

GREEN MANAGEMENT IN MANUFACTURING SECTORS WITH SPECIAL REFERENCE TO TAMILNADU FOR SUSTAINABILITY

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Abstract

Manufacturing units pose predominant threat for environmental sustainability. Many companies have accepted their responsibility to do no harm to the environment. As a result Green Management is defined as the Management practice to cover the environmental implications of the company's operations, products and facilities, eliminates waste and emission, maximize the efficiency and productivity of its resources and minimize practices that might adversely affect the enjoyment of the country's resources by future generations. This paper attempts to identify highly polluting industries in Tamilnadu and complying them with environmental policies. Implications are two folds: attitude for Green Management among stake holders and business units exhibiting Corporate Environment Responsibility.

The pace of environment hazards by the industrial emissions and poor environment management leads to depletion of raw materials and exhaustion of natural resources causing indirect poisoning and challenges sustainability.

Key Words: *Green Management, Industrial Environmental Responsibility, Sustainability.*

INTRODUCTION

In recent times the Government policies and Regulatory bodies emphasize the importance of environmental issues and sustainable development both in the developed and developing nations. The reason behind the increase in concern towards environmental issues is that if we do not change the way we manage our organizations the future of the coming generations will be seriously threatened. Survey conducted on companies reveals that organizations with green management practices have higher staff morale, reduced labor turnover, and attract top quality human talent .Successful green management shows that companies have saved costs and show how small steps can make a positive impact on the organization. Environmental sustainability is the need of the hour, because of the increase in global warming in the recent past. It would impose severe damage on the world economy, particularly in vulnerable sectors including agriculture, the coastal zones, human mortality and natural ecosystem.

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LITERATURE SURVEY

Brockett, J. (2007) Prepare now for big rise in green jobs, People Management; ECOTEC (1993) Sustainability, Employment and Growth, Birmingham; Future Outlook Of Green Management Practices www.iosrjournals.org; Denton, D.K. (1999) Employee involvement, pollution control and pieces to the puzzle, Environmental Management and Health, vol.10. Twelfth Five-year plan :Sustainable Environment Management; Environment Impact Analysis Report (EIA)TN portal.

DATA SOURCE

Secondary data were sourced and piled for analysis from Tamilnadu Pollution Control Board reports from 2000 – 2016 amendments: data on contamination of water sources, industrial pollution charts; ENVIS information system reports of CPCB; Industrial Profile Updates : Government of India twelfth Five-year plan :Sustainable Environment Management Environment Impact Analysis Report EIA TN portal.

Classification of industries for consent management by TNPCB schedule - VIII [rules 3(2) and 12][Red, Orange & Green Categories]

List of Industries under 'RED' Category(Industries identified by Ministry of Environment & Forests, Govt. of India as heavily polluting and covered under Central Action Plan, viz. Distillery, Sugar, Fertilizer, Pulp & Paper, Pharmaceuticals, Dyes, Pesticides, Oil refinery, Tanneries, Petrochemicals, Cement, Smelters) were considered for the study based on the pollution charts. Primary data were collected by interview with managers of dyeing units in Tirupur and Dindigul.

ANALYSIS

Causes for Industrial pollution have been brain stormed with industrial experts and studied for highly polluting(RED category) industries listed by CPCB using ISHIKAWA (Cause-Effect) method.

