Food and Fertilizers Industry a subsidiary of Delhi Cloth Mills, located in Delhi which resulted in the death of several persons. This leakage resulted from the bursting of the tank containing oleum gas as a result of the collapse of the structure on which it was mounted. During the time the case was brought before the Court, another leakage took place as a result of escape of oleum gas from the joints of a pipe.

All units were set up in a single complex situated in approximately 76 acres and they were surrounded by thickly populated colonies and within a radius of 3 kilometres from this complex there was a population of approximately 2, 00,000. On 6th December, 1985 by the District Magistrate, Delhi under Section 133(1)²

¹ A hazardous product, fatal if absorbed through skin, swallowed or inhaled, causes severe respiratory tract burns

² Conditional order for removal of nuisance

of Cr.P.C, directed Shriram Industries that within two days, it should cease carrying on the occupation of manufacturing and processing hazardous and lethal chemicals and gases including chlorine, oleum, super-chlorine, phosphate etc., at their establishment in Delhi and within 7 days to remove such chemicals and gases from Delhi. At this juncture M.C. Mehta moved to the Supreme Court to claim compensation by filing a PIL for the losses caused and pleaded that the closed establishment should not be allowed to restart.

This case came up before the five-judge bench of the Supreme Court after a three-judge bench had referred it to a higher bench because certain questions of seminal importance and high constitutional significance were raised in the course of arguments when the writ petition was originally heard.

While the writ petition was pending, there was escape of oleum gas from one of the units of Shriram Industries on 4 and 6 December 1985 and applications were filed by the Delhi Legal Aid & Advice Board and the Delhi Bar Association for award of compensation to the persons who had suffered harm on account of escape of oleum gas.

2) Judgment of the Court

The court stated that the writ petition brought by way of public interest litigation raises some seminal questions concerning the true scope and ambit of Articles 21 and 32 of the Constitution, the principles and norms for determining the liability of large enterprises engaged in manufacture and sale of hazardous products, the

basis on which damages in case of such liability should be quantified and whether such large enterprises should be allowed to continue to function in thickly populated areas and if they are permitted so to function, what measures must be taken for the purpose of reducing to a minimum the hazard to the workmen and the community living in the neighbourhood.

Among other issues, the Court stated the following significant orders:

- The preliminary objection filed by the counsel for the defendant that the Court should not proceed to decide these constitutional issues since there was no claim for compensation originally made in the writ petition, was rejected by the Court. It further stated that applications for compensation were for enforcement of the fundamental right to life enshrined in Article 21 of the Constitution and while dealing with such applications, one could not adopt a hyper-technical approach which would defeat the ends of justice.
- The Court stated that it may be taken as well settled that Article 32 does not merely confer power on SC to issue a direction, order or writ for enforcement of the fundamental rights but it also lays a constitutional obligation on it to protect fundamental rights of the people and for that purpose, it has all incidental and ancillary powers including the power to forge new remedies and fashion new strategies designed to enforce the fundamental rights.
- The Delhi Administration constituted an Expert Committee to go into the existence of safety and pollution control measures covering all aspects such as storage, manufacture and handling of chlorine in Shriram Industries and to suggest

measures necessary for strengthening safety and pollution control arrangements with a view to eliminating community risk. The Committee made various recommendations with regard to safety and pollution control measures with a view to minimising hazard to the workmen and the public and the caustic chlorine plant would not be allowed to be restarted unless these recommendations were strictly complied with by the management of Shriram Industries.

- Justice Bhagwati stated that the Court must also deal with the question as to what is the measure of liability of an enterprise which is engaged in a hazardous or inherently dangerous industry, if by reason of an accident occurring in such industry, persons die or are injured. Does the rule in *Rylands v. Fletcher* apply or is there any other principle on which the liability can be determined? The rule in *Rylands v. Fletcher* was evolved in the year 1866 and it provides that a person who for his own purposes brings on to his land and collects and keeps there anything likely to do mischief if it escapes must keep it at his peril and, if he fails to do so, is prima facie liable for the damage which is the natural consequence of its escape. The liability under this rule is strict and it is no defence that the thing escaped without that person's wilful act, default or neglect or even that he had no knowledge of its existence. This rule laid down a principle of liability that if a person who brings on to his land and collects and keeps there anything likely to do harm and such thing escapes and does damage to another, he is liable to compensate for the damage caused. This rule applies only to non-natural user of the land and it does not apply to things naturally on the land or where the escape is due to an act of God and an act of a stranger or the default of

the person injured or where the thing which escapes is present by the consent of the person injured or in certain cases where there is statutory authority. This rule evolved in the 19th Century at a time when developments of science and technology had not taken place and cannot afford any guidance in evolving any standard of liability consistent with the constitutional norms and the needs of the present day economy and social structure. He further stated that the Courts need not feel inhibited by this rule which was evolved in this context of a totally different kind of economy. Law has to grow in order to satisfy the needs of the fast changing society and keep abreast with the economic developments taking place in the country. He also stated that the Courts cannot allow judicial thinking to be constricted by reference to the law as it prevails in England or for the matter of that in any other foreign country. He stated that ***an enterprise which is engaged in a hazardous or inherently dangerous industry which poses a potential threat to health and safety of persons working in the factory and residing in the surrounding areas owes an absolute and non-delegable duty to the community to ensure that no harm results to anyone on account of hazardous or inherently dangerous nature of the activity which it has undertaken.*** The enterprise must be held to be under an obligation to provide that the hazardous or inherently dangerous activity in which it is engaged must be conducted with the highest standards of safety and if any harm results on account of such activity, the enterprise must be absolutely liable to compensate for such harm and it should be no answer to the enterprise to say that it had taken all reasonable care and that the harm occurred without any negligence on its part. He stated that the SC therefore holds

