



## 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](mailto:iced@cag.gov.in).

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## I. Berlin High-level Dialogue on Implementing Rio+20 decisions on Sustainable Cities and Urban Transport: Joint meeting- June 2013

### 1) Background

Rapid private motorization poses growing challenges and problems, including urban congestion, inefficient fuel use and air pollution. Many cities around the world face similar challenges. Making cities and urban transportation systems more sustainable will be a prerequisite for poverty eradication, a “greener” economy and sustainable development.

Rio+20 noted “that transportation and mobility are central to sustainable development”, and recognized “the importance of the efficient movement of people and goods, and access to environmentally sound, safe and affordable transportation as a means to improve social equity, health, resilience of cities, urban-rural linkages and productivity of rural areas”. Rio+20 called upon governments to “support the development of sustainable transport systems, including energy efficient multi-modal transport systems, notably public mass transportation systems, clean fuels and vehicles, as well as improved transportation systems in rural areas”. In this context, the Berlin High-level Dialogue on Implementing Rio+20 Decisions on Sustainable Cities and Urban Transport was convened in June 2013 to coincide with the first anniversary of the Rio+20 Conference.

### 2) Objectives of the Berlin high level Dialogue

- Highlight proven sustainable urban planning and transport policies and measures
- Identify good and best practices in this regard, and

- Facilitate capacity building through national and international exchanges of information and experiences among relevant practitioners, experts and policy makers, in particular from developing countries.

### 3) Issues discussed

The Berlin Conference emphasized “the important role of municipal governments in setting a vision for sustainable cities, from the initiation of city planning through to revitalization of older cities and neighbourhoods, including by adopting energy efficiency programmes in building management and developing sustainable, locally appropriate transport systems”. The information on relevant practical tools and policy options was presented, discussed and exchanged which could make urban development and transport more sustainable like:

- management, regulation and restrictions on parking of private vehicles,
- congestion charges or similar (temporary) access restrictions,
- design and implementation of inner city environmental zones,
- planning and design of urban transport infrastructure, including pedestrian-only zones, separate bicycle lanes
- A review of best practices in urban planning and related plan implementation was included and the challenges, potential risks, and effective strategies to overcome them were also discussed.

### 4) Outcomes

The Dialogue was intended to provide a forum to present and discuss innovations as well as trends and issues with regard to the various transport energy technology options, the different energy carriers, storage technologies, as well as alternative charging systems and power train technologies.

Some of the areas of discussion were: Global Forum on Human Settlements 2013: Best Practices in Urban Development and Eco-Cities, Linking Urban Development and Mobility” Approaches and Success Stories in International Cooperation, Multi-Modal Transport Concepts for Cities, Exchange on Urban Planning for Sustainable Transport, Sustainable Energy for Sustainable Transport.

Source:-

<http://sustainabledevelopment.un.org/index.php?page=view&nr=412&type=13&menu=1634,sustainabledevelopment.un.org/content/documents/1702aideberlin.pdf>

## II. Environment Case law in India: Indian Council for Enviro-legal Action v Union of India, AIR 1996 SC 1446

### 1) Background of the case

Bichhri is a small village in Udaipur District of Rajasthan. To its north is a major industrial establishment, Hindustan Zinc Limited, a public sector concern. In 1987, Hindustan Agro Chemicals Limited started producing certain chemicals like Oleum and Single Super Phosphate. A sister concern, Silver Chemicals commenced production of 'H' acid in a plant located within the same premises.

It was seen in Bichhri village, H acid poisoned the earth, water and everything that came in contact with it. The water in the wells and streams turned dark and dirty rendering it unfit for human consumption. It became unfit for cattle to drink and for irrigating land/ the soil became polluted rendering it unfit for cultivation, the mainstay of the villagers. It spread disease, death and disaster in the village and the surrounding areas. The effluents from the plants seriously polluted the nearby drain and overflowed into Udaisagar main canal, severely corroding its cement-concrete lined bed and banks. The

polluted waters also seriously degraded some agricultural land and damaged standing crops. The other activities of plant caused extensive seepage and percolation of effluents into ground water and their spread down the aquifer. About 60 wells appeared to have been significantly polluted. This created serious problems for water supply for domestic purposes, cattle-watering crop irrigation and other beneficial uses, and it has also caused human illness and even death, degradation of land and damage to fruit, trees and other vegetation. The groundwater was also contaminated due to discharge of H-acid plant effluent as well as H-acid sludge/contaminated soil leachates.

A writ petition was filed by an environmentalist organization in 1989 to bring to light the woes of people living in the vicinity of chemical industrial plants in India. The villager rose in revolt leading to the imposition of sec. 144 CrPC<sup>1</sup> by the District Magistrate in the area and the closure of the Silver Chemicals in Jan 1989. Though both the units, Silver Chemicals and Jyoti Chemicals had stopped manufacturing 'H' acid since Jan. 1989 and were closed, yet the consequence of their action remain--the sludge, the long-lasting damage to earth, to underground water, to human being, to cattle and the village economy.

### 2) Judgment of the Court

The Court held that the Company was **absolutely liable** for the environmental degradation caused by the production of 'H' acid. In India, absolute liability is a standard of tort liability which stipulates 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

<sup>1</sup> Section 144 of the Criminal Procedure Code (CrPC) empowers a magistrate to prohibit an assembly of more than ten people in an area.

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*. The Doctrine of Absolute Liability was evolved in *Oleum Gas Leak Case* and can be said to be a strong legal tool against rogue corporations that were negligent towards health risks for the public. This meant that the defaulter could be held liable for even third party errors when the public was at a realistic risk. This could ensure stricter compliance to standards that were meant to safeguard the public.

### **The Court stated the following significant orders:**

- The **Polluter Pays Principle** means that absolute liability of harm to the environment extends not only to compensate the victims of pollution, but also to the cost of restoring environmental degradation. Remediation of damaged environment is part of the process of sustainable development. In this case a number of private companies operating as chemical companies were creating hazardous wastes in the soil and polluting the village area situated nearby without the required licenses. As such, polluting industries were held to be absolutely liable for the harm caused by them to villagers in the affected area, etc. and they were ordered to take all necessary measures to remove sludge and other pollutants lying in the affected areas.
- The Central Government may consider the advisability of strengthening the environment protection machinery both at the Centre and the States. The heads of several units and agencies should be made personally accountable for any lapses and/or negligence on the part of their units and agencies.
- The idea of an environmental audit by specialist bodies created on a permanent basis with power to inspect, check and take necessary

action not only against erring industries but also against erring officers may be considered. Environmental audit conducted periodically and certified annually, by specialists in the field, duly recognised, can also be considered. The Court stated that the ultimate idea is to integrate and balance the concern for environment with the need for industrialisation and technological progress.

