IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)
e-ISSN: 2278-1684,p-ISSN: 2320-334X, Volume 12, Issue 2 Ver. I (Mar - Apr. 2015), PP 31-35
www.iosrjournals.org

Shifting paradigms for environmental management to sustinable development

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Abstract: *The irrepressible human curiosity and the unquenchable thirst for knowledge are the fundamental basis for scientific development. A major part of innovation in scientific and techonological development has been directed towards generation or elevation of human comforts thereby increasing the standard of living in the society consequent to improvements disturbing side effects such as environmental pollution deforestations, urbanisation, loss of arable land, evolution of new organism to control etc. have emerged these effects are considerd as potential threats to wnvironment and to human. There has been great stress on natural resources. Acceleration in industrilisation have resulted in deterioration of environment to the extent that is a no longer possible to maintend desired quality of water and air for proper sustenance of life. Even ecological balance has been threatened this has necessiated urgent steps for environmental management and eco-restoration. So that not only forther deterioration is arrested but also to improve water and air quality to provide proper living conditions to th man kind. This is possible only when environmental management is integrated with development activities to provide sustainable development. A more fruitful integrative paradigm of sustancentrism is then articulated and implication for organisational goal. Tosupport ecologicaly and socially sustanable developmant.*

Keywords: *Environmental management, Sustanable development*

I. Introduction

In agrarion society people lived essentially in hormony with nature raising food, gathering firewood and making clothing and tools from the land the wastes from animals and humans were returned to the soil as furtilizer. Hence there were no appreciable problems of air, water or land pollution for the small settlement which grewup the supply of water, food and other essential goods and disposal of wastes had to be kept in balance with the changing community but no serious environmental problems were created. The industrial revolution in 19th century particularly in Britain, Europe and North America aggraveted the environmental problems due to increased industrialization and urbanisation these to factor caused such level of water pollution and air pollution which the cities of that time could not handle effectively.

After the second worldwar the industrialised countries had an economic boom due to burgeoning population advanced technology and a rapid increass in energy consumption. These activities increased considerably from 1950 onwards there by increasing the variety and quality of wastes discarge into the environment. The financial crunch since 1970 forced changed in the priorities of many countries Issues like unemployment, infletion, energy, effect of globlisation resource crunch, high technology, war threat, social and political compulsion became mazor concerns thus it appears that concerns about the public health and safety aspects of hazardous wastes will continue to increase for a long time it is in this back drop that development and implimentation of effective environmental management strategies assume paramount importance.

The United nations conference on human environment was held during Jun 5-11-1972 at the swedish capital stockholm. This stockholm conference was first mazor international event which created globle awareness about the environment by placing the environmental concerns on the agenda of mazor international topics. The set of 109 recmmendation of the stockholm conference widely conciderd to be the Magna Carta of environment laid down the principles and action plan to control and regulate human environment to commemorate this great event June 5th of every year is rightly observed as the world environment day. The historic stockholm decleration called for world community to protect and improve the environment for present and future generation and give the concept of eco-development.

In 1983 the U.N. General assembly appointed the world commission on environment and development. This commission on having 21 countries as its member was entrusted with the task of formulation of a Global agenda for change after deep study the committee submitted its report entitled our common future in 1987 the committee recognised that the sustainable development should became a control guiding principles of the United Nations. Sustainable development implies meeting the needs of the present without compromising the ability of the future generation to meat their own needs.

The United Nations conference on environment and development known as earth summit or Eco-92 held during June- 3-12-1992 at rio de janereio Brazil This coference identified the prectical environmental and developmental challenges and apportunities and their inter-linkage upto the end of this century and even beyond. The earth charter prepared at the conference enunciates the principles setting out rights and obligations of all nations in relation to environment and guidelines to nations in their quest for ecologically sustainable development . The earth summite also came up with convection of climate change and the convection on biodiversity.

II. Environmental management

There is a growing concern in developed nations about the ever - increasing environmental degradation due to industrialisation. There is total agreement throughout the world that any further environmental degradation should be effectivelly and completely checkued. However there are diiffernt approaches with regard to environmental management. The first approach is based on development of suitable standards for each pollutants, responsible for air, water, noise and soil pollution and for this there is a statutory provision with the declearation that the level of pollutants discharged in natural streams / atmosphere should remain within the standards and any increase in the concentration of the pollutants beyond the prescribed standards will invite criminal proceeding or other suitable action by the state to impliment this approach how ever each industry is free to choose any method of environmental pollution control.

