FOREIGN ENVIRONMENTAL POLICY PURSUED BY INDIA

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Abstract

The Ministry of Environment and Forest (MOEF) along with MEA (Ministry of External Affair) has enjoyed considerable autonomy in policy making. The MOEF is the nodal agency of Indian Government for most issues relating to the environment and for matters relating to the UNEP (United Nations Environment Programme). For example as a consequence of Stockholm Declaration, 1972, in 1972, February, a National Committee on Environmental Planning and Coordination (NCEPC) was established within the Department of Science and Technology (DST). The MEA lacks expertise on environmental issues. It does not have an environmental cell, and is forced to rely for scientific and other policy inputs on the MOEF. Many policies are recognized by MOEF, few more relevant are Ecomark or ecolabelling scheme, Environment Audit, Environment Impact Assessment, Carbon Trading, Green marketing, National Environmental awards, National Air Ambient Quality Standards.

Introduction

The Ministry of Environment and Forest and MEA (Ministry of External Affair) has enjoyed considerable autonomy in policy making. The MOEF is the nodal agency of Indian Government for most issues relating to the environment and for matters relating to the UNEP.[2]For issues which have a strong bearing on foreign policy or concern the UN system (except for UNEP), the MEA is, by convention, the nodal agency. As a consequence of Stockholm Declaration, 1972, in 1972, February, a National Committee on Environmental Planning and Coordination (NCEPC) was established within the Department of Science and Technology (DST).In 1980, a Committee was constituted under the chairmanship of N.D. Tiwari (Deputy Chairman of Planning

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[2] MOEF, Annual Report 1991-92 (new Delhi: MOEF, 1992), pp. 5, 92.

Commission then). The Committee in its report recommended to a Department of Environment (DOE). According DOE was established on 1st November 1980. In 985, the MOEF[3] was created through the expansion of the DOE.[4] The International Cooperation Division of the MOEF handles foreign environmental policy. The MEA lacks expertise on environmental issues. It does not have an environmental cell, and is forced to rely for scientific and other policy inputs on the MOEF.[5] Many policies are recognized by MOEF, few more relevant are discussed in the heading.

Environment Audit: It is an important management tool comprising a systematic, documented, periodic and objective evaluation/assessment of how well the management systems are performing with the aim of; prevention of over uses of resources and reduction in generation of wastes; assessment of compliance of regulatory requirements; revealing the areas of deviation from management's environment; disclosure of data on waste generation; waste minimization; arrangements a off site disposal; and revealing of data on consumption of water and raw materials.; and identification of areas where improvement is required; adoption of clean

[3] The need for comprehensive and integrated view of environmental protection and improvement with emphasis on the sustainable use of natural resources for development was being felt by the Government from early seventies. A National Committee on Environmental Planning & Co-ordination (NCEPC) was, therefore, set up in 1972 to advice the Government on environmental problems and suggest solutions after consultation with experts and the concerned Ministries/Departments. However, the aspects of environmental protection did not receive the desired attention. The Government, therefore, constituted a High Level Committee under the Chairmanship of Shri N.D. Tiwari , Deputy Chairman , Planning Commission, to recommend legislative measures and an administrative machinery for ensuring environmental protection . The Committee submitted its report to the Prime Minister on September 15, 1980. One of the recommendations of the Committee related to setting up of a Department of Environment (DOE) to provide explicit recognition to the pivotal role that environmental Conservation must play for sustainable national development. Accepting this recommendation, the Government of India constituted the Department of Environment (DOE) with effect from November 1, 1980 vide Presidential Notification No.CD-1016/80. In accordance with the Allocation of Business Rules, the DOE was the focal point within the Government of India for subjects relating to environment and ecology. The work pertaining to the Botanical Survey of India, Zoological Survey of India and National Museum of Natural History being looked after by the Department of Science & Technology (DST) , was transferred to the DOE . The Scientific and technical staff from the Environment Division of the DST formed the nucleus of the new Department. This Department became part of the new Ministry of Environment & Forests constituted by Presidential Notification No.74/2/1/85-Cab. Dated 4th January, 1985, which consisted of two Departments, viz. Department of Environment and Department of Forests and Wildlife. The latter Department was constituted by transferring to it work relating to Forestry from the erstwhile Department of Agriculture and Co-operation and work relating to Wildlife from the erstwhile Department of 2 Environment. In September, 1985, the two Departments were merged to constitute a Single Department of Environment, Forests & Wildlife. In July, 1991 there was an amendment in the Government of India (Allocation of Business) Rules, 1991 whereby the name of the Department of Environment Forests & Wildlife was substituted with Ministry of Environment and Forests. (http://moef.nic.in/divisions/administration/induction.pdf)