- The first considered Order made, after hearing the parties, by the Court was in December 11, 1989. Under this Order, the Court requested the National Environmental Engineering Research Institute [NEERI] to study the situation in and around Bichri village and submit their report "as to the choice and scale of the available remedial alternatives". NEERI was requested to suggest both short- term and long-term measures required to combat the hazard already caused. Directions were also made for supply of drinking water to affected villages by the State of Rajasthan. The Rajasthan Pollution Control Board (RPCB) was directed to make available to the Court the Report it had prepared concerning the situation in Bichri village.
- The Court took note of the statements that manufacture of 'H' acid has completely stopped and there were no plans to resume its manufacture. The Court also took note of the petitioner's statement that though the manufacture of 'H' acid may have been stopped, a large quantity of highly dangerous effluent waste/sludge has accumulated in the area and that unless properly treated, stored and removed, it constituted serious danger to the environment. Directions were given to the R.P.C.B. to arrange for its transportation, treatment and safe storage according to the technically accepted procedures for disposal of chemical wastes of that kind. All reasonable expenses for the said operation were to be borne by Respondents.
- On February 17, 1992, the Court passed a fairly elaborate order observing that the industries were responsible for discharging the

hazardous industrial wastes. The immediate concern, said the Court, was the appropriate remedial action. Accordingly, the Court directed the Ministry of Environment and Forests, Government of India to depute its experts immediately to inspect the area to ascertain the existence and extent of gypsum-based and iron-based sludge, to suggest the handling and disposal procedures and to prescribe a package for its transportation and safe storage. The cost of such storage and transportation was to be recovered from the respondents.

- With a view to find out the connection between the wastes and sludge resulting from the production of 'H' acid and the pollution in the underground water, as per the direction of the court Environment experts of the Ministry of Environment and Forests were asked to find out whether the pollution in the well water was on account of the said sludge or not. Accordingly, analysis was conducted and the conclusion was that the report which is based upon their inspection of the area in September, 1993 revealed many other alarming features. i.e. M/s.HACL has a number of other industrial units which are operating within the same premises without valid consents from the RPCB. These plants are sulphuric acid (H<sub>2</sub>SO<sub>4</sub>), fertilizer (SSP) and vegetable oil extraction.

- The authorities [R.P.C.B.] passed orders closing down, in exercise of their powers under Section 33A of the Water Act, the operation of the Sulphuric Acid Plant and the solvent extraction plant including oil refinery of the fourth respondent with immediate effect.

### 3) Significance of the Judgment

An important off-shoot of the concept of sustainable development has been that of the 'Polluter Pays' Principle. It started as a principle in International Environmental Law where the polluting party pays for the damage done to the natural environment. This principle favours a curative approach which is concerned with repairing ecological

damage, and is not as bothered with the idea of fault. Once a person is seen to be guilty, such person is liable to compensate for such acts irrespective of the fact as to whether he was involved in the development process or not. Remedying the damaged environment is part of the process of Sustainable Development and as such polluter is liable to pay the cost to the individual sufferers as well as the cost of reversing the damaged ecology. **The judiciary in India recognized the Principle in the judgment delivered by the Supreme Court of India in Indian Council for Environmental Action v. UOI & Ors.** In this case a number of private companies operating as chemical companies were creating hazardous wastes in the soil and polluting the village area situated nearby without the required licenses. The Court ruled on the PIL that "Once the activity carried on is hazardous or inherently dangerous, the person carrying on such activity is liable to make good the loss caused to any other person by his activity irrespective of the fact whether he took reasonable care while carrying on his activity. The rule is premised upon the very nature of the activity carried on". Consequently, the polluting industries were held to be absolutely liable for the harm caused by them to villagers in the affected area, etc., and they were ordered to take all necessary measures to remove sludge and other pollutants lying in the affected areas.

**Source:** <http://www.indiankanoon.org/>;  
[http://supremecourtfindia.nic.in/scr/2011\\_v9\\_pi.pdf](http://supremecourtfindia.nic.in/scr/2011_v9_pi.pdf);  
**Environmental jurisprudence in India: A look at the initiatives of the Supreme Court of India and their success at meeting the needs of enviro-social justice:by D.Banerjee**

### III. Plant varieties and Farmers' Right Act 2001: a critical analysis

#### 1) Background

In order to fulfil WTO obligation, India enacted the Protection of Plant Varieties and Farmers' Rights Act (PPVFRA) in October, 2001 to protect the new plant varieties. The act covers all categories of plants except micro-organisms. The Government of India states following four reasons for introducing the PPVFRA:

- To protect the intellectual property associated with the development of plant varieties in fulfilment of an agreement under WTO.
- To recognize the rights of farmers arising from their contribution in conserving, improving and making available plant genetic resources to develop new plant varieties.
- To stimulate public and private investment in plant breeding to accelerate agricultural development.
- To ensure high quality seed and planting material to farmers by promoting the seed industry

#### 2) Main provisions of IPPVF, 2001

I. *Establishment of Authority to be known as the Protection of Plant Varieties and Farmers' Rights Authority (PPVFR) by the Central government.* It shall be the duty of the Authority to promote, by such measures as it thinks fit, the encouragement for the development of new varieties of plants and to protect the rights of the farmers and breeders. These measures include

- the registration of extant varieties subject to prescribed terms/conditions and manner

- developing characterization and documentation of varieties registered under this Act
- documentation, indexing and cataloguing of farmers' varieties
- compulsory cataloguing facilities for all varieties of plants
- ensuring that seeds of the varieties registered under this Act are available to the farmers and providing for compulsory licensing of such varieties if the breeder of such varieties or any other person entitled to produce such variety under this Act does not arrange for production and sale of the seed in the manner as may be prescribed
- collecting statistics with regard to plant varieties
- including the contribution of any person at any time in the evolution or development of any plant variety, in India or in any other country, for compilation and publication

II. A Registry called the *Plant Varieties Registry* will be established by the Central Government.

III. A Register called the *National Register of Plant Varieties* shall be kept at the head office of the Registry, wherein the names of all the registered plant varieties will be entered with the names and addresses of their respective breeders, the rights of such breeders in respect of the registered varieties, the particulars of the denomination of each registered variety, its seed or other propagating material along with specification of salient features thereof and such other matters as may be prescribed. The Register shall be kept under the control and management of the PPVFR Authority.