In the second alternative environmental management is based on the best practivable means in which case the industry is free to adopt any suitable method which is technically feasible as well as economically viable. Such a system is prevalent in the U.K. It may also be meantioned that the environmental protection agency of the united state shifted the time bound atandards for a specific period of time when confronted with the energy crisis. In developng nations have also started organising effective check and controls on environmental pollution. In some cases suitable standards for water pollution have also been prescribed however detailed standards for different industrial environments for waste disposal noise, air pollution, radio active materials etc. are yet to be developed and in each case it is necessary to have a time bound programme for reduction to desired standards.

Regarding environmental management the following points are important to under stand in developing nations

i. There should be statutory standards for air, watre, noise, radio active materials etc. but due to the difficulties in developing countries they should be implemented keeping in view the special situation i.e. circum stances associated with the industry and natural streams involved total pollutional load on the river, its assimilation capacity and self purification constant should be invariable considered.
ii. The Standards should serve as guidelines and there should be complete flexibility so that the pace of industrialisation may be maintened or accelerated as for as possible. The global and regional requirements and also economic condition may be kept in view while making statutory provision for the standards to be maintained by each industry.
iii. Whereever suitable technical know-how is not available a grace period may be allowed and the meantime suitable know how may be generated with assitance from the polluting industry on the principle pollutor should pay further certain guidelines with regard to the desirable limit are necessary to know the exced position.
iv. As an incentive, certain tax concessions may be given to those industries which are well bellow the standards and a certain amount of penality may be imposed on those which are well above the desired limit depending upon the degree of deviation from standards prevaling in the industry.

Subsquently the country or state may be divided into following three zones.

Red - Where pollution load is more than assimilation capacity and as long as this situation continues no further industrialisation with polluting industries should be permitted.

Yellow - Where pollution load is significant but is still bellow the assimilation capacity in this area further industrialisation should be allowed after details environmental impact assessment and further industrialisation should be allowed only when pollution load after proposed treatment is within assimilation capacity of the receiving system.

Green - Where there is practically no industrialisation, Industrialisation should be encouraged as it is done in case of backward area.

III. Components of Environmental management

The mazor components of effective environmental management are.

i. Control of atmospheric pollution and environmental degradation.
ii. Adopting technologies which ensure sustainable development.

iii. Conducting environment impact assessment to review the existing technologies and making it mandatory for cleaning mazor project for environmental concern.
iv. Institute environmental perception among people by conducting awareness programmes.
v. Environmental education and training at school, colleges and universities.
vi. Controlling over population
vii. Controlling over consumption and chaze by inculcating sublime human values such as service to society non- material enrichment and spiritual solace.

IV. Environmental Impact assessment

Enviromental imapct assessment is an activity designed to identify and predict the impact of the biogeophysical environment and on human health and well being of legislative proposals, policies, programmes, projects and operational procsdures and to interpret and communicate information about the impact . EIA is widely accepted as a tool in environmental management. It has been adopted in many countries with differrent degrees of enthusiasm and evolved to varying levels of sophis tication. Whenever a new development project is planned which is likely to affect environmental quality it is usefull to carryout environmental impact assessment (EIA). In many jurisdiction EIA is mandatory before according permission to proceed with development projects such as power plants, dams, smelters, petrochemical industries, paper industries, iron and steel mills, mining, oil exploration, flood control system etc. The first step in environment impact assessment process is to determind whether the project under considaration falls within the jurisdiction of the relevent acts/ regulations and if so whether it is likely to creat a significant environmental disruption if so an EIA is undertaken and the environmental impact statements (EIS) is prepared. The EIS should contain following information/ data.

It shold include details of the construction phase, operation phase and the shut down phase wherever applicable the selection of alternatives to the proposed action e.g. different ways of building and operating the project, alternative sites etc.

Estimation of the neture and magnitube of the likely environmental effects of the various alternatives proposed. This is mainely done under the physical factors, biological factors and socio- economic factors etc.

Identification of the relevent human concerns.

Criteria to be used in measuring the significance of environmental changes including the relative weightages to be assigned in comparing different types of changes.

Estimating the significance of the predicted environmental changes and thereby the impact of the proposed action.