[4] Rajan, Mukund Govind(1997), *Global Environmental Politics*, Delhi: Oxford University Press, pp.12, 20.

[5] Ibid, p. 23.

technology for pollution prevention; recycling and utilization;[6]. It is a response to such challenge which is an attempt to provide information on the environmental performance of an organization, and thus include environmental issues in the decision making process.[7] Environmental auditing originated in the United States in the 1970s as a way of checking whether a company was complying with a multitude of new environmental laws and regulations. In India it started in the year 1992 with the Environment (Protection) Rules as a compulsory norm by the occupier and in the name of 'audit report' and subsequently substituted with the term 'environmental statement' in the year 1993.

Ecomark or ecolabelling scheme: It is a scheme first initiated by Germany in 1978 and later many other countries in the world tried as a measure to protect and improve the quality of environment.[8] The Ministry of Environment and Forests instituted a scheme on labeling environment friendly products (begin with industrial products soaps and detergents).[9]Household and other consumer products can be accredited and labeled as satisfying environmental criteria, in addition to quality requirements laid down by the Bureau of Indian Standards for the product. The label is ECOMARK. The scheme was meant to provide incentive to the manufacturers, to assist consumers to become environmentally responsible, and to improve the quality of environment leading to sustainable management of resources. Hence, it includes possibility for recycling, bio-degradability (product packing material), saving of non-renewable energy and natural resources, and reduction of adverse environmental impact.[10] The product may be accompanied by detailed instructions for proper use so as to maximize product performance and minimize wastage.

Environment Impact Assessment (EIA): The United States of America was the first country to assign 'mandatory status' to EIA through, the National Environmental Protection Act, 1969 (NEPA). Canada, Australia, The Netherlands, and Japan have adopted the EIA have adopted by

[6] Leelakrishnan ,P (2005), *Environmental Law in India*, New Delhi: Lexis Nexis Butterworths p 178.
[7] Bhardwaj, R.K(2009), *Environmental Reporting and Auditing*, Jaipur: Oxford Book Company, p.193.
[8] http://www.skirec.com/images/download/apjrbm/2.8%20ANUPAMA%20ANALYSING%20THE%20FEASIBILITY%20OF%20GREEN%20MARKETING...pdf
[9] Notification GSR 831 dated 20 February 1991.
[10] Leelakrishnan note 5 , p.181.

suitably altering their laws in 1973. The European Community issued a Directive making environmental assessments mandatory for certain categories of projects in its jurisdiction.[11]

In India first notification was brought into effect in 1994.[12]This Notification brought certain changes for the first time: if any new industry (listed in Schedule) to start, the Central Government permission is needed; existing industry should get 'environmental clearance' and in case of need to expand and modernize, permission from the Central Government is required; project proponent application shall be accompanied with EIA report, EMP(Expand, modernize and permission) and details of public hearing;[13] notification had certain exception regarding 'public hearing'[14] without any justification or reason for such exception. It is clear arbitrary, unscientific and without a logical based act of MOEF. Further 'pipeline projects' are not needed to be submitted an EIA. This notification created a special category of projects known as 'site specific projects'[15] , extremely sensitive from the stand point of the environment. Hence, the Central Government after proper scrutiny of the documents[16] permits to start the project. Impact Assessment Agency(IAA) within the Central Government (MOEF) established to evaluate with assistance of 'experts' if required, visit the site or a factory to have a closer look at the ground realities, and assess viability of the project. IAA had to make recommendations[17] within 120 days (90 days for evaluation and 30 days for conveying the information to the project proponent) and twice in a year, the duty of the project proponent to submit report to IAA. There was a provision to constitute Expert Committee for Environmental Impact Assessment. This notification was amended twelve times,[18] it is clear indication of dilution. Finally, in 2006 the Central Government has introduced a new notification called as 're-engineering' process of