IV. Any person including the following can make an *application to the Registrar for*

*registration of any variety* - (a) of such genera and species as specified (b) which is an extant variety; or (c) which is a farmers' variety. *People who can make the application include:*

- any person claiming to be the breeder of the variety
- any successor of the breeder of the variety
- any person being the assignee of the breeder of the variety in respect of the rights to make such application
- any farmers or group of farmers or community of farmers claiming to be the breeder of the variety
- any person authorized in the prescribed manner by a person specified under clauses (a) to (d) to make application on his behalf
- any university or publicly funded agricultural institution claiming to be the breeder of the variety

V. A new variety shall be registered under this Act if it *conforms to the criteria of novelty, distinctiveness, uniformity and stability*. An extant variety shall be registered under this Act within a specified period if it conforms to such criteria of distinctiveness, uniformity and stability as shall be specified under the regulations.

VI. On receipt of an application, the Registrar may, after making such inquiry as he thinks fit with respect to the particulars contained in such application, *accept the application absolutely or subject to such conditions or limitations* as he deems fit.

VII. On the registration of the variety (other than an essentially derived variety), the Registrar will issue to the applicant a *certificate of registration* and send a copy thereof to the Authority for denomination of benefit sharing. The certificate of registration

issued shall be valid for nine years in the case of trees and vines and six years in the case of other crops and may reviewed and renewed for the remaining period on payment of fees. Subject to the other provisions of this Act, a certificate of registration for a variety issued under this Act shall confer an exclusive right on the breeder or his successor, his agent or licensee, to produce, sell, market, distribute, import or export the variety.

VIII. No registration of a variety shall be made under this Act in cases where prevention of commercial exploitation of *such variety is necessary to protect public order or public morality or human, animal and plant life and health or to avoid serious prejudice to the environment*.

#### IX. *Farmers' Rights*

- a farmer who has bred or developed a new variety shall be entitled for registration and other protection in like manner as a breeder of a variety under this Act;
- the farmers' variety shall be entitled for registration if the application contains a specified declaration
- a farmer who is engaged in the conservation of genetic resources of land races and wild relatives of economic plants and their improvement through selection and preservation shall be entitled in the prescribed manner for recognition and reward from the Gene Fund, provided that material so selected and preserved has been used as donors of genes in varieties registrable under this Act;
- A farmer shall be deemed to be entitled to save, use, sow, resow, exchange, share or sell his farm produce including seed of a variety protected under this Act in the same manner as he was entitled before the coming into force of this Act.

X. Plant varieties Protection Appellate Tribunal to be constituted to examine appeals from PVP Authority and Registrar.

XI. The Central Government shall constitute a Fund to be called the *National Gene Fund* and it shall be credited with (a) benefit sharing received in the prescribed manner from the breeder of a variety or an essentially derived variety registered under this Act, or propagating material of such variety or essentially derived variety (b) the annual fee payable to the Authority by way of royalty (c) compensation deposited in the Gene Fund (d) contribution from any national and international organization and other

and sustainable use (d) the expenditure of the scheme relating to benefit sharing framed under section 46.

### 3) India's Protection of Plant Varieties and Farmers' Rights over the years

- India's Protection of Plant Varieties and Farmers' Rights Act is the most advanced in terms of Farmers' Rights to save use, exchange and sell seed to date. It applies to all farmers in India, and to all crop species. So far, twelve crop species have been brought under the scope of the Act, and more species will follow. The practice of saving, using, exchanging and selling seeds may well exist elsewhere, but India is the only country so far where a law has been passed establishing and securing Farmers' Rights to this extent.

- India has been a central proponent of Farmers' Rights internationally, ever since the mid-1980s when Prof. M. S. Swaminathan chaired the Food and Agriculture Organisation Conference.

- India is a member of WTO and TRIPS and thus required to 'provide for the protection of plant varieties'. With its 2001 Act, the country complies with the provisions in the TRIPS Agreement on the protection of plant varieties (India's Department of Industrial Policy and Promotion).

- The National Gene Fund has been set up to be utilized for supporting conservation and sustainable use of genetic resources, including in situ and ex situ collections. The funds are also to be used for recognizing and rewarding the contributions of farmers engaged in the conservation and enhancement of agro-biodiversity. The sui generis system in India was to be one based on the concept of plant breeders' rights. Thus the Indian PVPFR Act appears to be an effective sui



sources. The Gene Fund will be applied for meeting (a) any amount to be paid by way of benefit sharing (b) compensation payable under sub-section (3) of section 41(c) the expenditure for supporting the conservation and sustainable use of genetic resources including *in-situ* and *ex-situ* collections and for strengthening the capability of the Panchayat in carrying out such conservation

generis system providing a balance between plant breeders' rights along with farmers' rights and researchers' rights.

- In India, M.S. Swaminathan Research Foundation has initiated, with the assistance of the government, a programme for capacity-building among farmers, grassroot democratic institutions, non-governmental and community organizations in order to enhance the implementation of Farmers' Rights as provided for in the Protection of Plant Varieties and Farmers' Rights Act of 2001.
- There are a total of 21 species at present that could be registered which are broadly divided into three categories – Pulses, Coarse Cereals and Oil seeds and there is another set of 22 species that has been sent for approval which includes the following-8 Vegetable Crops, 1 Fruit – Mango, 1 Flower Plant- Rose and 10 Oil Seed Crops.
- Of the 3 farmers' varieties registered in the country by the end of 2010, two (Tilak, Chandan and Hansraj) were in favour of farming community and 1 (Indrasan) in favour of an individual. By 2010 217 registrations took place in which 146 belong to cereals and 64 belong to pulses and only 7 varieties belong to commercial fibre crop cotton.