that where an enterprise is engaged in a hazardous or inherently dangerous activity and harm results to anyone on account of an accident in the operation of such hazardous or inherently dangerous activity resulting, for example, in escape of toxic gas the enterprise is strictly and absolutely liable to compensate all those who are affected by the accident and such liability is not subject to any of the exceptions which operate vis-à-vis the tortious principle of strict liability under the rule in *Rylands v. Fletcher*. He further stated that that the measure of compensation in the kind of cases referred to in the preceding paragraph must be co-related to the magnitude and capacity of the enterprise because such compensation must have a deterrent effect. The larger and more prosperous the enterprise, the greater must be the amount of compensation payable by it for the harm caused on account of an accident in the carrying on of the hazardous or inherently dangerous activity by the enterprise.

3) Significance of the Judgement

- Hazardous industries are enterprises engaged in hazardous process which may cause adverse effect on health of the people and the environment unless special care is taken to the leakage of the raw material or by product. In this era of open global market economy hazardous industries play a decisive role in economic development and in the advancement of the economy, but simultaneously they pose risks to human life and environment. Developing countries like India suffer from the acute problem of environmental pollution.
- The origin of the national policy on chemical and hazardous industries relates to two major incidents of gas leakage, the Bhopal tragedy in 1994 and the oleum gas

leak tragedy in 1995. In these cases the Supreme Court felt that the English doctrine of Strict Liability adopted by the House of Lords in *Ryland v. Fletcher* would not suffice the changing need of the liability principle in India. So the Hon'ble Supreme Court felt the need of adopting the principle of Absolute Liability or else the Court of law would fail to provide justice to the victims of these large scale environmental disaster. The principles that came up from this historical case was the Principle of Absolute Liability, secondly the Principle of Polluters Pays, thirdly the Principle of Precautionary Measures, and finally the Principle of Highest Safety Standards came up in this particular case.

- There after a number of enactments were made by the union legislature for the purpose of controlling environmental pollution, like the Hazardous Waste (Management and Handling) Rules, 1989, secondly the Manufacturing Storage and Import of Hazardous Waste Chemical Rules, 1989, thirdly the Public Liability Insurance Act, 1991, fourthly the National Environmental Tribunal Act, 1995, an even many more legislation are made on the protection of environment from pollution.
- Scope of Art 21 was enlarged and the Right to human health and healthy environment was widened to include the Right of enjoyment of pollution free water and air for full enjoyment of life as a part of Right to Life. Right to clean environment was also maintained as a Right under Art 21 of The Constitution of India.

Source:

<http://www.legalserviceindia.com/article/I265-M.C.-Mehta-v.-Union-of-India.html>; <http://www.elaw.org/node/2719>;
<http://www.indiankanoon.org/>

III. National Water Policy 2012: a critical analysis

1. Need for National Water Policy, 2012

The National Water Policy, 2012 was adopted by the National Water Resources Council (NWRC) at its Sixth meeting held on 28th December, 2012.

A scarce natural resource, India has more than 18 % of the world's population, but only 4% of world's renewable water resources. There are further limits on utilizable quantities of water owing to uneven distribution over time and space. In addition, there are challenges of frequent floods and droughts. With a growing population and rising needs of a fast developing nation as well as the given indications of the impact of climate change, availability of utilizable water will be under further strain in future with the possibility of deepening water conflicts among different user groups. Other concerns are lack of economic value of water resulting in its mismanagement, wastage, and inefficient use, increase in pollution and reduction of flows below minimum ecological needs, inequities in distribution and lack of a unified perspective in planning, management and use of water resources.

The objective of the National Water Policy (NWP) is to take cognizance of the existing situation, to propose a framework for creation of a system of laws and institutions and for a plan of action with a unified national perspective.

2. India's water policy over the years

- The first NWP of 1987 explicitly stated water allocation priorities, but issued a rejoinder: "However these priorities might be modified if necessary in particular regions with reference to area specific considerations."

- The 2002 policy deviated from the NWP of 1987, by removing this rejoinder, and juggled and added priorities to include ecology, navigation and divided industry into agriculture-related (agro) and otherwise. The 2002 policy also encouraged private sector participation in planning, development and management of water resources. Impetus has been given to the public private partnership (PPP) model. It also stated that success of the endeavor would depend on a commitment to achieve the objectives and adoption of state water policies backed by an operational action plan. In the past decade only 11 states drafted their own policy.

- The Ministry of Water Resources published its Draft NWP in June 2012. The NWP 2012 was adopted by the National Water Resource Council during the 6th meeting of the council held in New Delhi under the chairmanship of Prime Minister Dr Manmohan Singh, who warned that water unavailability could affect India's economic and social growth in the future.

3. Main provisions of NWP, 2012

(i) The **basic principles** to govern water management are:

- Governance by common integrated perspective having an environmentally sound basis, keeping in view the human, social and economic needs.