[11] Nandimath, O.V(2009), *Handbook of Environmental Decision Making in India an EIA Model*, New Delhi: Oxford University Press, p.27.
[12] S.O. 60 (E), 27th January, 1994.
[13] Ibid, in accordance with Schedule IV of the EIA Notification.
[14] The exceptions are small scale industries located in notified industrial areas; or areas earmarked for industries under the jurisdiction of industrial development authorities, widening and strengthening of highways, mining projects with lease areas up to 25 hectares, industrial units located in SEZs, and modernization of existing irrigation projects.
[15] Mining, pit head thermal power stations, hydro power, major irrigations including flood control system, ports and harbours (excluding minor ports) and prospecting and exploration of major minerals in area above 500 hectares.
[16] Central Government minimum 30 days after submission of the details by the proponent to verify and grant permission.
[17] Based data/information provided by the project proponent, information collected in the visit, and public consultations.
[18] Because of dynamism lf law and politics.

environmental impact assessment.[19] Unlike earlier notification, it decentralized certain regulatory power to the states or union territories[20] and made compulsory environmental clearance for all categories of projects. It even changed earlier system of screening classifying projects into two categories 'A' [21]and 'B'[22]. It should be stated with added emphasis here that many Environmental Impact Assessment laws simply require mitigation measures to be discussed in the Environmental Impact Assessment documentation, without clear provisions for monitoring and evaluation of the implementation of such measures, in most of the world systems including India. Finally although late, mechanisms are being worked out to integrate post project monitoring into the mainstream of the process.[23]

Carbon Trading: Recognition of carbon trading is an issue of concern to control global warming. The pollution trading mechanisms that forms the core of the Kyoto Protocol was essentially 'made in the USA" as it was proposed by North American economists in the 1960s, put into practice in US markets for lead, nitrogen oxide, sulphur dioxide and other pollutants beginning in the 1970s. Under the US Clean Air Act Amendments of 1990, a national sulphur dioxide trading progrmme was set up to save power plants money as well as to encourage states to use emissions trading in the effort to control acid rain and reduce urban smog.[24]

CO_2 emissions are a necessary part of growth and development and, simultaneously, the cause of global warming owing to the continued dependence on fossil fuels. The fair and equitable use of the global atmospheric commons imposes a common responsibility on all nations.[25]Carbon Trading refers to trade in greenhouse gas emission targets by countries or their companies, in

[19] After reviewing the existing restrictions imposed on undertaking projects or activities and the procedures and practices of environmental clearance; due consultations with various stakeholders(not all) such s central ministries, state governments or the union territory administrations, industry associations, institutions and voluntary organizations.
[20] SEIAA (State/Union Territory Environmental Impact Assessment Authority.
[21] Central Government gives sanction.
[22] SEIAA give with general condition (public hearing) and 'B' includes B1, B2 categories also.
[23] Nandimath, note 10, p. 147.
[24] Kumar, Swatanter (2010), "Carbon Trading", in Special Issue on Climate Change and Environmental Law, Journal of the Indian law Institute, 52:319-332.
[25] Ibid, p.319.

order fulfill commitments under environmental treaties such as the UNFCCC through the regulatory carbon market such as the European Union Emissions Trading System.[26]