#### 4) Critical Analysis of IPPVF, 2001

- The multiplicity of legislation in India creates overlapping institutions. The objectives of policies with respect to different aspects of plant genetic resources and farmers' rights are often at variance with one another. The influence of international treaties like the Union for the Protection of New Varieties of Plants (UPOV), the International Treaty on Plant Genetic Resources for Food and Agriculture

(ITPGRFA), the Convention on Biodiversity, and the Trade Related Intellectual Property Rights

(TRIPs) Agreement are reflected in the form of various domestic laws such as the Protection of Plant Varieties and Farmers' Rights Act, 2007, the Biodiversity Act, 2002, the Seeds Bill, 2011, and others. The divergent objectives of these laws tend to create confusion in terms of policy in India.

- The Act covers all categories of plants, except micro-organisms.
- In India only three farmers' varieties have been registered till now. Two of these belong to farmers' communities, while one has been conferred on an individual farmer. Based on the information available from communication with these groups and the data available, no direct tangible commercial benefit from the sale of varieties had accrued to the farmer innovators while some innovators received monetary benefits in terms of awards from organisations such as the National Innovation Foundation and the Protection of Plant Authority, the expectation that the sale of such varieties will bring in larger commercial gains to the breeders remains unfulfilled.
- Confusion on criteria for registering farmers' varieties exists and whether DUS [Distinctness, Uniformity & Stability) test is required for these varieties persists. The PPVFR Authority needs to clarify this.
- This act does not provide protection to Plant variety that carries genetic use restriction technology (GURT), 'terminator gene'.
- Bureaucratic procedure for obtaining access may prohibit sharing of resources. This is a serious problem under India's new regime. The new Act establishes an Authority to administer the legislation. The emergence of a new bureaucratic organization to regulate ownership rights in areas that were in the

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\* Data available in open source only up to 2010

public domain creates possibilities for delays and hindrances in the free flow of resources between actors.

- As a first step towards implementation of the Act, the Government shall have to notify the crops in order to establish the system of listing of plant varieties for the purpose of registration. The criteria for selecting the crops could be the crops on which we are dependent for food and nutritional security, including major cereals, pulses, oilseeds, and vegetables and fruits crops. Thus a clear policy on access to germplasm in certain crops especially which affect livelihoods concerns need to be defined urgently.
- The public sector institutions in India transfer many seeds and varieties to farmers and this constitutes an important system of free exchange. Under the new regime, if the public sector finds it can earn revenue from the private sector for use of its varieties, it may rather charge for use of its varieties from the private sector rather than giving it away freely to farmers.
- India's Plant Variety and Farmer's Right Act is significant both in the domestic and international context. Developing nations, in seeking to achieve the important goal of recognizing farmer's rights, must not overlook the need for promoting exchange of agricultural resources.

Source:

<http://www.nalsarpro.org/PL/Projects/ModelProject1.pdf>; [http://www.farmersrights.org/bestpractices/success\\_seed\\_1.html](http://www.farmersrights.org/bestpractices/success_seed_1.html); <http://www.iprsonline.org/ictsd/docs/SahaiBridgesYear5N8Oct2001.pdf>

#### IV. Snapshots: Environment news

##### HC asks CS to ensure implementation of waste management norms

The High Court asked Chief Secretary to convene a meeting for ensuring implementation of solid waste management and environment protections norms at Achan dumping site in the outskirts of Srinagar. The reports submitted by Srinagar Municipal Corporation (SMC) and Economic Reconstruction Agency (ERA) are blaming each other for the mess at the dumping site. The Court had issued notices to Chief Executive Officer of ERA and Commissioner SMC asking them to 'show cause' why penalty for contravention of rules and court directions be not imposed against them for failure to manage Achan dumping site.

##### Heat Waves to be worse in the next 30 years

Summers will continue to get hotter over the next 30 years, triggering more frequent and severe heat waves across the globe, a new study has warned. Climate scientists and authors of the study, Dim Coumou of Germany's Potsdam Institute and Alexander Robinson of Spain's Universidad Complutense de Madrid, said the trend will persist even if there is no rise in carbon emissions. However, a reduction in carbon emissions can limit instances of extreme weather, the study said.

##### Uttar Pradesh Pollution Control Board told to shut down polluting units

The National Green Tribunal (NGT) has directed the Uttar Pradesh Pollution Control Board (UPPCB) to shut down all polluting industries in Noida based on the report of a high-level technical expert committee constituted by it. However, the industries have been provided a breather. NGT said if any polluting industries intend to operate after installation of proper pollution control devices, they may be allowed to operate after taking due permissions. UPPCB is directed to shut polluting industries and if any device like ETP is to be installed then the same to be

allowed to operate only if on basis of such report of due compliance.

### **Green Tribunal finds nine top clinics including AIIMS flouting waste disposal regulations**

National Green Tribunal's findings point out that nine government hospitals, including AIIMS and Safdarjung, are absolutely violating the biomedical waste disposal rules. Nearly 50 per cent of this waste goes untreated, or is left to be lifted along with normal garbage. Major government hospitals including Safdarjung and AIIMS do not have incinerators in place. All central and state authorities are directed to cooperate and provide all financial assistance that may be required to carry out the directions without any delay.

### **Anyone entitled to move Green panel on environmental issues**

In Environmental issues, any individual or any body of individuals can agitate as to the correctness of the study on environment and ecology made by the authority giving clearance to the project. The NGT ruling came on a plea by three environmentalists challenging the environment clearance given for deforestation of government forest land for construction of a dam for hydroelectric power in Uttarakhand.

### **Over 12k sq m of Western Ghats forest in private hands**

A study on the status and distribution of forests of a portion of the Western Ghats has revealed that more land is in private hands than the area under protected forests, but large tracts have degraded into scrub and wastelands. The study conducted in five districts of Maharashtra shows that over 12,000 sq km of forest land in the region is privately owned – more than double the 5,656 sq km of reserved forest land in the state.

### **Two solar energy firms in Madhya Pradesh out to cut carbon dioxide emissions**

Solar power generating firms in Madhya Pradesh are on a mission to reduce poisonous carbon dioxide through their on-going projects. The 25 MW grid connected solar photovoltaic (PV) power project by Welspun Energy Ltd (WEL), which is under implementation in Neemuch district of Madhya Pradesh, is expected to avoid emissions of 37,739 metric tonnes of carbon dioxide annually for a period of 21 years into earth's atmosphere.