- Principle of equity and social justice must inform use and allocation of water.
- Good governance through transparent informed decision making is crucial to the objectives of equity, social justice and sustainability.
- Management of water as a common pool community resource held by the state under public trust doctrine
- Water is essential for sustenance of eco-system, and therefore, minimum ecological needs should be given due consideration.
- Safe Water for drinking and sanitation should be considered as pre-emptive needs, followed by high priority allocation for other basic domestic needs (including needs of animals), achieving food security, supporting sustenance agriculture and minimum eco-system needs. Available water, after meeting the above needs, should be allocated in a manner to promote its conservation and efficient use.
- All the elements of the water cycle, are interdependent and the basic hydrological unit is the river basin, which should be considered as the basic hydrological unit for planning.
- Given the limits on enhancing the availability of utilizable water resources and increased variability in supplies due to climate change, meeting the future needs will depend more on demand management
- Water quality and quantity are interlinked and need to be managed in an integrated manner, consistent with broader environmental management approaches inter-alia including the use of economic incentives and penalties to reduce pollution and wastage.

- Impact of climate change on water resources availability must be factored into water management related decisions.

(ii) Water Framework Law

- To be an umbrella statement of general principles governing the exercise of legislative and/or executive (or devolved) powers by the Centre, the States and the local governing bodies.
- Lead the way for essential legislation on water governance in every State of the Union and devolution of necessary authority to the lower tiers of government to deal with the local water situation.
- Must recognize water not only as a scarce resource but also as a sustainer of life and ecology.
- Water, particularly, groundwater, needs to be managed as a community resource held, by the state, under public trust doctrine to achieve food security, livelihood, and equitable and sustainable development for all. Existing Acts may have to be modified accordingly.
- Need for comprehensive legislation for optimum development of inter-State rivers and river valleys to facilitate inter-State coordination and enable establishment of basin authorities, comprising party States, with appropriate powers to plan, manage and regulate utilization of water resource in the basins.

(iii) Uses Of Water

- Water is required for domestic, agricultural, hydro-power, thermal power, navigation, recreation, etc. Utilisation in all these diverse uses of water should be optimized and an awareness of water as a scarce resource should be fostered.

- Centre, the States and the local bodies (governance institutions) must ensure access to a minimum quantity of potable water for essential health and hygiene to all its citizens, available within easy reach of the household.
- Ecological needs of the river should be determined, through scientific study, recognizing that the natural river flows are characterized by low or no flows, small floods (freshets), large floods, etc., and should accommodate developmental needs.

(iv) Adaptation To Climate Change

- Special impetus should be given towards mitigation at micro level by enhancing the capabilities of community to adopt climate resilient technological options.
- Anticipated increase in variability in availability of water because of climate change should be dealt with by increasing water storage in its various forms, namely, soil moisture, ponds, ground water, small and large reservoirs and their combination.
- Adaptation strategies could also include better demand management for agricultural, industrial uses of water.

(v) Enhancing Water Available For Use

- Availability of water resources and its use by various sectors in various basin and States in the country need to be assessed scientifically and reviewed at periodic intervals, say, every five years. The trends in water availability due to various factors including climate change must be assessed and accounted for during water resources planning.
- The availability of water for utilization needs to be augmented to meet increasing demands of water. Direct

use of rainfall, desalination and avoidance of inadvertent evapo-transpiration are the new additional strategies for augmenting utilizable water resources.

- Need to map the aquifers to know the quantum and quality of ground water resources in the country. This to be periodically updated.
- Declining ground water levels in over-exploited areas need to be arrested
- Integrated Watershed development activities with groundwater perspectives need to be taken in a comprehensive manner.

(vi) Demand Management and Water Use Efficiency

- A system to evolve benchmarks for water uses for different purposes, i.e., water footprints, and water auditing should be developed to promote and incentivize efficient use of water.
- Institutional arrangement for promotion, regulation and evolving mechanisms for efficient use of water at basin/sub-basin level will be established for this purpose at the national level.
- The project appraisal and environment impact assessment for water uses, particularly for industrial projects, should, inter-alia, include the analysis of the water footprints for the use.

(vi) Water Pricing

- Equitable access to water for all and its fair pricing, for drinking and other uses, should be arrived at through independent statutory Water Regulatory Authority, set up by each State, after wide ranging consultation with all stakeholders.
- Water charges should preferably / as a rule be determined on volumetric basis.

- Recycle and reuse of water, after treatment to specified standards, should also be incentivized through a properly planned tariff system.
- Principle of differential pricing may be retained for the pre-emptive uses of water for drinking and sanitation; and high priority allocation for ensuring food security and supporting livelihood for the poor. Available water, after meeting the above needs, should increasingly be subjected to allocation and pricing on economic principles so that water is not wasted in unnecessary uses and could be utilized more gainfully.
- Over-drawal of groundwater should be minimized by regulating the use of electricity for its extraction, separate electric feeders for pumping ground water for agricultural use should be considered.

(vii) Conservation Of River Corridors, Water Bodies And Infrastructure

- Conservation of rivers, river corridors, water bodies and infrastructure should be undertaken in a scientifically planned manner through community participation.
- Sources of water and water bodies should not be allowed to get polluted. System of third party periodic inspection should be evolved and stringent punitive actions be taken against the persons responsible for pollution.
- Quality conservation and improvements are even more important for ground waters, since cleaning up is very difficult. It needs to be ensured that industrial effluents, local cess pools, residues of fertilizers and chemicals, etc., do not reach ground water.

(viii) Project Planning And Implementation

- Water resources projects should be planned considering social and environmental aspects also in addition to techno-economic considerations in consultation with project affected and beneficiary families.

