

# Environmental Practices in Small and Medium Size Enterprises in India

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## Abstract

Majority of Small and Medium Scale Enterprises business in developing countries and country like India or China have put-down natural environment at risk due to lack of sound environmental practices. The paper discusses current status of environmental practices and demand of environmental practices in Indian Small and Medium Scale Enterprises for sustainable business. The implementation of environmental practice is most important task for small and medium size enterprises in India. The mechanism of Small and Medium Scale Enterprises Market starts from purchase of factor goods; it passes through production process and ended with distribution of finished goods. At every stage there is need of environmental practice for sustainable business say green business or green market mechanism. But fact is different from reality; majority of Small and Medium Scale Enterprises neither preferring environmental practices nor understanding the cost of ecology and environment; they have been fulfilling the environmental compliance as per government regulation only since long ago. The Indian Small and Medium Scale Enterprises must ready for global competition on the basis of green marketing, green supply chain, green business and maximization of environmental practices in micro level and macro level business environment.

**Keywords:** SME, MSME, Environment, Environmental Practice in SMEs, Green Business in SME, Environment and Green Business.

## 1. Introduction

Samuelson & Nordhaus, (2001) rightly stated that changes in pollution depend on changes in income and abatement of pollution quantity; the pollution level is related to the subsistence agriculture produce & lower income, higher pollution is related to the industrial growth without pollution control and again lower pollution is related to highest income & abatement of pollution quantity. If the firm ignores the issues and cost of environment it will result in decline of net output and in long run the net output

will be equal to the cost of environment or say economic output will be zero. The economic impacts of negative environmental externalities include both the direct economic cost and indirect economic cost; the direct economic costs are seen as damage to infrastructure and costs of damages while indirect economic cost are reconcile through loss of natural resources, health quality, social variables and climate changes. The issue of environmental practice in market mechanism of SME is a serious concern for firm and government; they need to take corrective steps for long run environmental practices and sustainable business growth, otherwise net business growth will be equal to the cost of environment in the future.

In India the size of SME are very large, thus the pollution awareness, awareness of pollution, knowledge about ecology and environment, environmental variables, environmental practices and demand of environmental variables are very important issues. In this paper MSMEs and SMEs are interchangeable in this paper. Prior to 2007, all MSME were known as Tiny, SSI, Medium, KVI and Coir industries. The government of India has passed Micro Small and Medium Enterprises Amendment Act 2006 (MSMED Act 2006) on October 2<sup>nd</sup> 2006, in which whole agriculture and rural industries (KVI units and Coir units) merged into small scale industries and named as Micro, Small and Medium Enterprises (MSME) with enhanced ceiling of investment in plant and machinery and equipment. The new ceiling of manufacturing micro is Rs. 25 lac, small Rs. 500 lac and medium Rs. 1000 lac; and ceiling of services micro Rs. 10 lac, small Rs. 200 lac and medium Rs. 500 lac. From 2006 and onward all micro units are come under priority sector with all privilege and small scale units with partial privilege. The small and medium enterprises (SME) are significant in many countries including India for substantial proportion of firms' population and contribution in economy. In India, small and medium sized enterprises are known as micro small and medium enterprises since 2006. The size of MSMEs population is 31.15 million with significant

contribution in production, employment and export; it produced goods & services for Rs. 10957.58 billion, employment for 73.21 million people, export for Rs. 2740 billion (approx) and investment for Rs. 7734.87 million (MSME Annual Report, 2011-12). The sickness rate of this sector is critical problems for firms, employees and government since last sixty years. As per criterion of RBI, the magnitude of sickness rate was 14.47 per cent out of total registered SMEs (Registered MSME Report on 4<sup>th</sup> Census, 2011). The sickness rate of unregistered SMEs was or higher than registered SMEs, although it didn't reveal in the final report of unregistered SMEs (Unregistered MSME Report on 4<sup>th</sup> Census, 2011), thus approximately 14.47 per cent or 4.507 million registered and unregistered SMEs were found in sick condition or incipient sick condition. The percentage changes in the demand of industrial output of Indian SME is in declining trend since 1991 in India and world over; this result may be due to various causes including lack of environmental practices in the market mechanism (purchase of factor of production, production process and distribution process) of SMEs. In demand of services and agriculture based output of Indian SMEs is better than industrial output.