### **Clean India campaign launched**

With an aim to attract more visitors to the country by improving cleanliness and hygiene at tourist destinations, the "Clean India" campaign at world heritage site Taj Mahal is launched. As a part of its corporate social responsibility, ONGC has taken up the maintenance of the Taj Mahal complex. This will include providing drinking water facilities, cleaning, providing uniform signage in and around the premises, placing of garbage bins, various repair/replacement work, management and garbage clearance, landscaping, tourist help-desks and deployment of volunteers for better management.

### **Mumbai, Kolkata to suffer huge damage from sea flooding by 2050: Study**

Mumbai and Kolkata are at risk of suffering several billions of dollars of damages by 2050 due to flooding even if they upgrade their protection, a study has warned. Mumbai would lose \$6.4 billion and Kolkata \$3.4 billion annually, the study published in Nature Climate Change estimated. In the worst case scenario, the world's 136 largest coastal cities could risk combined annual losses of \$1 trillion (750 billion euros) from floods by 2050 unless they drastically raise their defences, the study said.

### **Experts to study threat to lions in Kuno-Palpur**

The 12-member committee formed to look into the translocation of Asiatic lions from the Gir sanctuary in Gujarat to Kuno-Palpur in Madhya Pradesh will now study the threat perception to these big cats in the proposed habitat. A two-member expert committee has been formed to list out threats and to resolve issues as mentioned in the new guidelines issued by the International Union for Conservation of Nature (IUCN). The experts - Ravi Chellam and Y V Jhala - will prepare a list of studies that need to be carried out for shifting lions to Kuno-Palpur which is a tiger reserve too. This list will then be given to the 12-member translocation committee for further action.

### **New facility for waste awaits green nod**

The Chennai Corporation has informed the National Green Tribunal (NGT) that environmental safeguards and approvals for the proposed solid waste management facility at Kuthambakkam would be obtained before starting any construction activity on the identified land. The NGT Bench had granted an interim injunction restraining the civic body from setting up such a facility on grazing land near Kuthambakkam, on the city's outskirts. The NGT also said it would direct authorities to evolve a comprehensive plan to prevent illegal dumping of municipal waste across the State.

### **New policy to promote scientific mining of minerals**

The Cabinet gave nod to the new policy for scientific exploitation of minor minerals, short-term permits to private land owners, regulate use of machinery deployed for mining and providing relief to brick kilns in respect of environment clearance.

### **Expert Appraisal Committee not to clear ECs of mining leases within 10km of protected zones**

The Expert Appraisal Committee (EAC) will not clear the Environment Clearances (ECs) of mining leases lying within 10km of protected areas until the Union ministry of environment and forest (MoEF) decides on buffer zones or the mining leases have permission from the national wildlife board. EAC will examine the ECs of just four mining leases of the 54 leases that had been inspected by MoEF's Bangalore regional office to verify whether they fulfilled the EC conditions. EAC is also scrutinizing reports of all 139 operational and non-operational mines in Goa. The state has proposed a 1km ESZ around the WLSs and NPs.

### **Ford joins greenhouse gas reporting programme**

Voluntary reporting provides overall transparency regarding the company's CO<sub>2</sub> emissions and underscores the importance of the issue to Ford, which has a goal of reducing CO<sub>2</sub> emissions at its global facilities. As the first automaker to participate in the program, Ford's role will be to assist in the establishment of credible and verifiable greenhouse gas inventories.

### **Green panel clears Navi Mumbai airport**

Mumbai may finally get its new airport now as a panel of the Union ministry of environment and forests (MoEF) has given the 'green signal' for the multi-billion rupee project. Forest Advisory Committee directed that a specific plan be prepared by a reputed organisation like the Wildlife Institute of India (WII), Salim Ali Centre for Ornithology and Natural History (SACON) and the Bombay Natural History Society (BNHS) and its recommendations for mitigating the impact of the airport on avifauna. The committee also said that a monitoring committee be formed to monitor the

implementation of different conditions stipulated and submit a six-monthly report to the MoEF.

### **Pollution board asks thermal plants to stop spilling fly ash**

Wary of spilling of fly ash from thermal power plants to nearby water bodies and farm lands, the Orissa State Pollution Control Board (OSPCB) has asked all thermal power plants to follow at least five precautionary measures during monsoon. The OSPCB's directives came in the wake of fly ash pond leakage of Hindalco thermal power plant which led to damage of agricultural lands adjacent to the plant. It also contaminated water in the irrigation canal.

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

## **V. State in Focus: Uttar Pradesh**

Uttar Pradesh, the most populous state of India is endowed with natural wealth in abundance such as minerals, forests, flora and fauna. The state covers an area of 240,928 sq. km which constitutes 7.3 % of the total area of the country. Its population is 199.58 million. It is primarily an agrarian economy with more than 60% of the population depends on agriculture for their livelihood. The state has population density of 828 per sq. km. The forest area of the state is 16,583 sq. km. which is 12.88% of its geographical area. It has 23 wild life Sanctuaries. It has also been ranked 16<sup>th</sup> on the basis of various socio-economic parameters.

### **1) Environmental problems in UP**

#### **a) Increasing population & urbanization**

UP one of the major state of India comprising and is home to over 199.6 million including urban population of 4, 44, 70,455. The population density of the state is 828 per sq. km. and the growth rate is 16.16%. The

population of the state continues to grow at a much faster rate than the national rate. This increasing population is leading to urbanization which is resulting in the mushrooming of slums. As slums mainly occupy environmental sensitive sites such as sites near solid waste dumps, along the transportation lines and next to open drains and sewers, these pose major threats to wellbeing of urban population and sustainable development of urban centres. The slums are the 'dumping ground' for unwanted aspects of urban life and the recipients of the city's externalities; noxious industry, waste materials, and fragile, dangerous or polluted environment.

#### **b) Air pollution**

In most of the cities of state, manifold increase in the number of vehicles and poor traffic management have emerged as the leading source of pollution. The growing use of diesel is a major contributor to the growing air pollution levels. These emissions were leading to serious ailments and diseases like cancer. High levels of industrial activities and growing use of diesel generators are also causes of this problem. The quantity of fossil fuel burnt in boilers and emissions from industries are affecting the air content to a large extent. In the state major Air polluting industries are Sugar, Pulp & Paper, Foundries, Induction Furness and other Engineering units etc.