Recommendation for acceptance of the project / remidial action/ acceptance of one or more alternatives / rejection of the projects.

Recommendation regarding monitoring procedures to be followed during and after implimentation of the project.

V. Participants in EIA process

Proponent : Government or private agency which intiates the projects.
Decision Maker : Designated individual or group or body.
Assessor : Individual or agency responsible for the preparation of EIS.

Reviewer: Individual / agency/ Board entrusted with the responsibility for reviewing the EIS and assuring compliance with the relevent guidelines / requirements.

Expert Advisor.

Media and Public at large

Speacial Interest group : Environmental organization, professional, society, labour union and local associations.

VI. Design of EIA

Some of the important aspects that should be considerd for the design of an EIA process are as.

6.1 - Project design and construction-

Types of project under consideration
Physical dimensions of the area being considered.
Whether there is an irretrievable commitment of land?
Whether the resources will be used optimally?
Wheather the project is a critical phase of a larger develeopment?
What are the long term plants of the proponents?

6.2 Project operation :-

How will the hazardous waste product be handled ?

What provision have been made for training the employees for environmental protection?
What are the contingency plants developed to cope up with the possible accidents?
What plans have been made for environmental monitaring ?
What provisions have been made to check the safety equipment regularly ?

6.3 Site Characteristics :-
Whether the terrain is creating problems in predicting grounwater characteristics air pollution etc?
Whether the site is susceptible to floods, earthquakes and other disasters?
How many people are likely to be displaced because of the project?
Whether the local environment os conductive for the success of the project?
Whether the project will interfere with the movement of fish population and important migratory animals?

6.4 Possible environental impact :-
What are the possible short term and long term environmental impacts for this type of project during construction and after construction ?
Who would be effected because of these impacts?

6.5 Socio- Economic factors :-
Who are the expected gainers and losers by the projects?
Where are the expected trade off ?
Will the project interfere the existing inequalities between occupational ethic, sex and age group?
Will it effect the patterns of local / regional/ national culture?

6.6 Socio - Political Factors :-
What are the relevant political factors that have to be cosidered?
What will be the dificulties in implementation of construction and operation phase of the project ?
What are the relevant governmental regulations and procedures?

6.7 Availability of information and resources :-
Whether local and outsidess experts are available to consult regarding specific impact of the project?
Whether the relevant guidelines, technical information and other publications are available to identify and deal with the possible impacts of dimilar projects?
Whether relevant environmental standards by law etc?
Whether the sources of relevant environmental data are identified and whether they are accessable?
Whether the view of the specialist groups and general public regarding the project have been ascertained and considered?
Whether the competant technucal man power available to handle the project and the possible impacts?
When Ones the magnitube and the significants of the impactss have been determind the EIA may be considered to be essentialy complete. The EIA is a potentially uiseful coponents of good environmental management. It represents a reconcilation of environmental and socio economic factors with respect to the proposed development. However some people still seem to have reservations about this system on the plea that the EIA is expensive, it delays the projects and the prediction are uncertain.

VII. Conclusion

Environmental management is absolutely essential for sustainable development because it minimises the environmental disturbasnces and ensures unhanpared pace of industrial developmant and economic gouwth. Environmental audit is an important tool for environmantal management bacause it enables the environmental pollution control agencies to ensure the compliance with the environmental protection laws. Environmantal managemant is an important management tool comprising of a systematic, periodic, objective and documented evaluation and assessment. As to how well the environmental management system are organised to facilitate control of environmental precticess and how well the company policies are complying with regulatory requirements to sustainable development of industries.

The principle of sustainable development is basicaly related to the carring capacity of the ecosystem. Sustainable development is a process in which the exploitation of natural resources, the pattern of investments and the institutional changes are all made keeping in view off the present as well as future needs of the human race on our planet. Apart from the above other measures such as importing environmental education and environmental consciousness among masses and inculcating the values of non material enrichment and spritual solace among people go a long way in our endeavours to achive sustainable development.

Acknowledgement:

The authors express their thanks to Prof. Mihir Pandey HOD Mechenical Engineering J.N.C.T. Rewa for providing necessary facilities and encouragement thanks to all faculty members of Mechenical Engineering and Principal of J.N.C.T. Rewa to give me valuable. Guidelines regarding my topics.

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