The Micro Small and Medium Enterprises (MSME) statistics (2018) reveals that the population size of MSME is 63.38 million units with approximately Rs. 22295 billion investments, approximately Rs. 32801 billion outputs, 28.77% Gross Value Added (GVA) in GDP, 110.98 million employments and approximately Rs. 1337 billion credit facilities by the lending institutions by March 2017-18. Export Value was \$ 147390 Million (Rs. 1044921 Crore according to Press Information Bureau, Govt of India. Competitive MSME policy, incentives to EOU, increase of new MSME units, bank credits, forty percent credit share to MSE, KVI and CI, and increasing output leads to higher export of MSME. The output share is 45 percent of total industrial output, 40 percent of total export and second largest size of employment after agriculture sector. The MUDRA scheme, credit scheme for MSE, credit scheme for KVIC & Coir firm, Kishan credit card, General Credit Card are exclusive scheme for MSME credit. Out of total size of MSMEs, less than forty percent units are getting benefits from schedule commercial banks; as on 2017-18 only Rs. 1337 billion credit facilities given by the lending institutions. Thus financial credit and investment by the promoters, policy framework related to bank credits are one of the key drivers of MSME output which accelerate export potential. Although, the export of MSME is far lesser than emerging economies like China, South Korea, Taiwan, Singapore even after various initiatives by the nation. In India, out of total size of SMEs, 96 per cent firms belong to micro enterprise which comprises khadi &

village industries (a type of industry based agro and non-agro inputs situated in rural areas), coir industries (a type of industry based on coconut fiber & residual of coconut situated in rural areas) and tiny industries (a type of industries based on agro and non-agro based inputs situated in rural and urban areas). Approximately 100 per cent of total Khadi & Village Industries, 100 per cent of total coir industries and 50 per cent of total tiny industries are located in rural areas, which are mainly depend on agriculture and/or agro-based pollution free inputs. It is unfair to say that rural agro-based industries are free from excretion of pollutant effluent; in fact it is fair to say that very less numbers of micro, small and medium firms are engaged in environmental practices and qualities. The government of India has also neglected the issues of environmental practices, because the report of 4<sup>th</sup> all India census of MSMEs published on 2011 did not reveal any variable related to the environmental practices. There are very little and almost insignificant researches on environmental practice in India and other developing nation. In case of developed nations, there are sufficient numbers of significant researches on this aspect which cover the issues of pollution emission and environmental practices. In the next section, some of the significant researches are discussed to cover the concurrent issues of pollution emission, pollution abatement and environmental practice in SMEs.

For achievement of green output through environmental practice large numbers of institutions and organizations are providing supports to the concerned department. The institutional supporters are development commissioner MSME, National Small Industries Corporation, Khadi and Village Industry Commission and Coir Board for overall development of rural micro enterprises. The National Institute for MSME (NSIME) Hyderabad, National Institute for Entrepreneurship and Small Business Development (NISBUD) Noida, Indian Institute of Entrepreneurship (IIE) Guahati, Mahatma Gandhi Institute for Rural Industrialisation (MGIRI) Wardha, Central Coir Research Institute (CCRI) Kalavoor and Central Institute for Coir Technology (CICT) Bangalore are providing HR training & skill development facilities and technical and R&D facility to prospective stakeholders. The NIMSME, NIESBUD and IIE are dedicated for R&D, HR training and development to stakeholders of tiny industry. The MGIRI is dedicated for R&D and training to the stakeholders of KVI; and CCRI and CICT are dedicated for R&D and training to the stakeholders of Coir Industry. The rural branches of commercial banks, regional rural banks (RRB), Small Industries Development Bank of India (SIDBI) and National Bank for Agriculture & Rural Development (NABARD) are financing and refinancing institutions to rural industries. Recently

Prime Minister of India has announced make in India with zero defect and zero effect which means we must increase production of goods and services in India with 100 per cent accuracy & quality with zero affect on environment; or say we will lead world only if and only if we follow the norms of zero defect and zero effect.

## 2. Review of literature

A number of studies on adoption of environmental practices by SMEs have concluded that, owner-managers are typically more motivated by achieving compliance with legislation/regulatory measures than any competitive advantage that might be gained by being a green leader. Noci and Verganti, (1999) highlighted that the growing importance of the environmental dimension represents major challenge for R&D practice. Improvement of product environmental performance is a complex management task for SMEs. They emphasized on implementation part of green innovation through actions in different levers of the technology strategy, the levers are intelligence system, key competencies, key technology, network infrastructure and green image. These levers may change reactive strategies, anticipatory strategy and innovation based strategy. Horowitz & McConnell, (2002) investigated on willingness to accept (WTA) and willingness to pay (WTP), they claimed that the ratio of WTA is higher than WTP, as well as willingness to accept and willingness to pay does not appear in the experimental artifacts, it is only a hypothetical judgement. The willingness to accept is higher than willingness to pay but it is not always necessary, it may be in equilibrium also. They identified that, other than regulatory/legislative bodies, few external agencies exert pressure on SMEs to move beyond their 'compliance only' positions with regard to environmental practices. *Worthington and Patton*, (2005) reported that, the cautious approach towards environmental action on the part of SME is predictable. Walker et al., (2008) stated that, owner-manager of SME is mainly concerned about staying in business, they mainly focused on what is bottom line and how much margin do they have in dropping prices or accepting higher cost, and least concerned about pollution & environmental practice i.e. owner/manager thinks that, investment in green production process will only be made if there is a return on that investment. His observation is relevant and valid for all types of SMEs exist in the world including India. Lee and Klassen, (2008) revealed that, public policy must facilitate and encourage SME suppliers to improve their environmental performance. The government agencies provide financial and technical support as well as facilitate coordination to buyers and their suppliers in nationwide green initiatives. These agencies may also play an important role in initiating the turning of