India comes under the third category of signatories to United Nations Conference on Climate Change. India signed and ratified the Protocol in August, 2002 and has emerged as a world leader in reduction of greenhouse gases by adopting Clean Development Mechanisms (CDMs) in the past few years. According to Report on National Action Plan for operationalising Clean Development Mechanism(CDM) by Planning Commission, Govt. of India, the total CO2-equivalent emissions in 1990 were 10, 01, 352 Gg(Gigagrams), which was approximately 3% of global emissions. If India can capture a 10% share of the global CDM market, annual CER revenues to the country could range from US$ 10 million to 300 million (assuming that CDM is used to meet 10-50% of the global demand for GHG emission reduction of roughly 1 billion tonnes CO2 , and prices range from US$ 3.5-5.5 per tonne of CO2). As the deadline for meeting the Kyoto Protocol targets draws nearer, prices can be expected to rise, as countries/companies save carbon credits to meet strict targets in the future. India is establishing a full-fledged system in operationalising CDM, through the Designated National Authority (DNA).Other than Industries and transportation, the major sources of GHG's emission in India are: Paddy fields[27]; enteric fermentation from cattle and buffaloes; Municipal Solid Waste.[28]

The Indian market is extremely receptive to Clean Development Mechanism (CDM). Having cornered more than half of the global total in tradable certified emission reduction (CERs), India's dominance in carbon trading under the clean development mechanism (CDM) of the UNFCCC is beginning to influence business dynamics in the country. India Inc pocketed Rs 1,500 crores in the year 2005 just by selling carbon credits to developed-country clients. Various projects would create up to 306 million tradable CERs. Analysts claim if more companies absorb clean technologies, total CERs with India could touch 500 million. Of the 391 projects sanctioned, the UNFCCC has registered 114 from India, the highest for any country. India's average annual CERs stand at 12.6% or 11.5 million. Hence, MSW dumping grounds

[26] European Union Emissions Trading System, which came into effect on 1. Jan.2005 is the first regulatory commercial market for certified emission reductions. The EU voluntarily imposed stricter commitments than those under Kyoto, namely reduction of CHG emissions to at least 20% below 1990 levels by 2020. Other regulatory carbon markets include Norway's Emissions Trading System and the US' Regional Greenhouse Gas Initiative.

[27] the emissions from the paddy fields can be reduced through special irrigation strategy and appropriate choice of cultivars; whereas enteric fermentation emission can also be reduced through proper feed management

[28] http://www.nswai.com/images/newsletters/feb2007.pdf

can be a huge prospect for CDM projects in India. These types of projects would not only be beneficial for the Government bodies and stakeholders but also for general public.[29]

In India, Gujarat was the first state to sign a memorandum of understanding with the World Bank 2007, to launch a campaign to reduce emission from the state. According to the MOEF, companies in India have already earned $ 7.9 million through carbon credit trading, despite the recent economic meltdown. India has been predicted to 'move quickly 'in the future to capture a large part of the carbon credit market due to its relatively low abatement and transaction costs.[30] However, environmental groups are raising concerns about the legitimacy of carbon credit practices and verification problems in the credit certification process.[31]

Green marketing

The term Green Marketing came into prominence in the late 1980s and early 1990s. The American Marketing Association (AMA) held the first workshop on "Ecological Marketing" in 1975. The proceedings of this workshop resulted in one of the first books on green marketing entitled "Ecological Marketing".[32] According to the American Marketing Association, green marketing is the marketing of products that are presumed to be environmentally safe. Thus green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising.[33]

Since then Green/Eco or Environmental issues have risen above being a business issue but have become domestic and political as well. The essential spirit of Green marketing is to use the resources of our environment to a degree that it fullfills "the needs of the present without compromising the ability of future generations to meet their own need". When it comes to businesses practicing Green Marketing there are some different approaches. Wikipedia states that terms like Phosphate Free, Recyclable, Refillable, Ozone Friendly, and Environmentally Friendly are all immediately identifiable to consumers as Green marketing terms but there is a lot

[29] Ibid.
[30] www.indiamicrofinance.com/wp-content/uploads/2009/.../carbon-credits.pdf.
[31] Kumar, Swatanter (2010), "Carbon Trading", in Special Issue on Climate Change and Environmental Law, Journal of the Indian law Institute, 52:319-332.