(ix) Management Of Flood & Drought

- Emphasis should be on preparedness for flood / drought with coping mechanisms as an option. Greater emphasis should be placed on rehabilitation of natural drainage system.
- Flood forecasting is very important for flood preparedness and should be expanded extensively across the country and modernized using real time data acquisition system and linked to forecasting models.

(x) Water Supply And Sanitation

- Need to remove the large disparity between stipulations for water supply in urban areas and in rural areas.
- Least water intensive sanitation and sewerage systems with decentralized sewage treatment plants should be incentivized.
- Urban domestic water systems need to collect and publish water accounts and water audit reports indicating leakages and pilferages.
 - In urban and industrial areas, rainwater harvesting and de-salinization, wherever techno-economically feasible, should be encouraged to increase availability of utilizable water.
 - Industries in water short regions may be allowed to either withdraw only the make up water or should have an obligation to return treated effluent to a specified standard back to the hydrologic system.

(xi) Institutional Arrangements

- A forum needed at the national level to deliberate upon issues relating to water and evolve consensus, co-operation and reconciliation amongst party States. A similar mechanism should be established within each State.
- A permanent Water Disputes Tribunal at the Centre should be established to resolve the disputes expeditiously in an equitable manner
- Water resources projects and services should be managed with community participation.
- For improved service delivery on sustainable basis, the State Governments / urban local bodies may associate private sector in public private partnership mode with penalties for failure, under regulatory control on prices charged and service standards with full accountability to democratically elected local bodies.
- Appropriate institutional arrangements for each river basin should be developed.

(xii) Trans-Boundary Rivers

- Efforts should be made to enter into international agreements with neighbouring countries on bilateral basis for exchange of hydrological data of international rivers on near real time basis.
 - Negotiations about sharing and management of water of international rivers should be done on bilateral basis in consultative association with riparian States keeping paramount the national interest. Adequate institutional arrangements at the Centre should be set up to implement international agreements.

(xiv) Database & Information System

- A National Water Informatics Center should be established to collect, collate and process hydrologic data regularly from all over the country, conduct the preliminary processing, and maintain in open and transparent manner on a GIS platform.

4. Critical Analysis of Draft Policy

- NWP suggests amending existing laws that give proprietary rights over water to individuals. The law will also cover the development of inter-state rivers and streamline the management of water in India. In this context a suggestion has been made for a national legal framework of general principles on water, which, in turn, would pave the way for essential legislation on water governance in every state.
 - A stronger statement recognising water as a fundamental right and stipulations on its quality and quantity is needed. There should be provisions holding the state accountable if it fails to provide this basic right, along with legal reforms for enforcement. The policy does not spell out priorities for water allocation.
 - Community participation is also the key, according to the policy, in mapping aquifers for which a provision has been made in the 12th Five Year Plan. It recognizes the rapid depletion of groundwater but does not spell out any specifics. More proactive steps, retraining groundwater board staff and a national programme on community groundwater management based on successful experiments in India is required.
 - In water efficiency, the policy recognised the importance of small schemes, while making a case for efficiency across the board but no target is mentioned making this a vague statement.

- The policy details water pricing while cautioning that differential pricing may be required to supply lifeline water. It recommends setting up water regulatory authorities in state to regulate water tariffs and the system as a whole. Water charges must be volumetric and water user associations must be free to fix these to suit local conditions subject to a floor tariff. However, experience with the existing regulatory authorities has been very poor and it has been seen they are very susceptible to political and industrial pressures at the expense of agriculture and domestic supply.

- NWP should have emphasised on completing existing projects, the cause of cost overruns, but has instead subsumed this under the need to have more such projects. The silver lining is the inclusion of people—panchayats, municipalities, etc.—from the planning stage.

- To control floods, the policy does state rehabilitating natural drainages, but then reverts to the old rhetoric of building more embankments, spurs and revetments and there is no mention of rehabilitating existing structures.

- On water supply and sanitation, NWP breaks new ground only in stating that urban water supply and sewage treatment schemes should be integrated and built simultaneously. It re-states the obvious: cities should get their water from surface systems and encouraging rainwater harvesting. Worryingly, it introduces desalination as an option instead of pointing the way towards maximising local water availability. The policy ignores the fact that cities draw half their water from the ground and this need to be balanced by an aggressive urban water management plan.

- A National Water Disputes Tribunal takes shape in the policy but the section on institutional arrangements and inter-state rivers has blacked out the existing laws and tribunals. How the new tribunal will sit with those already around, and those that have passed verdict and folded up, is unclear. This may be recipe for further inter-state conflicts given the recent experience of the one between Tamil Nadu and Karnataka who refuse to accept orders.

Source: <http://mowr.gov.in>;
<http://www.indiawaterreview.in>;
www.downtoearth.org.in;

IV. Snapshots: Environment news

Hyderabad third greenest city in India

In a recent study conducted by the Ministry of Environment and Forests, Government of India, Hyderabad has been ranked the third greenest city in the country after Delhi and Bengaluru. The study also says that the city is almost close to the international standard of greenery which is 33 per cent. The City Corporation's latest initiative will add 14 more biodiversity parks to the city. The Hyderabad Metropolitan Development Authority has undertaken tree plantations in about 4,000 hectares of reserve forest area. Proposed in 2009, this project is expected to complete by the end of 2013.