The Taj Mahal in Agra was declared as a UNESCO World Heritage Site in 1983. Owing to the increased levels of pollution around it the monument has developed a yellowish tinge and the main pollutant is sulphur dioxide released by the industries which later on reacts with rain water to give acid rain. Suspended Particulate Matter (SPM) is also one of the culprits. Industrial/Refinery emissions, brick-kilns, vehicular traffic and generator-sets are primarily responsible for polluting the ambient air around Taj Trapezium (TTZ).

Pollutants of the size of 10 micron was found in Ghaziabad, Allahabad, Kanpur and Bareilly, which was four times the acceptable size of particulates in urban areas. Nitrogen-di-oxide pollutant is found to be increasing dangerously in Meerut, Gorakhpur, Ghaziabad and Kanpur. It is the highest in Meerut and lowest in Rae Bareilly. Khurja and Ghaziabad have dangerous levels of sulphur-di-oxide mixed in the air.

### **c) Groundwater Depletion & water pollution**

There has been good amount of toxic levels of arsenic in the ground water. In Uttar Pradesh alone, Rs.1, 700 crore has been pumped into mitigation measures but most of them continue to remain dysfunctional. Excessive groundwater extraction causes lowering of water level, which further causes failure of the water structures, land subsidence and leads to flooding, subsurface waterlogging and eventually make the water polluted. In the state, the groundwater level has been declining due to heavy use of private and public hand pump sets and tube wells for domestic, agricultural, industrial and other uses in both urban and rural areas. It has been observed that the groundwater level has been declining up to strata-II (80-90 feet) in many urban areas of the state and it has crossed the strata-I (40-50 feet) in rural areas. The depletion of groundwater further enhances the economic and environmental problems to the society. With the expansion of irrigated area and increased use of fertilisers and pesticides groundwater gets polluted ultimately causes health hazard. There is widespread disparity in the use of groundwater exploitation over regions/districts as well as major river basins in the state. In the state major water polluting industries are Distillery, Sugar, Pulp & Paper, Tannery, Slaughter Houses and Electroplating units etc.

There are large quantities of industrial and toxic waste from chemical, paper and other factories thrown in rivers resulting rivers in

western Uttar Pradesh named Yamuna, Hindon, Krishni, Kali East, Kali West and Dhamola becoming heavily polluted. The characteristics of the water i.e. turbidity, dissolved oxygen, temperature and degree of acidity (pH value) are alarming.

### **d) Threat to Biodiversity**

The diverse weather and physio-geographic features contribute to rich faunal and floral biological diversity in UP. Forests, wetlands, riverine and other ecosystems and their biodiversity provide multiple ecosystem benefits. These ecosystems also provide direct economic benefits and livelihood opportunities to the poor people. Hence it causes threats to rich biodiversity of state. UP wildlife officials indicate that as the tiger population of the region had fallen. There is increased poaching of leopards. Another perennial problem is poisoning of leopards by villagers in the neighbouring forest region in order to protect their cattle from leopard attacks. Protected areas face severe pressure from increasing human and livestock populations both within and living around them. They are also under pressure from competing land use demand from agriculture and economic activities. Many PAs do not have proper management plans and rights of local communities in many PAs are yet to be resolved.

Pilibhit forests are spread over an area of 700 sq km and waiting to be declared as tiger reserve as they have a large number of big cats, including breeding females, besides a healthy prey-base. Presence of rare species like the world's smallest cat and four-horned antelope is found in the state.

The bird life of Uttar Pradesh is rich and varied. More than 500 species are found including some extremely rare ones. The Terai region of Uttar Pradesh is a very important ecosystem for many threatened species of tall wet grasslands and swamps and is the topmost priority for conservation. It supports many

threatened bird species such as the Swamp Francolin, *Francolinus gularis* and Bengal Florican *Houbaropsis bengalensis*. It occurs in pockets in protected areas of India. Bird Life International (2001) has listed 52 Near Threatened bird species of India, 14 of which occur in Uttar Pradesh. These are the threatened and endangered bird species i.e. Slender-billed Vulture, White-headed Duck, Bengal Florican, Pallas's Fish-Eagle, Swamp Francolin, Sarus Crane, Bristled Grass-Warbler and Finn's Weaver. Endangered species in plants include *Crateva religiosa* (Barna), *Cleisanthus collinus*, *Garcinia morella* (Tamal) etc. Several species of wildlife have become extinct in the state. Among them are the lion from the Gangetic plain and the rhinoceros from the terai. The fate of many species is uncertain the black buck, serow, musk deer, swamp deer, bustard, pink-headed duck, chir and mural pheasants and four horned antelope.

#### **e) Forest Loss and Degradation**

UP has just over 9.06% percent of land area under forests which leads to per capita forest & tree cover of 0.01 ha. Forest Survey of India (FSI) reveals that the green cover is 21,720 sq km. Green cover, in the last five years has gone down from 9.26% to 9.01%. The districts of Jaunpur, Ghazipur and Ballia have no forest land while 31 other district have less forest area. Intensive agricultural practices, increasing demand for fuel wood, fodder, non-timber forest product (NTFP) and conversion of forest land for development purposed lead to forest loss and habitat fragmentation and degradation. The consequent result of the combined pressure of population and livestock has declined the forest land area. The problem of land degradation is more severe at the regional and district level. Annually about 10,000 cases of illicit tree felling and about one million hectares of forest fire damage are recorded in the state. Biodiversity

resources are illegally exploited due to high demand in the urban and international markets. According to NRSA, Western and Central regions are mostly affected regions in the state. Excessive ground water exploitation is causing changes in forest. Most of these wetlands are under tremendous pressures from fishing, overgrazing, cultivation, drainage and pollution.

#### **f) Pollution in Ganga river**

The Ganga River is now left with only 15% of its original water, while the remaining 85% comprises sewage and sludge. UP is a major contributor of pollutants to this holy river. The state alone discharges 1,800 million litres per day (MLD) waste (out of 4,030 total MLD) into the river daily. Another alarming situation is that the river stretch beyond Kanpur hardly has any water available for six months in a year. The Ganga water has shown excess content of human excreta. The water extracted in Kanpur finds its way back into the river as sewage and effluents from industries.