[32] http://en.wikipedia.org/wiki/Green_marketing
[33] http://www.nitttrbhopal.org/journal/volume3/Pavan%20%20Mishra%20and%20Ms.%20Payal%20Sharma.pdf

more to it than that. Many of the domestic products we use in the house and garden are becoming less and less harmful to the earth and the atmosphere and businesses are engaging in Green Marketing to promote them.

Firms in India have realized that consumers prefer products that do not harm the natural environment as also the human health. Five basic reasons are there for adoption of green marketing opportunities for competitive advantage, competitive pressure, cost or profit issues, government pressure and corporate social responsibility. It may pursue these as follows: A Firm develops a technology for reducing waste and sells it to other firms; a waste recycling or removal industry develops.[34] The following instances undertaken by the public and private sectors in itself is a classic proof to combat the greenhouse gases.

1. Best Green IT Project: State Bank of India: Green IT@SBI[35]
2. Lead Free Paints from Kansai Nerolac[36]

3: Indian Oil's Green Agenda Green Initiatives[37]

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[34] http://www.nitttrbhopal.org/journal/volume3/Pavan%20%20Mishra%20and%20Ms.%20Payal%20Sharma.pdf

[35] By using eco and power friendly equipment in its 10,000 new ATMs, the banking giant has not only saved power costs and earned carbon credits, but also set the right example for others to follow.SBI is also entered into green service known as "Green Channel Counter". SBI is providing many services like; paper less banking, no deposit slip, no withdrawal form, no checks, no money transactions form all these transaction are done through SBI shopping & ATM cards. State Bank of India turns to wind energy to reduce emissions: The State Bank of India became the first Indian bank to harness wind energy through a 15-megawatt wind farm developed by Suzlon Energy. The wind farm located in Coimbatore uses 10 Suzlon wind turbines, each with a capacity of 1.5 MW. The wind farm is spread across three states – Tamil Nadu, with 4.5 MW of wind capacity; Maharashtra, with 9 MW; and Gujarat, with 1.5 MW. The wind project is the first step in the State Bank of India's green banking program dedicated to the reduction of its carbon footprint and promotion of energy efficient processes, especially among the bank's clients**.**

[36] Kansai Nerolac Paints Ltd. has always been committed to the welfare of society and environment and as a responsible corporate has always taken initiatives in the areas of health, education, community development and environment preservation. Kansai Nerolac has worked on removing hazardous heavy metals from their paints. The hazardous heavy metals like lead, mercury, chromium, arsenic and antimony can have adverse effects on humans. Lead in paints especially poses danger to human health where it can cause damage to Central Nervous System, kidney and reproductive system. Children are more prone to lead poisoning leading to lower intelligence levels and memory loss.

[37] Indian Oil is fully geared to meet the target of reaching EURO-III compliant fuels to all parts of the country by the year 2010; major cities will upgrade to Euro-IV compliant fuels by that time. Indian Oil has invested about Rs. 7,000 crore so far in green fuel projects at its refineries; ongoing projects account for a further Rs. 5,000 crore. Motor Spirit Quality Improvement Unit commissioned at Mathura Refinery; similar units are coming up at three more refineries. Diesel quality improvement facilities in place at all seven Indian Oil refineries, several more green fuel projects are under implementation or on the anvil. The R&D Centre of Indian Oil is engaged in the formulations of eco-friendly biodegradable lube formulations. The Centre has been certified under ISO-14000:1996 for environment management systems. GREEN FUEL ALTERNATIVES In the country's pursuit of alternative sources of energy, Indian Oil is focusing on CNG (compressed natural gas), Auto gas (LPG), ethanol blended petrol, bio-diesel, and Hydrogen energy.