Noida for green zones along rivers

The Noida Authority has decided to appoint a technical consultant by the end of this month to begin its ambitious Riverfront Development Project. Through this project, the Authority plans to spread the Riverfront Development Project in Noida across a total area of over 600 acres covering riverbanks of Yamuna and Hindon by

massive plantation drives and building recreation zones. The green buffers developed along the riverfronts will help prevent building of illegal colonies floodplains, besides improving the environment. The Noida and Greater Noida authorities have allocated Rs 100 crore for the project. The green corridors are also mooted to recharge depleting groundwater tables.

Delhi to get its second waste-to-energy plant

The second waste-to-energy plant with Chinese technology is now scheduled to come up at Narela in North Delhi near Narela-Bawana landfill site. The plant, which is being constructed on a public private partnership (PPP) model, will dump only 10 per cent of the total waste at the sanitary landfill site. The plant will generate 24 MW of electricity on daily basis after consuming 1,200 tons of municipal waste. Taking care of the groundwater and air pollution, this plant is designed in such a manner that it would serve the dual purpose of adding the power generation capacity of the city, as well as containing the need of sanitary land fill sites.

Maldives to introduce environment police

The Police and Environment Ministry in Maldives have teamed up to establish an Environment Police unit in order to effectively enforce environment-related laws, regulations and international treaties on environment protection.

UNESCO designates Nicobar as world biosphere reserve

UNESCO member countries establish these reserves and the world body recognizes them under this programme to promote sustainable development. These regions are considered as sites of excellence, where new and optimal practices to manage nature and human activities are tested and demonstrated. The island chain of the Nicobars is home to approximately 1,800 animal species and is also the abode of some of the world's most endangered tribes. It was among 12 new areas added to the global network of biosphere reserves in Paris. Such reserves are located in 117 countries and nine of them are located in India.

333 acres of forest cover lost daily

According to recent data acquired through RTI from the Ministry of Environment and Forests by a group of environmentalists, the extent of forest land being diverted across the country on an average stands at 135 hectares (around 333 acres) per day. Such diversions are done on various pretexts, say for coal mines, thermal power plants, industrial or river valley projects. It also shows the laws framed to protect our green reserves lack teeth. Their depletion impacts the climate, biodiversity and water resources, among others. Development at the cost of environment only leads to greater pitfalls.

Eco-friendly green toilets launched

To curb open defecation in the Nilgiris district, Rural Development Organization (RDO), an NGO in the Nilgiris, launched cost effective, eco-friendly green toilets. The RDO has successfully assisted 5550 families in

constructing household toilets in various villages in the Nilgiris at an estimated cost of Rs 11.10 crore. The salient features of the pre-fabricated toilet include its easy cleaning, its resistance to dust, it does not require foundation and it economizes use of water.

National Green Tribunal order could close over 50% of industries, restaurants in Goa

The National Green Tribunal (NGT) has directed pollution control boards across the country to close down all units, including hotels, running without the consent to operate under the air and water acts. A letter containing the order sent by Union ministry of environment and forests (MoEF) was received by the Goa state pollution control board (GSPCB), could shut down over 50% of industries and hotels in Goa, operating without the consent under the acts. NGT also said that local police shall extend all cooperation to the PCB in the sealing process.

Government to develop 'fish sanctuaries' in Meghalaya

The State Government is planning to explore a new domain of tourism with the development of 100 fish sanctuaries across the State. The Government would tie up with fish farmers across the State in developing the proposed fish sanctuaries. A total amount of Rs 1200 crore has been earmarked for the department during the 12th Five-year Plan period. There is a stress on the need to increase the manpower to sustain the aim of the government to make Meghalaya a fish surplus state.

Threat to conservation: Lion bone trade on rise

The international market value of lion bones range between \$ 300 and \$ 500 for every kilogram. The bones are used in China for traditional Chinese medicines. Lion bones are being used as substitutes for tiger bone potions, finds Empower Foundation, a Mumbai based NGO working on Sanjay Gandhi National Park's man-animal conflict. In 2007, eight lions were killed in Gir by poachers from MP. Investigations carried out by CID (Crime) officials had concluded with the arrest of several poachers including leader of this poachers' gang.

Rare N nigricans turtle species facing extinction

The soft-shell N nigricans turtles, a rare species found only in the tank of the Tripureswari Temple in Gomati district of Tripura, is facing extinction. The International Union for Conservation of Nature (IUCN) had classified that specimen, popularly known as Bostami turtle, as extinct in the wild.

Great Indian Bustard to be tracked by satellite

The Great Indian Bustard, one of the critically endangered flying bird species in the world, will soon be tracked by satellite by the Wildlife Institute of India to understand the movement of this rare bird and its preferred habitat. The move is viewed as a major push towards saving the dwindling population of the species by hunting and loss of its habitat (dry grasslands), primarily in Gujarat and Rajasthan, besides few other Indian states like Maharashtra, Karnataka and Madhya Pradesh.

MoEF plans to add more teeth to forest clearance system

Recognising monitoring as the weakest link in the forest clearance (FC) process, the environment ministry is planning to increase the frequency of monitoring of projects.

Karnataka urged to speed up rehab of areas damaged by illegal mines

Says the ill-gotten wealth should be recovered and used for reclamation and rehabilitation. The National Committee for Protection of Natural Resources (NCPNR) has urged chief minister Siddaramiah to take steps to initiate punitive action against companies involved in illegal mining and the officials who connived with them.