large buying firms' attention to supply chain-wide environmental management. Gaur et al., (2011) empirically analysed and indicated that, knowledge intensity has a positive effect on inter-organizational trust; however increased uncertainty due to environmental factors or a change in focal firm is associated with a reduction in inter-organizational trust. This relationship is however conditional, such that internal uncertainty as measured by focal firm change, weakens the positive relationship between trust and firm performance, whereas environmental uncertainty strengthens the positive relationship between trust and firm performance.

Chakrabarty, (2013) emphasized that the environmental issues are usually not a matter of primary concern for banks, it is a secondary issues but important for long run business. According to him, the industry should try and adopt sustainable practices and reduce industrial wastes via encouraging in-house recycling and waste reduction. The role of all concerned stakeholders is crucial for this movement. He highlighted on the achievement of a green economy, which should be without harming underprivileged people. Green economy has to be bottoms up and democratized. In case of Indian SMEs, all stakeholders including government are least concerned about the environmental practices. The government of India has conducted four censuses of SME in which management aspects, organization policy & behaviour, market status, finance position, economic issues, technical parameters, banking norms, legal aspects, sickness conditions, output, export, employment and investment were asked to the owner/manager of firm. But authorities have not asked any question on environmental practice and views on adoption of drivers in environmental practice, and reduction of environmental pollution and externalities. India is a developing nation. It is essential to uptake responsibility of environmental practices compulsorily in all businesses including SMEs for ethnic, ethical, sustainable and inclusive growth. From above literature it is observed that the issue of environmental practice in market mechanism (i.e. from procurement of factors of production to distribution of finished goods), SME is in serious condition and government has to address the situation timely otherwise in long run society and government will bear the cost of environmental by equating GDP of country.

## 3. Objective and methodology

The objective of this study is to examine the environmental practices and demand of environmental practices in Indian SMEs for green business mechanism and finally green business output. It is giving insight on currently used variables

and some new variables useful for environmental practice by small and medium enterprises. The data is classified in two parts, the first part is discussing firms' characteristics, firm size of respective characteristics, existing environmental practice and regulatory compliance; the second part is discussing some new drivers for adoption in environmental practices by the SME firm. A samples of 305 firms engaged in manufacturing of various types of goods in different industrial areas of Indian republic with help questionnaire have been collected. The small sample size from larger geographical area is only because of owner's negative view on questions related to environment, pollution emission, pollution control, pollution equipment, internal information of firm, lack of trust on third party (private researchers without government support) and fear of divulgence of information against the firm; all these reasons compel us to collect smaller size of data even from larger geographic areas and at maximum effort. In addition to primary data, a set of secondary data have been collected from public sector banks on environmental practice which is helping in comparison and validation of questionnaire and result. The classification and analysis of data are broadly based on characteristics of data which is divided in three stages, displayed in table-1. The first stage constitutes classification of data in the group variables according to characteristics, e.g.

'registration of firm'. The second stage constitutes distribution of group variables in sub-group on the basis of its characteristics, e.g. 'registration of firm' is further distributed / sub-classified in sub-group as registered firm, provisionally registered firm and unregistered firm. And the third stage constitutes linkage of group variables and its sub-group variables with objectives variables. The data is classified in 8 groups, 18 subgroups. The group variables is classified as size of capital, constitutions, production types, sources of loan, quality control measures, selling areas, pollution emission and measure of pollution controls. Further the group variables are sub-classified/re-distributed into 18 sub-group variables. The sum of distribution matrixes of each group or each sub-group must be equal to 100, shown in table-1. The simple statistical tools are used in the analysis of association between variables.

#### 4. Analysis and Findings

The analysis of study is examining the current conditions of environmental practices in Indian SMEs on the basis of two defined parameter i.e. pollution emission and measure of pollution control as well as effect of these two variables on market mechanism of Indian SME.