4: Wipro Green It[38]

5: Going Green: Tata's new mantra[39]

National Environmental awards: It should be noted that like other countries in the world, the Central Government in India has introduced a National Award to encourage industries and operations to take significant steps for prevention of pollution.[40] The awards will be granted each year to units which make a significant and measurable contribution towards development or use of clean technologies, products or practices that prevent pollution and find innovative solutions to environment problems. The awards will be in the form of a trophy with a citation which will be retained permanently by the awardee. The number of awards may be up to 18 in a year once in each of the identified category of highly polluting industries as identified in the notification[41]

In addition to the above, up to 5 awards may be given in a year to small scale industries.[42]The considerations for the awards include reduction of risk to the community, living in the vicinity of units handling hazardous chemicals.[43] The selection committee shall review the nominations for the awards received from the sponsoring authorities, which shall be in the pollution control board of the state where the unit is located.[44]The winners of the awards have given some privileges in social life.[45]

[38] Wipro can do for you in your quest for a sustainable tomorrow - reduce costs, reduce your carbon footprints and become more efficient - all while saving the environment. Wipro's Green Machines (In India Only)Wipro Infotech was India's first company to launch environment friendly computer peripherals. For the Indian market, Wipro has launched a new range of desktops and laptops called Wipro Green ware. These products are RoHS (Restriction of Hazardous Substances) compliant thus reducing e-waste in the environment.

[39] The ideal global benchmark though is 1.5. Tata Motors is setting up an eco-friendly showroom using natural building material for its flooring and energy efficient lights. Tata motors said the project is at a preliminary stage. The Indian Hotels Company, which runs the Taj chain, is in the process of creating eco rooms which will have energy efficient mini bars, organic bed linen and napkins made from recycled paper. But there won't be any carpets since chemicals are used to clean those. And when it comes to illumination, the rooms will have CFLs or LEDs. About 5% of the total rooms at a Taj hotel would sport a chic eco-room design. One of the most interesting innovations has come in the form of a biogas-based power plant at Taj Green Cove in Kovalam, which uses the waste generated at the hotel to meet its cooking requirements. Another eco-friendly consumer product that in the works is in the works is Indica EV, an electric car that will run on polymer lithium ion batteries. Tata Motors plans to introduce the Indica EV in select European markets this year.Indica EV, an electric car that will run on polymer lithium ion batteries.

[40] GSR 736 (E) 26.8. 1992 II 3 (i) Extra Sl. 355.

[41] Ibid, Clause 4.

[42] Ibid, Clause 5.

[43] Ibid, Clause 8 (iv)

[44] Ibid. Clause 10.

[45] Ibid. Clause. 13.

National Air Ambient Quality Standards: In USA, legislation was enacted to control air pollution in 1955, and strengthened in 1963, 1965 and 1967. However, it was the Clear Air Act, 1970 that shaped the control programme with the object to protect the public health and welfare from harmful effects of air pollution.[46] Even today 1970 Act is retained with its basic principles, along with its amendments adopted in 1975 and 1977. To define the goal of the Air act, the US Environmental Protection Agency sets two kinds of National Ambient Air Quality Standards (NAAQS)[47] and National Standards for Hazardous Pollutants (NESHAPS) [48]

Because of the presence of high amount of air pollutants in the ambient air, the health of the population and property is getting adversely affected. In order to arrest the deterioration in air quality, Govt. of India has enacted Air (Prevention and Control of Pollution) Act in 1981. The responsibility has been further emphasized under Environment (Protection) Act, 1986. It is necessary to assess the present and anticipated air pollution through continuous air quality survey/monitoring programs. Therefore, Central Pollution Control Board had started National Ambient Air Quality Monitoring (NAAQM) Network during 1984 - 85 at national level. The programme was later renamed as National Air Quality Monitoring Programme (NAMP).