Buildings without CRZ nod in city may face action

Several buildings in Mumbai and Navi Mumbai that have come up without the mandatory coastal regulation zone (CRZ) clearance could soon face action. The state government has decided to ask civic bodies to initiate action against them after Union environment minister Jayanthi Natarajan's refusal to grant post-facto environmental clearance to such buildings last week. There are nearly 700 such buildings in Navi Mumbai and Mumbai, sources said.

Pollution level near Okhla waste-to-energy plant 25 times above limit

The process of burning solid waste to convert it to energy at a recycling plant in South Delhi has made the air near the unit 25 times more polluted than the permissible limit, a surprise check of a surprise check of the Okhla

waste-to-energy plant has revealed. According to the report, the levels of dioxin, furan and particulate matter around the Okhla plant is far beyond limits.

Source: <http://www.indiaenvironmentportal.org.in>

V. State in Focus: Rajasthan

Rajasthan is located in the northwest of India. It covers 10.4% of India, an area of 342,239 square kilometres. It comprises most of the area of the large, inhospitable Thar Desert, also known as the Great Indian Desert, which parallels the Sutlej-Indus river valley along its border with Pakistan to the west. Though there is little forest cover in which it has a rich and varied flora and fauna. There are some major driving forces that threaten the changes in the environmental profile of the state are discussed below-

1) Increasing population & urbanization

Population growth directly affects environment and causes rapid degradation. Population has witnessed growth of 351%, exceeding the national average of 285%. In terms of density of population, state average of 165 persons/SqKm is almost half of the national average of 325 persons/SqKm. Increase in population density is exerting pressure on roads, water supply, power supply etc., and existing system can neither cope with it nor there are enough resources to augment these services. Inadequate Solid Waste management and drainage system with treatment facility are the main causes of poor sanitary conditions in urban areas, especially in slums and low-lying areas.

2) Ground water threat

The State has very limited water resources as it has 1.16% of water resources only. Likewise groundwater resources are only 1.70% of the total groundwater resources of the country and these are also being over exploited. As there is increasing trend of ground water utilization situation is expected to get worse with every passing year.

Water table is going down in many parts and with it water quality is also deteriorating. Excess of dissolved salts, chlorides, fluorides and nitrates has rendered the water unfit for human consumption at many places. Today all the 32 districts of Rajasthan are endemic to fluorosis, a crippling irreversible disease (teeth and bone deformities) caused by excess of fluorides in drinking water affecting children in particular.

3) Air pollution

Shortage in electrical energy has led to growth of captive power plants using D.G. sets in major as well as small-scale industries, offices, hotels and many other places. The total captive power plants capacity is estimated to be about two-third of the total generation capacity of the State. Expected power demand & energy requirement simply means excess use of depletable resources, inefficiency as well as increased air pollution.

Thermal power and Hydropower are the primary sources of electricity in Rajasthan. The State depended largely on hydro power stations. Thereafter, thermal power generation has been increased several fold towards meeting the demand. Dependence on thermal power

resulted in increasing installed capacities. This exerts further pressure in respect of the air pollution, storage & disposal of fly ash which causes ailments like allergic bronchitis, silicosis and asthma. It also releases emissions of oxides of carbon, sulphur, nitrogen and suspended particulate matter into the atmosphere.

4) Water contamination

Increasing load of thermal plants has been causing heavy metal accumulation in nearby rivers or ground water or surface water. It also affects the aquatic life and corrodes exposed metallic structures in its vicinity. Heavy metals have been leaching into ground water. Pollution of surface as well as ground water is noticed in the areas where textile bleaching, dyeing and printing units have been set up in clusters at Pali, Balotra, Jasol, Bithuja in Barmer district, Jodhpur, Sanganer and Bagru in Jaipur district. At Pali water pollution is very high due to dyeing & printing units. Similarly the problem of water pollution at Sanganer town is so severe that it has attracted public concern. There are 65 Large & Medium Scale Industries which fall under categories of 17 highly polluting industries identified by Central Pollution Control Board.

5) Deterioration of Forest Land

Hydel projects have led to the construction of large reservoirs which involve submergence of good forest areas and human habitations. Poor management of the catchment area of hydel power plants, resulting soil erosion.

Overgrazing in forest areas, commons, and other wastelands with natural

vegetation is the most important pressure on the forests. This reverse ecological succession is turning large areas of lands into deserts, barren expanse bereft of plants and soils being washed down under monsoon showers. Consequent demand of fuel wood and other forest produce is leading to unprecedented pressure on forests and other natural vegetation.

Encroachment for marginal agriculture has also been reason for deterioration of forest land. Other causes have been construction of roads, expansion of urban areas other settlements, and establishment of industrial centres near or inside forests.

6) Depletion of non- renewable resources-

Low energy efficiency is a major concern in the State. Low efficiency means more energy consumption and hence more consumption of non-renewable resources. Poor efficiency in the use of energy is due to inefficient devices/old technologies, poor instrumentation & energy audit, lack of norms for various components & subsystems and poor maintenance of equipment, poor instrumentation, improper matching of input electrical power and output load (due to poor quality of power supply), lack of awareness about new devices and absence of local research institution in energy conservation.

7) Threat to biodiversity-

A vast majority of the State's indigenous plants are of known economic importance and are being used by local communities. Plants yield a wide range of economic products such as fibre, fodder, firewood, gums and resins, tannin, dyes, timber, food,

non-edible oils, medicines, poisons, and other products. There are 23 species of plants that are endemic to the State. It is estimated that 100 species of plants (including 61 of desert region) are threatened in view of their conservation status. All the 19 endemic species are threatened, and so are all the 35 wild relatives of cultivated plants.