#### **g) Electronic waste**

Uttar Pradesh ranks fourth in generating e-waste all over India. The state has become a dumping ground for electronic waste generated by users of mobile phones, laptops, DVD players, TVs and many other gadgets. With no proper mechanism for disposal of e-waste in the state, the discarded electronic goods pose a threat to the environment as they are channelized to unauthorised units who fail to dispose of them safely. The study of CPCB estimated that about half the circuit boards used in appliances in India end up in Moradabad. The e-waste poisons air, water and soil as well as threatens the life of those directly involved in the recycling process. The chemicals inside the electrical appliances pass through the ground and

contaminate the ground water. Besides, many times people throw e-waste like batteries and CDs along with eatables in garbage dump. It is consumed by the animals which affect their health.

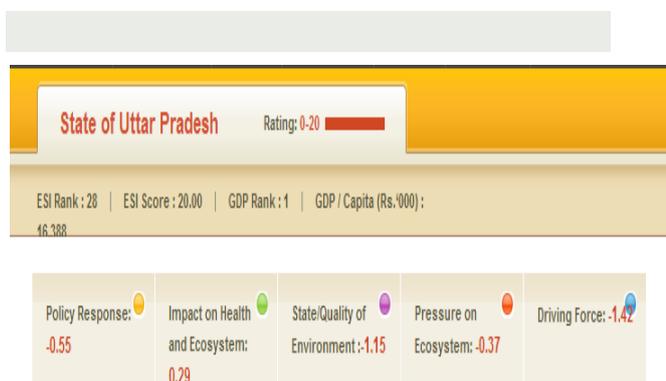
## 2) Laws & Policies

The principal laws on environment in force in Uttar Pradesh State are given below-

- The water (prevention & control of pollution) act, 1974
- The air (prevention & control of pollution) act, 1981
- The Environment (protection) act, 1986
- Environment impact assessment rules, 1994
- The Public Liability insurance act, 1997
- Biomedical Waste Rules 1998
- Hazardous chemicals (Manufacture, Storage & Import of hazardous chemicals) Rules, 1989

## 3) Environment Sustainability Index (ESI) for Uttar Pradesh -

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. Uttar Pradesh ranks on 28 out of 28.



**Source:** <http://www.greenindiastandards.com/uttar-pradesh.php?stateid=28>

## VI. Audit Report: Wild life and forest of Rajasthan)

### 1) Background

Forest are among the most diverse and widespread ecosystem on the earth. They support biodiversity like animals, plants, microorganisms etc. The forests of Rajasthan are rich in flora and fauna with about 3000 known species of plants and animals and they cover 4.7% of total geographical area. Land use patterns have been showing a decrease in forest land cover and increase in desert land stated in the Rajasthan State Environment Policy, 2010. Rajasthan has a protected area network of 9620.04 sq. km. around, comprising of three National Parks, Wildlife Sanctuaries and six conservation reserves.

### 2) Audit Objectives and Criteria

The audit objectives were-

- To check the measures taken to protect forests and wildlife through the protected area network.
  - To check measures taken to protect forests and wildlife outside the protected area network.
  - To check compliance to rules and regulations in cases of diversion of forests land for development activities.
  - To check utilization of funds for protection of forests and wildlife economically and effectively.
  - To check measures taken for protection of traditional ecological knowledge and biodiversity.
- Audit criteria were derived from-
- Wildlife Protection Act (WPA), 1972
  - Forest Conservation Act (FCA), 1980;

- Rajasthan State Environment Policy, 2010;
- Rajasthan State Forest Policy, 2010;
- National Wildlife Action Plan (NWAP),(2002-16)
- Biological Diversity Act (BDA), 2002 etc.

### 3) Audit Findings

- The final notification of Sariska as National Park has not been issued as of December 2012. Tiger Project, Sariska could not be declared as a National Park.
- State Government had declared only six Conservation Reserves so far but no Community Reserve has been declared (March 2012). A scientific approach/plan for conservation and protection of black buck, chinkaras and other species which are endemic to this region, could not be made.
- Of the 33 closed areas, only two were declared as Conservation Reserves and 31 areas comprising 14370.18 ha of land, have not been declared as Conservation/Community Reserves even after a lapse of eight and a half years.
- In view of this the creation of Critical Tiger Habitat (CTH) in Ranthambhor, Tiger Project was not in conformity with the Act *ibid*.
- It was observed that the State Government has approved a proposal (January 2012) to connect Ranthambhore Tiger Project, Kailadevi Wildlife Sanctuary, Sawai Mansingh WS, Ramgarh Vishdhari Wildlife Sanctuary, Jawahar Sagar Wildlife Sanctuary and Mukundra hills National Park as corridor namely "Rajeev Gandhi Biosphere Reserve Corridor", a management unit to ensure safe roaming of wild animals like tigers.
- It was observed that State Government sent Gol, a recovery plan of 34.35 crore for development of core area, constructing enclosures, pasture and infrastructure developments for GIB (The Great Indian

Bustard, an endangered bird, state bird of Rajasthan ), approval of which was awaited (May 2012). Gol, however, released f 1.05 crore to the State Government during 2008-09 to 2011-12 Audit further observed that though funds were spent on these activities, population of GIB had decreased (73 in 2008 and 52 in 2011) due to ineffective measures/plans for protection/conservation of GIB.

- Out of 3,162 sq km area notified by the State Government for DNP, Jaisalmer Wildlife Sanctuary, only 50.76 sq km area, (two per cent of the WS area) was actually forest land and the rest was private, Government and revenue land. Besides, 73 villages were situated within the Wildlife Sanctuary area resulting in biotic pressure, habitat interference and fragmented habitats.
- State Highway- 13 and SH-29A passes through core area of Tiger Project Sariska, Hon'ble Supreme Court directed (May 2009) to stop movement of commercial vehicles on SH-13 and instead pass the traffic through the by-pass road and close SH-29A to traffic. Death of five wild animals due to accidents was also recorded from 2009 to 2011.
- The Policy states that Sloth Bear population in South Western parts of Aravallis needs to be protected by declaring the area as a sanctuary, especially Jaswantpura hills in Jalore district. It was observed that no WS was declared for protection of Sloth Bear. Only a Conservation Reserve namely "Sundha Mata" was declared (July 2010) by the State Government at forest block Jaswantpura in Jalore district. The State Government had not initiated any planning/scheme for protection and conservation of Sloth Bear in this area as of March 2012.
- An amendment to WPA, 1972 in 2006 provided for setting up of Wildlife Crime Control Bureau (WCCB) at the Central level, which would coordinate with the State Governments in the area of wildlife crimes.