The objectives of the N.A.M.P. are as follows: To continue ongoing process of producing periodic evaluation of air pollution situation in urban areas of the country; To determine status and trend in ambient air quality and effects of air pollution in urban environment; To estimate the future worsening or improvement of air quality and to obtain the knowledge and understanding necessary for developing preventive and corrective measures; To understand the natural cleansing process undergoing in the environment through pollution dilution, dispersion, wind based movement, dry deposition, precipitation and chemical transformation of pollutants generated;• To ascertain whether the prescribed ambient air quality standards are violated and to assess health hazard, damage to materials and to control and regulate pollution from various sources.

[46] Garg, M.R(1997), *Environmental Pollution and Protection*, New Delhi: Deep and Deep Publications, pp. 54,55.
[47] Specifying maximum acceptable levels for pollutants in outdoor air: Primary standards set limits which protect human health, including sensitive populations, such as children, asthmatics or the elderly; secondary standards protect plants, animals and material from harmful effects of air pollution. With six criteria pollutants: carbon monoxide; nitrogen oxides; ozone; lead; sulphur oxides; and particulates.
[48] To control the emission of substances to toxic that even small amounts may adversely affect health. For asbestos; beryllium; mercury; and vinyl chloride, and proposed standards for benzene and arsenic.

The ambient air quality monitoring network involves measurement of a number of air pollutants at number of locations in the country so as to meet objectives of the monitoring. Any air quality monitoring network thus involves selection of pollutants, selection of locations, frequency, duration of sampling, sampling techniques, infrastructural facilities, man power and operation and maintenance costs. The network design also depends upon the type of pollutants in the atmosphere through various common sources, called common urban air pollutants, such as Suspended Particulate Matter (SPM), Respirable Suspended Particulate Matter (RSPM), Sulphur dioxide (SO_2), Oxides of Nitrogen (NOx), and Carbon Monoxide (CO) etc. The areas to be chosen primarily are such areas which represent high traffic density, industrial growth, human population and its distribution, emission source, public complaints if any and the land use pattern etc. Generally, most of the times the basis of a network design are the pollution source and the pollutant present.[49]

However the data available is of poor quality, to assess properly. The reasons poor quality of data are as follows: Irregular Calibration of Equipments Monitoring instruments are prone to drift and may show variations in measured parameters. Calibration if not done regularly can decrease the accuracy of readings. Calibration of respirable dust sampler in terms of flow and time if not done regularly can result in errors in flow and time and hence errors in the concentrations; Improper Sample Collection, Preservation, Transportation and Analysis Loss of samples can occur if they are not stored in ice box while transporting from field to laboratory and also if ice is not kept in ice tray while sampling. Data may not be comparable if analytical methods recommended by CPCB are not followed; Lack of Trained Manpower Man power not trained properly may not follow correct methods of sampling and analysis resulting in error in measurements; Improper Location of Monitoring Station if location of monitoring station is not representative of the area then data may not be useful for drawing any interpretation. If the location of the instrument is such that it does not satisfy the physical requirements of monitoring site such as height above ground level, distance from nearby sources etc. then data generated may not be of much use in determining status and trends; Lack of Infrastructure in terms of proper shed for the protection of instrument during rain, cover off during off time if not provided may result in corrosion of instrument and error in data generated; Lack of Dedicated Manpower If due to shortage of manpower, personnel involved in ambient air quality monitoring are also

[49] http://www.cpcb.nic.in/newitems/7.pdf

involved in other activities and the monitoring data is not generated for adequate number of days, then the annual average computed may not represent the true annual average; Non-availability of Continuous Power Supply If due to non-availability of continuous power supply, monitoring is not carried out for 24 hours in a day, and then the daily average computed may not represent true daily average.[50]

Conclusion

These are few important policies pursued and developed by India to maintain ecological equilibrium. But the scientific information is required for better implementation of them. Realizing this truth, the Ministry of Environment and Forest, Government of India has launched an assessment programme in the year 2009[51]. This report made us realize many difficulties in collecting information or maintain continuous data.

[50] Ibid.
[51] The programme is Indian Network of Climate Change Assessment 2007, see MOEF website for the details