



## Green Cover Development and ECO Friendly Move With Special Reference to Major Port City of East Coast of India-Karaikal

### KEYWORDS

Environment, Clean Development Mechanism, Green Cover follow –up

**MRIDUL UMESH**

Department of Microbial Biotechnology, Bharathiar University Coimbatore.

**ANAND SHANKAR RAJA. M**

Department of Commerce, SRM University Chennai

### ABSTRACT STUDY AREA-ENVIRONMENTAL SCIENCE

*Environment-the Earth-is our home, it is where we live, breathe, eat, raise our children, etc. Our entire life support system is dependent on the well-being of all of the species living on earth. Green spaces are a great benefit to our environment. Now the adverse effects on forests through over-population and the development of various chemical elements in the atmosphere have led to irregular rainfall and global warming. Mother earth has undergone serious environmental hazards during the past few decades after industrialization. Faced with limited resources and competition, few Indian industries have improved their green footprint and have converted the industrial region to go green with green cover mechanism. Green environment initiative with Clean Development Mechanism is the latest follow up by the industrial zones to protect the environment. Pondicherry a city, an urban agglomeration and a municipality in Pondicherry district is rich in its heritage and culture being ranked 16th position based on the Environmental performance Index (EPI) by the Planning Commission of India is going green with the green cover mechanism. Government has taken efforts to educate the importance of going green to a wide array of population. The government of Pondicherry is taking serious efforts to spread the importance of environment where people and industrial zones are involving in active participation in increasing the green cover mechanism. The study aims in analysing the CDM and green cover follow up with special reference to the major port city of East Coast of India- Karaikal.*

### INTRODUCTION

This global warming has brought changes in climate, including making perennial snow mountains melt, thereby adversely affecting not only human being but also other living species. They filter pollutants and dust from the air, they provide shade and lower temperatures in urban areas, and they even reduce erosion of soil into our waterways. To help developed countries fulfil their commitments to reduce emissions, and to assist developing countries in achieving sustainable development government is being working hard coming out with various environment supporting projects and schemes. Enhanced pace of developmental activities and rapid urbanisation have resulted in stress of nature causing environment and her conditions to fade affecting the quality of life. Many firms are beginning to realize that they are members of the wider community and therefore must behave in an environmentally responsible fashion. This translates into firms that believe they must achieve environmental objectives as well as profit related objectives. Industries are on go to abide the rules set by the government taking into consideration the importance of human life. The challenges of how to respond to the changing environmental conditions are the current global agenda where all Nations are working towards to find a solution. Industrial pollution in is not new and has been talked about for many years but no action has been taken to check the pollution. This has led to long term health impacts which have now started to show up in the population of the region. More and more businesses and industries are joining in the green movement, either out of a real interest in saving the planet or a desire to capitalize on the growing consumer demand for greener ways where the concept of green consumerism is taken into account where activities of recycling, purchasing and using eco-friendly products that minimize damage to the environment. This results in environmental issues being integrated into the firm's corporate culture. Firms in this situation can take two perspectives; 1) they can use the fact that they

are environmentally responsible as a marketing tool; or 2) they can become responsible without promoting this fact. The government of Pondicherry along with the Department of Science, Technology and Environment (DSTE) has adopted green environment concept for abatement of pollution and to go green. Governments have taken efforts to educate the importance of going green to a wide array of population. The thrust lies in pollution prevention and control through promotion of clean and low waste technology, re-use, re-cycle natural resource accounting, environmental audit, and green cover preparation of zoning atlas for spatial environmental planning which covers a wide area of industrial estates.

### OBJECTIVES OF THE STUDY

- To analyse Clean Development Mechanism and its highlights
- To state the importance of green consumerism and determine its status among industries
- To study the level of pollution control in the district of karaikal
- To analyse the governmental support in the district of karaikal for going green
- To over view the overall measures taken by Pondicherry government for implementing green cover mechanism
- To suggest better waste management strategies like production of biodegradable materials from wastes
- To highlight effective methods' for reuse and recycle of trash and commercialize the waste to wealth concept among common people.

### NEED FOR THE STUDY

Although environmental issues influence all human activities, few academic disciplines have integrated green issues into their literature. This is especially true of marketing. As society becomes more concerned with the true natural environment, businesses have begun to modify their behaviour

in an attempt to address society's "new" concerns. Some businesses have been quick to accept concepts like environmental management systems and waste minimization, and have integrated environmental issues into all organizational and human activities. Pondicherry like other coastal territories faces various environment related challenges like coastal erosion, industrial pollution, inadequate disposal of municipal and bio medical wastes, vehicular emission, loss of biodiversity etc. Pondicherry Pollution Control Committee having realized the necessity of protecting the fragile ecosystems is taking concerted efforts to resolve various issues pertaining to environment degradation. Karaikal being one of the prompt industrial zones in the state of Pondicherry is taking efforts to go green in a fully fledged way. The government has taken efforts to bring out various projects and schemes for the well being of the nature and public. The importance of green consumerism is still not a wide spread among the human community. The study aims in determining the Clean Development Mechanism adopted among industries in karaikal district and go green mechanisms being followed up. The study also aims in knowing the links between green consumerism and industries efforts to increase the green cover for a better living.