8) Rajasthan among worst offenders in as respect of Pollution-

According to the environment report card, Rajasthan is among the worst performers in the country. The state has the fifth highest consumption of pesticides in the country. This despite Rajasthan's contribution to agriculture being under 10% nationally. Moreover, agrarian states like Punjab and Haryana have witnessed a dip in usage of pesticides even as it goes up in Rajasthan. The report noted that the due to excess use of pesticides, organisms develop resistance and lead to major health issues. Statistics also reveal that 21% of the total land in the state is under mining, which exerts huge pressure on bio-diversity. The total number of mining leases issued in the state in year 2009 was 2,068 and in the year 2011 this figure jumped to 2,696. The total area covered under mining activities stands at 1, 07,000 hectares, making Rajasthan the leading state in the sector. Figures for water conservation are also alarming in Rajasthan. The withdrawal exceeds the replenishing of ground water resources.

8) Laws & Policies: The principal laws in force in Rajasthan State are given below-

(i) Forest Act, 1953

(ii) the Forest (Conservation) Act, 1980

(iii) the Wildlife (Protection) Act, 1972

(iv) The Biological Diversity Act, 2004.

(v) Tourism Policy of Rajasthan 2001

9) Environment Sustainability Index (ESI) for Rajasthan-

ESI collects and collates a huge amount of data and converts into interpretable indices, to create more awareness of environmental sustainability among the practitioners, researchers and society as a whole. Rajasthan ranks on 22 out of 28 states.



Source:

<http://www.greenindiastandards.com/rajasthan.php?stateid=25>

VI. Audit Report: Disaster Management Performance in Uttarakhand)

A scheme, 'Calamity Relief Fund (CRF)', was conceived on the recommendations of the Ninth Finance Commission (January 1991) to build a safe and disaster resilient India by developing a holistic, proactive, multi disaster oriented and technology driven strategy through a culture of prevention, mitigation, preparedness and response.

The State of Uttarakhand, due to its complex terrain and on-going

tectonic activities, is highly prone to hazards like earthquakes, landslides, cloud bursts, and flash floods. Of the 13 districts of the State, four districts fall completely and five partially in Zone V of Earthquake Risk Map of India. The remaining parts of the State fall in Zone IV. Earthquakes are the most devastating disaster in the mountains and are unpredictable. Uttarakhand also experienced a series of landslides/cloud bursts in Uttarkashi (2005), Ramolsari (2005), Devpuri (2007), Baram (2007) and LawJhekla (2009).

Audit objectives

The objectives of the performance audit were to assess Government of Uttarakhand's (GOU) preparedness in dealing with disasters, measures adopted for obviating the impact of disasters, reaction time taken in responding to emergencies and efficiency and effectiveness of post disaster relief measures. To meet the objectives, the following aspects were examined to see whether:

- Lessons learnt from earlier disasters had been used for formulation of effective policies for disaster management;
- Proper institutional mechanism had been set up for disaster management including pre-disaster risk assessment, mitigation, prevention and preparedness;
- Proper arrangement of coordination committees existed both at the State and district level;
- Emergency operation control centres were adequately equipped with telephones, wireless sets and manpower;
- Funding for relief activities was adequate;

- In the event of a disaster, the coordination amongst the departments was effective and functional;
- The special assistance through National Calamity Contingency Fund was forthcoming as per needs;
- General public awareness campaigns were adequate;
- Post-disaster activities relating to provision of immediate assistance, restoration of infrastructural services, reconstruction of houses, etc. were efficient, economic and effective;
- Arrangements were in place for ample training modules and imparting training to state level officials, private sector and NGOs; and
- System of monitoring of relief/rehabilitation/reconstruction activities by Government was efficient and effective.

Audit Findings:

- The Disaster Management Act, 2005 envisaged that a State Authority shall have the responsibility for laying down policies and plans for disaster management in the State. Audit scrutiny revealed that GOU formed State Disaster Management Authority (SDMA) in October 2007. However, despite a lapse of nearly three years, the State authority could not formulate rules, regulations, policies and guidelines (August 2010).
- Audit noticed absence of any comprehensive guidelines prescribing the duties and responsibilities of various Government functionaries on the occurrence of a natural calamity and the methods to be adopted for assessing damages, losses and providing timely compensation to victims. Thus, SDMA was virtually non-functional since its inception.

- According to GOI guidelines opening of PLA in the State and districts, to facilitate the smooth utilisation of funds is required but scrutiny of records revealed that neither the department nor the district level offices except Chamoli district had opened the respective PLAs.

- Scrutiny revealed that none of the departments had taken any specific measures for prevention, mitigation and preparedness in their development plans and projects. Further, no funds were allocated for the same by any of the State departments and instead, they remained dependent on CRF.

- In view of construction boom and rapid urbanisation, National Policy of Disaster Management (NPDM) envisaged the need to review municipal regulations such as development control regulations, building byelaws and structural safety features. These regulations were to be reviewed periodically to identify safety gaps in view of earthquake, flood, landslide and other disasters. Introduction of suitable regulations for rural areas was also to be emphasised. Audit scrutiny revealed that no regulations were formulated; only instructions/ orders were issued by the Housing Department to various agencies. However, their enforcement and compliance were not found on record.