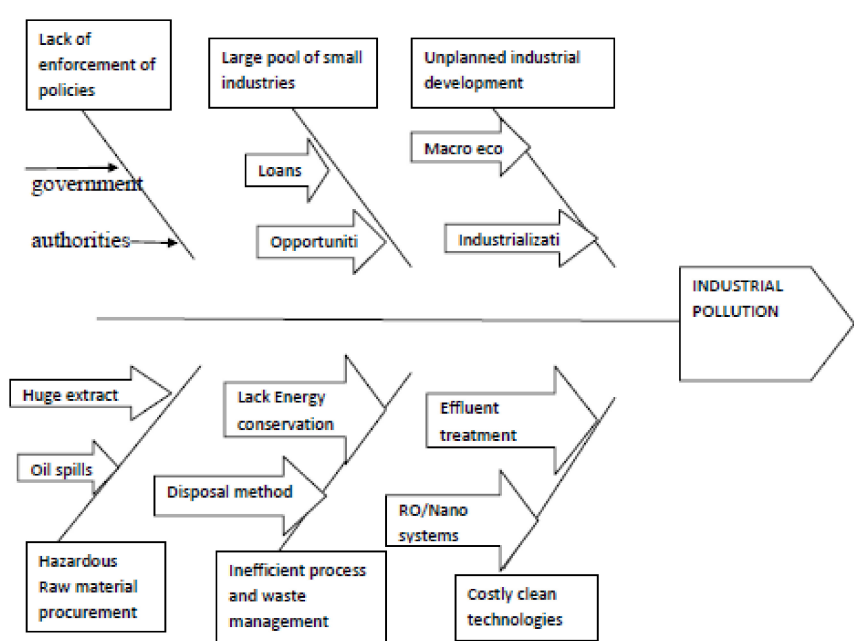


Table 1.1 Status of Sewage System Coverage in Tamilnadu

DETAILS	1978	MARCH 2010
Area covered	72%	100%
No. of dwellings with sewer connections	1,14004	5,98,240
Length of sewer line	1223km	2,677 km
No. of pumping station	57	195
Treatment plants	3 no.s	8 no.s
Treatment capacity	56 MLD	486MLD

Correlation analysis has been done by the researcher between ‘Sewage system coverage’ (Source : TWAD) and ‘Health issues’ prevalent in the state with the data for 10 years on prevalent of cholera cases ((source: Department of Public health and Preventive medicine, Government of Tamilnadu) .

MAJOR CAUSES

1. Lack of enforcement of Policies: allowed many industries to bypass laws made by pollution control board which resulted in massive scale pollution that challenged lives of many people. Incurring initial expenses was the underlying reason.

2. Imbalanced Industrialization: Government's interest towards industrialization and start-ups and SSIs led to haste and havoc growth where those companies flouted norms and guidelines polluted the environment.

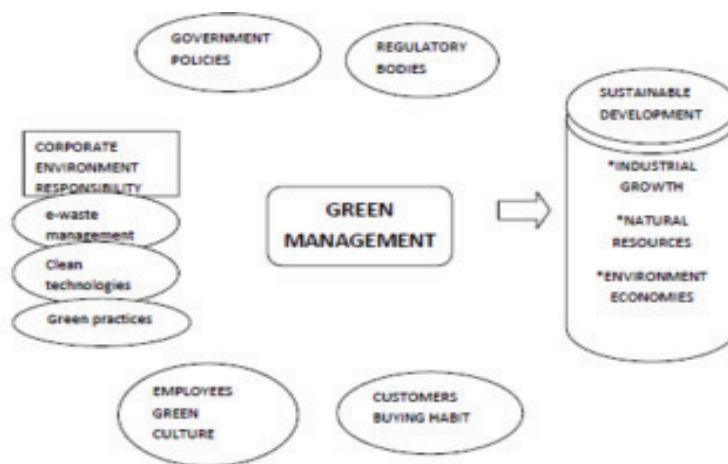
3. Costly clean technologies: Most industries still rely on old conservative methods to produce products that generate large amount of waste. To avoid high cost and expenditure, many companies still make use of traditional technologies to produce high end products.

4. Large pool of Small Scale Industries: Many small scale units that have insufficient capital and rely on government funds to run their businesses often skip environment regulations and release large amount of toxic gases in the atmosphere. Banks relaxed loan schemes for entrepreneurs where job opportunities created but led to uncontrolled growth of SSIs.

5. Inefficient Process and Waste Disposal: Water pollution and soil pollution are often caused due to inefficiency in production process and disposal of waste. Long term exposure to polluted air and water causes chronic health problems, making the issue of industrial pollution into an issue of public health. It also affects the air quality in atmosphere which causes many respiratory disorders.

6. Sustainability challenged in procurement of natural raw materials: Few Industries require large quantity of raw material to make them into finished products. Future generation might face crisis due to such huge extraction. The extracted minerals can cause soil pollution when spilled on the earth. Leaks from vessels can cause oil spills that may prove harmful for marine life.

360* MODEL developed FOR GREEN MANAGEMENT



This model has been developed based on the perspectives of all possible influencing parameters of Green Management. Few critical parameters are discussed in this paper.

GOVERNMENT

Government of India extends a positive and serious outlook on Environmental issues. Industrial contribution has been monitored by such orders viz Notification of National Ambient Air Quality Standards; Formulation of environmental regulations / statutes; Setting up of monitoring network for assessment of ambient air quality; Introduction of cleaner / alternate fuels like gaseous fuel (CNG, LPG etc.), ethanol blend etc.; Promotion of cleaner production processes; Launching of National Air Quality index by the Prime Minister in April, 2015.

Future Government policies require a focus to increase profitability of industrialists by amending import duties that facilitate compensation on clean technology costs. Cluster Projects need to supported and monitored by the government bodies. Highly fluctuating Government Orders might discourage entrepreneurs.

The National Green Tribunal

The National Green Tribunal has been established on 18.10.2010 under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.

It is a specialized body equipped with the necessary expertise to handle environmental disputes involving multi-disciplinary issues. The Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.(source: Ministry of Environment profile). Promotion of 'Green Awards' even to tiny industries are to be considered.