**SCOPE OF THE STUDY:** study area covers the district of Karaikal a major industrial zone in the state of Pondicherry

#### LIMITATIONS OF THE STUDY

- The study covers the area of Karaikal alone and does not consider the other districts of Pondicherry.
- The secondary data source which has data bias has implications on the analysis part.
- The study relies only on secondary source of data.

#### ABOUT DSTE

The DSTE consists of the following Divisions:

- Pondicherry Pollution Control Committee (PPCC)
- Pondicherry Council for Science & Technology (PCS&T)
- Pondicherry Coastal Zone Management Authority (PCZMA)
- State level Environment Impact Assessment Authority (SEIAA)

#### FUNCTIONS OF DSTE

- Popularisation of Science and Scientific technologies.
- Promotion of technology transfer from lab to land.
- Facilitation of scientific research by way of grants for better applied research.
- Bringing awareness among the public regarding environmental issues by celebrating days of environmental importance.
- To advise the State Government on any matter concerning with the prevention and control of pollution.
- Implementation of Acts & Rules pertaining to environment & pollution control.
- Regularisation and enforcement of standards prescribed under various Acts & Rules
- Pertaining to environment & pollution control.

#### KARAİKAL AND ITS INDUSTRIAL PROFILE

Karaikal town, about 20 km north of Nagappattinam and 12 km south of Tarangambadi, is the regional headquarters. Karaikal region is made up of Karaikal municipality and the Communes of Karaikal is a good fishing centre with the following ten marine fishing villages spread along the coast. They are Mandabathur, Kalikuppam, Akkampettai, Kottucherryedu, Kasakudymedu, in Karaikal municipal area, Kilinjalmedu, Karaikalmedu, in Tirumalairayam Pathi-

nam commune, Karakalchery in Neravy commune, Keezhaiyur Pattinchacherry and North vanjore. Fresh and dried fish are exported powers are also exported.

#### Establishment of National Ambient Air quality Monitoring Station

The number of industries has increased manifolds in the recent past. In Karaikal District around 250 industries are functioning. In Karaikal District one rural .As per the request of Pondicherry Pollution Control Committee, to ascertain the air pollution in Karaikal Region Central Pollution Control Board sanctioned three new Air Quality Monitoring Stations under National Air Quality Monitoring Programme.

#### HAZARDOUS WASTE MANAGEMENT

There are 404 red category units, 444 orange category units and 1232 green category units in the U.T. of Pondicherry. Region Wise based on the method of disposal hazardous wastes are classified into recyclable, incinerable and landfill able. Waste generation is a natural outcome of many of the human activities. Generation of wastes is inevitable

#### CDM IN PONDICHERRY AN OVER-VIEW

PPCC encourages industry to shift the conventional technology to Clean Development Mechanism (CDM) in order to minimize the green house gases and pollution. The idea is to create sustainable benefits and global emission reductions in the most cost-efficient.

- HINDUSTAN-UNILIVER LIMITED
- CHEMPLAST SANMAR SKOL BREWERIES
- H&R Johnson (India) Limited, Karaikal plant

TABLE NO 1.0

Sl. No.	Region	Quantity of Hazardous waste in TPA			Total
		SLF*	RCL**	INC***	
1	Puducherry	128.9	33,153.9005	22.93	33,305.6866
2	Karaikal	3.36	63.42	0.84	67.62
3	Yanam	--	3018	1.2	3019
4	Mahe	--	--	--	--
Total		132.300	36235.1205	24.9701	36392.3066

**Note:** SLF\* - Sanitary land filling; RCL\*\*- Recyclable; INC\*\*\*-Incinerable

**Data Source:** Secondary

TABLE NO 1.1 -Sources of Hazardous Wastes generation in the U.T. of Pondicherry

Sl.No.	Type of the Units	No. of Units
1.	Pharmaceuticals	02
2.	Chemical	23
3.	Electro Plating	07
4.	Paints/ Pigments	01
5.	Electronics	07
6.	Engineering	10
7.	Textiles	02
8.	Tiles	02
9.	Distilleries	02
10.	Waste re-processors	01
11.	Miscellaneous	29

**Data Source:** Secondary

**Status of municipal solid waste:**

The approximate quantity of waste generated town-wise is as below:

Sl. No	Name of the Town (Municipality)	Population (2001 Census) (in thousands)	Estimated Quantity of waste (Tons per day)
1.	Pondicherry - (Pondicherry Municipality)	221	175
2	Pondicherry - (Oulgaret Municipality)	217	125
3	Karaikal - (Karaikal Municipality)	74.33	15
4	Yanam - (Yanam Municipality)	31.3	05
5	Mahe - (Mahe Municipality)	36.8	15
	Total	190.43	335

Most of the hazardous waste generating industries in the U.T. is located mainly in Pondicherry region. Few are located in Yanam and Karaikal regions.