- GOI had advised States to take necessary action for detailed evaluation/retrofitting of existing lifeline buildings like hospitals, administrative buildings, schools, cinema halls or multistoried apartments to ensure their compliance with BIS norms. GOU established Hazard Safety Cell (May 2005) to ensure compliance and provide technical support to the State Government in carrying out retrofitting of lifeline buildings and systems. The cell has

so far identified only around 20,000 such buildings in five Cities/Towns 6 which need retrofitting. Audit noticed that the members of the cell did not meet frequently to identify and suggest remedial measures.

- Audit observed the absence of critical infrastructure such as trauma centre were no trauma centres in almost all the test checked districts barring district Dehradun and Pauri.

- Assessment of structural and non-structural safety of school buildings and identification of necessary mitigative action was not included in the school safety programme, leaving 39 per cent of school buildings unattended.

- In the pursuance of the establishment of Emergency Operations Centres (EOCs) at state level Scrutiny revealed that though SEOC was established (July 2006) but it was running without adequate manpower so it affected proper up gradation of Disaster Management Action Plan (DMAP), maintenance of data bank and inventory of resources.

- Reliable communication system was inadequate and Audit also noticed that license of some satellite phones were not renewed despite the fact that the validity of these phones had expired. Reliable communication system was inadequate as the delay in sharing of disaster information ranged from one to more than 24 hours.

- The training on search and rescue was given only to the fire service, police, revenue police and Pradeshik Rakhshak Dal. But the other lead agencies like Medical, Peyjal and Irrigation were not involved in this exercise. The involvement of local people and NGOs was also not

taken care of in the training module for the preparation of youth volunteers.

- No follow up mechanism existed to watch the progress of the works subsequent to release of funds. This also led to funds remaining unutilized for long periods which could have been utilized in some other disaster related works.

- Audit checked records of some cases on random basis which revealed that timely compensation could not be made to the claimants.

- During physical verification and interaction with the local population, audit noticed that all the works were not carried out as per the CRF norms and guidelines.

- Audit scrutiny revealed that Monitoring and evaluation mechanism prescribed for the scheme was not followed i.e. Annual Report for the year 2009-10 was not furnished by the Government as of August 2010 and the MHA had neither taken up evaluation of the CRF scheme nor got the evaluation done by any independent agency even once during the last five years 2005-10.

- In absence of Rehabilitation & Resettlement policy, 80 identified villages of selected districts could not be rehabilitated.

- The absence of a proper monitoring mechanism at state level led to poor monitoring of the disaster related activities. No standard formats and returns were prescribed by the department for the reports.

Recommendations-

- The department should take immediate steps to formulate the policy guidelines, rules and norms.

- The State Government should ensure effective functioning of the SDMA by convening regular meetings and reviewing follow up action of its recommendations.
- The State Government should ensure that disaster management plan is developed so that disaster management measures are included in the development process.
- The State Government should codify building byelaws to ensure safe construction practices in the State.
- Government should take steps to provide critical infrastructure such as trauma centre, so that the affected population could be given immediate medical attention.
- Department should take immediate steps to form Village Disaster Management Committees in the remaining villages of the State.
- Government should take immediate steps to prepare a comprehensive Rehabilitation & Resettlement policy to rehabilitate the disaster affected villages.

Source: http://saiindia.gov.in/english/home/Our_Products/Audit_Report/Government_Wise/state_audit/recent_reports/Uttarakhand/Ultra_Khand.html

VII. International Audit Report: Norwegian: Sustainable Management of Forest resources

1) Background and purpose of the audit

The purpose of the audit has been to assess to what extent the Ministry of Agriculture and Food's control and

instruments ensure sustainable management and facilitate increased logging of forest resources. The audit has mainly been based on the decade 2001–2011. The forestry sector has historically been of great economic importance in Norway. Forestry, timber industry and wood processing are important rural industries. Forestry activities have also had a major impact on our success in achieving national environmental objectives concerning e.g. biological diversity, climate and outdoor life. Sustainable development is necessary if we are to utilise our forestry resources in the best interests of our society and is also important if we are to sell our timber products on the international market. The forestry policy objectives for sustainable management and increased logging have been roughly the same for the decade 2001–2011, but the significance of forests for the climate has become more important in recent years.

2) Main findings and recommendations

- **The Forestry Act's requirement for satisfactory regeneration after logging is not being fully complied.** The OAG recommends that the Ministry of Agriculture and Food, in its work of developing the management of forest resources, considers continuing and strengthening the implemented measures that will ensure a better control with follow-up of the regeneration duty.

- **There is inadequate control and follow-up of statutory environmental requirements:** The OAG recommends that the Ministry of Agriculture and Food strengthens its control and follow-up of the environmental requirements in laws and regulations in order to ensure better

compliance with the requirements stipulated in the Sustainability Regulations.

- **Forest owners need more information and guidance:** The OAG recommends that the Ministry of Agriculture and Food, in its work of developing the management of forest resources:

- considers providing forest owners with more information on existing instruments and on their environmental responsibility, and giving them better access to environmental information

- conducts a more systematic compilation of information on how key environmental considerations are safeguarded in forestry

- **Trends in logging levels do not comply with the Storting's logging objectives:** The OAG recommends that the Ministry of Agriculture and Food:

- improves access to forest resources through infrastructure measures in order to encourage increased logging and regeneration

- maps whether primary forestry, stimulation programmes, preparation of action programmes or a system to assess the overall effect of forest funds and subsidies will contribute to increased achievement of the objectives

- In cooperation with the Ministry of the Environment looks at opportunities for a better coordination of how key instruments in forestry policy are practised.