TNPCB

With the increasing pace of industrialization in Tamilnadu, the need for continuous monitoring of pollution due to industrial sources has become significant. 3 Industries are required to provide pollution control measures to meet the standards prescribed by the Board. The field officers of the Board inspect the industries under their jurisdiction periodically to assess the adequacy of pollution control measures provided by the industries to treat sewage, trade effluent and emissions and to monitor their performance. They also investigate complaints of pollution received from the public, organizations and the Government. For effective monitoring, industries are categorized as Red, Orange, Green and White according to their pollution potential. Also the industries have been classified as Large, Medium and Small scale based on the gross fixed assets of the industry. Depending upon the category and size, industries are monitored periodically. (Tamilnadu pollution control board proceeding no: tnpcb/t3/cpcb/stp/15335/2015. dated: 08.06.2015) .

GREEN PRACTICES

Organization :

* Establish policies and standards such as proper waste disposal, using environment friendly gadgets, water and energy efficient products and environment friendly fuel vehicles.* Install timers to automatically turn off lights, use energy efficient light bulbs, keep temperatures at comfortable ranges, switch off electricity when not needed should be adopted.* Measuring performance with the standards annually will enable the organization to assess employees performance in going green.* Organizations should adopt the 3 R model of REDUCE, RECYCLE & REUSE. *Material like glass, paper, plastic, metal trash should always be recycled as far as possible. * Eliminate unnecessary photocopying and both side used paper should not be thrown to dustbin; it should be recycled to avoid the wastage of resources.

* Reduce business travel and official tours if they can be replaced by teleconferencing, and video-conferencing instead of traveling. *Virtual events are not only cost-effective but have lower impact on the environment. * Make use of renewable sources of energy like solar energy, bio-fuels, wind power and other alternative energy sources.

Employees : Car-pooling should be encouraged by discussing the benefits of it with the employees.

Consumers: Try to use jute bags instead of using plastic bag. These small habits of buying environment friendly product go a long way in promoting the green initiatives of the organization.

FINDINGS

Financial perspective:

1. 422 dyeing and 101 bleaching units were attached to the 18 CETP Common Effluent treatment plants in Tirupur knitwear cluster. NPA of dyeing sector stand as INR.147cr after the closure of dying units by court order in 2011.
2. In order to reverse the ecological damages in the area, the existing CETP (s) shall also require up gradation in terms of R.O / Nano systems followed by MSEs to constrain high TDS discharges into the river. The approximate expenditure towards this has been worked out as high as 126 crs INR and almost 35 crs for routing operation and maintenance of these systems.
3. 40% of the total initial investment is vested on treatment plants and clean technologies. Affordability by MSMEs towards Clean technologies pose a serious issue for choosing clean products, process and waste disposal methods.
4. There are 10 no.s of CETPs in operation in the vellore district and handling industrial effluents from tannery sector and discharging treated effluents in palar river basin.
5. Correlation exists between the employee productivity rate and Corporate Environment Responsibility measures.
6. 70% Power saving is done by Green Management practices by the firms.

Health perspective :

1. Untreated sewage contains many harmful bacteria as E.Coli, contamination of Ground surface water can cause disease like ADD, Cholera due to drinking contaminated water.
2. Cholera cases in the year 2004 was 1505; and 146 in the year 2013. Cholera cases show a positive correlation with the sewage treatment system establishment .(Department of Public health and Prventive medicine, Government of Tamilnadu)

3. ADD Acute Diarrhoeal Disease cases was 77400 in the year 2004 and 1,89,288 in the year 2013. Non compliance of the CETPs is found to be the underlying reason.
4. The CETP remove only 40% of the COD(chemical oxygen Demand, BOD (Biochemical Oxygen Demand)and most of the time the BOD of the treated waste water is above 100mg/l as against limited standard of 30mg /l for discharge into river waters. This is another non compliance by the CETPs. (pollution database for tamilnadu.pdf.)

CONCLUSION

Studies show that as companies begin recycling, reusing, refurbishing their products and upgrade to energy-efficient production systems that save energy or reduce wastage of energy, it becomes quite easier for them to achieve many indirect benefits of going green. However, lots of gaps and problems exist even in recent scenario to promote Green Management in the organization of today. Affordability poses a great challenge to the firms to hire clean technologies. But economies can be achieved through green practices. Cost efficiencies through such practices would increase the profitability. To conclude, Green Management is the management practice of today but there is a need to acknowledge the issues related to implementing Green Management so that is a successful and adopted at MSMEs as well for increased organizational performance, productivity and improved processes. The ultimate objective of mutual sustainable development is possible only if such a green culture is aspired by the direct stakeholders, government and the society at large.