**Hazardous waste generation details**

Total No. of units issued authorization	#Recyclable (TPA)	\$Handling as Raw material (TPA)	*Land fillable (TPA)	@Incinerable (TPA)	Total (TPA)
(1)	(2)	(3)	(4)	(5)	(2)+(3)+(4)+(5)
85	10631.7	16946.3	92.3	6.8	27667.1

**Note:**

- Out of the total Hazardous waste of 27667 TPA, 92.3 TPA is landfill able and 305.423 tonnes of accumulated landfill able waste has been stored on land (cumulative). It is required to be shifted to TSDF of adjacent State.
- 4 No. of units which got authorization have wound up their operation.

# - Hazardous waste to be reprocessed by other units (eg. Waste oil, Dichromate waste, zinc ashes etc.)

\$ - Hazardous waste handling as raw material by other units (e.g. Dichromate waste)

\* - Hazardous waste cannot be reused or reprocessed (e.g. ETP sludge)

@ - Hazardous waste cannot be reused or reprocessed; can be incinerated (eg. Cotton soaked with waste oil)

**INFERENCE FOR THE ABOVE STATISTICAL DATA**

As per the secondary data available the major type of wastes in reference to Karaikal can be broadly categorized in to - chemical based ceramics, agro wastes, electronic wastes and textile waste. Management of each of this waste should require crucial planning taking in to ac-

count of their toxicity and potential to be recycled in to valuable products. Chemical based industry with its effluent directed directly in to the water bodies owing to the high BOD and COD contributes seriously to the death of aquatic habitants. There is no particular remedy suggested as a perfect alternative to tackle this environmental concern. Enforcement of better primary and secondary effluent treatment methods like trickling filters, flocculation, filtration or coagulation to remove potential toxins from chemical effluents can prove fruitful. Production of bio ceramics can be a better alternative to face the problems associated with ceramic wastes. These types of ceramics produced from biodegradable substrates offer less toxicity to the environment and offer more profit for the companies due to the reduction in production cost as compared to their chemically synthesized counterparts. The district of Karaikal is blessed with fisheries that contribute majorly to Pondicherry's annual income. Management of these agro wastes is quite easy as they are non toxic to environment except the offensive odour. Fish waste utilization for feed and fertilizers is a promising strategy for its recycle and re-use. Distillery spent waste majorly comprise of sugar rich fragments which can be tuned as a fermentative medium for the production of commercially important products like organic acids, biopolymers, enzymes and other valuable products. Electronic waste is a major menace to the society as they are the worst type of non biodegradable wastes. Incineration of this waste may lead to the evolution of toxic fumes. A preferable mechanism to tackle this problem is to reuse the parts and parcels of these wastes for the production of new electronic appliances. This minimizes the load of electronic wastes. Textile industry is a major backbone of Karaikal. The waste generated by these industry comprise mainly of byes and starchy fibres these can be treated in compost tanks for the removal of toxic metal ions and can be reused for the same process. Treatment of dyes is an important problem associated with all textile industries. Modern methods like microbial induced dye removal can be a better and eco friendly method for dye removal. Apart from these major wastes the district also generates biomedical waste that are infectious and incineration alone can be a suitable alternative.

**CONCLUSION**

The Clean Development Mechanism (CDM) offers abatement cost savings under the Kyoto Protocol by allowing credits for emission reductions. Government of Pondicherry has taken great efforts to implement CDM in industries for a better emission control. Pollution board of Pondicherry is planning to implement CDM all over the state to go green where air quality, waste management, sea coastal zone pollution control, climate change control are the key areas to be improved. Industrialization essentially forms the basis of development of every country. But environment has to be given the first priority as it sustains life. Industrialization has to go hands in hands with the concept of conservation, reuse and waste management. Green cover development should be strictly followed to safeguard the environment with its full richness and integrity. Wastes are inevitable in every sphere of day today life. Management, reuse and recycling of waste sounds to be a wise decision for monitoring the environmental safety. Production and commercialization of biodegradable products, educating people regarding the need for green movement has to be strengthened. Necessity is the mother of all inventions. Inventions are the product of research. More and more research from all areas in ultimate view of environmental protection should be developed to protect nature- 'our supreme mother'

**REFERENCE**

Austin D. and P. Faeth (2000): Financing Sustainable Development with the Clean Development Mechanism, World Resource Institute, Washington, D.C. CCPO (2004): The Joint Implementation and Clean Development Mechanism Processes Explained, DTI, UK, 2004 | Kirshen, P.H., M.R. Ruth and W.Anderson, (2007) "Interdependencies of urban climate change impacts and adaptation strategies: a case study of Metropolitan Boston, USA." Climatic Change, 10.1007/s10584-007-92525. | Miles, M. P., and Covin, J. G., 2000. Environmental marketing: a source of reputation, | Competitive and financial advantage. Journal of business ethics. (Vol 23, pp. 299-311). | <http://dste.puducherry.gov.in/> | <http://dste.puducherry.gov.in/ppccmain.htm> | <http://dste.puducherry.gov.in/PCZMAHOME.htm> | <http://dste.puducherry.gov.in/PCSTMAINPAGE.htm> | <http://dste.puducherry.gov.in/envisnew/envis1.htm> |