State Government in its Policy proposed establishment of State Wildlife Crime Bureau (SWCB) to tackle wildlife related crimes, intelligence gathering and speedy investigation of wildlife crimes. It is observed that the State Government has not set up SWCB as of November 2012. Failure to setup SWCB impacted intelligence gathering and speedy investigation of wildlife crimes which led to huge pendency of wildlife crime cases.

#### 4) Recommendations

- The State Government should strengthen the mechanism to prevent illegal mining/encroachment on forest land and the internal controls to check cases of diversion of forest land to non-forest uses. For effective deterrence and punishment of wildlife offences, the State Government should set up State Wildlife Crime Bureau as soon as possible.
- Programmes should be initiated for protection of habitats of critically endangered species in Rajasthan like Great Indian Bustard, Gharial, Sloth Bear etc. so that, these vulnerable species do not get extinct in Rajasthan.
- The State Government should take effective steps to build up data base for biological resources and traditional knowledge and ensure protection of rights including intellectual property rights over biological resources and associated knowledge.
- The State Government should utilize the receipts of eco-development surcharge collected for eco-development activities in National Parks and Sanctuaries.

**Source:**

[http://saiindia.gov.in/english/home/Our\\_Products/Audit\\_Report/Government\\_Wise/state\\_audit/recent\\_reports/Rajasthan/2013/Report\\_1/Chapter%202.pdf](http://saiindia.gov.in/english/home/Our_Products/Audit_Report/Government_Wise/state_audit/recent_reports/Rajasthan/2013/Report_1/Chapter%202.pdf)

## VII. International Audit Report: Botswana: Protection of Forests from Wildfires

### 1) Background and purpose of the audit

In Botswana, Forest does not include such land which is predominantly under agricultural or urban land use rather it includes the types of vegetation cover which is mainly shrub-like vegetation, sparse savanna, grassland, open woodlands and dry deciduous forests. The country has a total land area of 582 000 km<sup>2</sup> of which 60% is forests and rangelands. Furthermore, out of the 60%, only 1% is made up of forest reserves in Chobe District. Forests are critical for human life. Forests are in threat for these reasons i.e. forest fires, illegal logging, revenue loss, livelihood loss, decreased carbon storage and shortage of raw materials for industry. Botswana forests, not being an exception, are also threatened by the risks of forest fires, illegal logging/harvesting of forest products, biodiversity and ecosystem loss. However, wild land fire continues to be a major threat to Botswana forests.

Around 46 % of Botswana (or 28 Million hectares (Mha)) has burnt many areas repeatedly during the last 10 years. Most of these fires have an anthropogenic origin. Taking into consideration the negative impacts of wildfires, it is imperative that forests are protected from fires to; prevent injuries or loss of human life, minimise property damage and protect other natural resources. This calls for a systematic approach to manage wildfires in order to reduce their negative consequences.

In recognition of the national significance of natural resource management including forests, the Government of Botswana (through Ministry of Environment, Wildlife and Tourism) established the Department of

Forestry and Range Resources (DFRR). The Department is mandated to conserve and manage the country's forests, range resources, other natural resources and other associated ecosystems.

## 2) Objectives of the Audit

- To assess whether DFRR's administrative systems were effective to ensure efficient protection of forests from wild land fires.
- To make follow-up on whether DFRR had implemented the recommendations of the previous Performance Audit Report (2008) on the Management of Wild land fires.

## 3) Main findings and recommendations

1. It was observed during the audit that the Department did not carry out some fire analysis as it had no imperative fire information concerning fuel characteristics and causes of fire. Despite the assertions that 90 % of fires in Botswana are anthropogenic (human caused) the interview and document review revealed that the causes of the fires are almost not known. The highest number of the unknowns was due to the fact that the Department had not investigated fire incidences nor carried out detailed researches to determine causes of fire in the country. The OAG recommends that

- All fire incidences are investigated so that the DFRR can have complete understanding of the causes of fires in the country as this may assist the Department to decide on which fire preventive measures/ mechanisms to deploy during planning.
- DFRR Officers and other stakeholders are equipped with fire investigation skills to be able to investigate the fire causes.

2. During the audit it was observed that the Herbage Preservation Act was not adequately implemented or enforced. There had been reluctance on the part of Stakeholders to use the existing legislation to enforce the law in protecting forests and preventing bush and

wild land fires. The DFRR in collaboration with the Law Enforcement Agency (Botswana Police) had not evoked some of the clauses of the Act, which prohibited illegal acts in the forest areas. The OAG recommends that

- The DFRR in collaboration with Agricultural Resource Board (ARB) should involve District Herbage Preservation Committees and other Law Enforcement Agencies (Botswana Police) to ensure adequate enforcement of the legislation and evoke such clauses that prohibit burning of vegetation under specific fire danger index.
- DFRR should improve their approach to law enforcement by committing resources to monitoring and enforcing compliance & using the full range of powers the Parliament has provided where circumstances demand.

3. During the audit it was found that the DFRR had not put in place any initiatives to manage fuel in the forests to minimise the risk of fire ignition and fire intensity. The OAG recommends that:

- All fire incidences be investigated so that the DFRR can have complete understanding of the causes of fires in the country as this may assist the Department to decide on which fire preventive measures/ mechanisms to deploy during planning.
- DFRR Officers and other stakeholders be equipped with fire investigation skills to be able to investigate the fire causes.

4. The public still burnt the vegetation without permission as enshrined in the Act. According to documents reviewed and interviews with DFRR Management and Herbage Preservation Committee Chairpersons acquisition of burning permits by the public was very minimal taking into consideration the number of fire outbreaks per year. The OAG recommends that

- The DFRR should decentralise the issuance of burning permits to proximate areas where the community could easily access them and also

intensify the measures in place to sensitise the community on the use and importance of burning permits.

- Fire towers need to be equipped with appropriate accessories and manned with skilled personnel, to facilitate timely fire detection.

Source: [http://www.environmental-auditing.org/Portals/0/AuditFiles/Botswana\\_f\\_eng\\_Protection-of-Forests-from-Wildland-Fires.pdf](http://www.environmental-auditing.org/Portals/0/AuditFiles/Botswana_f_eng_Protection-of-Forests-from-Wildland-Fires.pdf)