**Table - 1: Environmental Practice in SME**

Firm Characteristics/Features		Pollution Emission (PE) Detail				Measure of Pollution Control			
Group Characteristics	Sub-Group Characteristics	Direct + Indirect PE (253 Firms)		Indirect PE (52 Firms)		Compulsory NoC (265 Firm)		Optional NoC (40 Firms)	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%
Size of capital	Small Scale Firm	87	84.47	16	15.33	76	73.79	8	7.77
	Micro Scale Firm	166	82.18	36	17.82	170	84.16	32	15.84
Constitutions	Proprietorship Firm	129	80.12	32	19.88	138	85.71	23	14.29
	Partnership Firm	83	88.30	11	11.70	86	91.49	8	8.51
	Limited Company	41	82.00	9	18.00	41	82.00	9	18.00
Production Types	Manufacturing Firm	253	82.95	52	17.05	265	86.89	40	13.11
	Services Firm	0	0.00	0	0.00	0	0.00	0	0.00
Quality Control	QC as per Norms	11	31.43	24	68.57	19	54.29	16	45.71
	QC without Norms	35	55.56	28	44.44	39	61.90	24	38.10
	QC Outsourced	207	100.0	0	0.00	207	100.0	0	0.00
Sources of Loan	Banks & FI	232	82.86	48	17.14	244	87.14	36	12.86
	Unsecured Loan	21	84.00	4	16.00	21	84.00	4	16.00
Selling areas	Local Market	201	94.81	11	5.19	172	81.13	40	18.87
	State Level Market	52	55.91	41	44.09	93	100.00	0	0.00
PE - Pollution Emission	Direct & Indirect PE	0	0.00	0	0.00	253	100.0	0	0.00
	Indirect PE	0	0.00	0	0.00	12	23.08	40	76.92
MPC - Measures of Pollution Control	Compulsory NoC- PCB	253	95.47	12	4.53	0	0.00	0	0.00
	Optional NoC - PCB	0	0.00	40	100.0	0	0.00	0	0.00

Mean			74.18		25.82		80.36		18.76
Std. Deviation			36.00		24.87		34.49		18.39

The table-1 is exhibiting the current condition of environmental practice in sample firms. There are 07 group variables including 2 objective variables (pollution emission and measure of pollution control) and 16 sub-variables of group variables including four sub-variables of two objective variables (direct & indirect pollution emission and indirect pollution emission under pollution emission, and compulsory no-objection-certificate from pollution control board and optional no-objection-certificate from pollution control board under measure of pollution control). Out of total sample size, 265 firms have compulsory no-objection-certificate from pollution control board and 40 firms have optional no-objection-certificate from pollution control board. From above table, the data related to firm's size of capital, 84.47 per cent firms are emitting pollution directly & indirectly and 15.33 per cent firms are emitting pollution indirectly out of total small scale (103) firms; and 82.18 per cent firms are emitting pollution directly & indirectly and 17.82 per cent firms are emitting pollution indirectly out of total micro sized (202) firms. Here small and micro sized firms are emitting more pollution quantity directly & indirectly, it is due to type of production and source of inputs i.e. machine based production, capacity to produce more goods and goods classified under non food grade item. The input may be energy, power, fuel, chemical and toxic material; jointly all the factors are responsible for direct & indirect pollution emission. In case of firm's constitution, 80.12 per cent firms are emitting pollution directly & indirectly and 19.88 per cent firms are emitting pollution indirectly out of total proprietorship (161) firms; 88.30 per cent firms are emitting pollution directly & indirectly and 11.70 per cent firms are emitting pollution indirectly out of total partnership (94) firms and 82 per cent firms are emitting pollution directly & indirectly and 18 per cent firms are emitting pollution indirectly out of total limited liability (50) firms. Here all types of firms are emitting almost similar quantity of pollution effluent.

In case of production types, 82.95 per cent firms are emitting pollution directly & indirectly and 17.05 per cent firms are emitting pollution indirectly out of total manufacturing (305) firms, there is not any sample of service firm. It is evident that, manufacturing firm with bigger capital size, mechanical & chemical based operation is excreating more pollution than firm with lesser capital base or manual based operation. As well as, when firm is a manufacturing unit, it require at least some chemical or fossils fuel as a direct inputs or as a indirect input (utility) to run machine, which is basic cause of

direct and indirect pollution. In case of secured & unsecured loan, 82.95 per cent firms are emitting pollution directly & indirectly and 17.14 per cent firms are emitting pollution indirectly out of total firms which have borrowed fund from banks; 84 per cent firms are emitting pollution directly & indirectly and 16 per cent firms are emitting pollution indirectly out of total firms which have borrowed fund from unsecured sources.

The firm which has borrowed fund from bank is obviously of larger capital size, engaged in manufacturing and has compulsory NoC of PCB along with declaration of input and quantity/properties of pollution emission; they emit more pollution directly & indirectly without fear & ethics because the firm is registered with PCB i.e. indirectly we can say that after obtaining NoC certificate from PCB, firm discharges more pollution unethically. In case of secured & unsecured loan, 82.95 per cent firms are emitting pollution directly & indirectly and 17.14 per cent firms are emitting pollution indirectly out of total firms which have borrowed fund from banks; 84 per cent firms are emitting pollution directly & indirectly and 16 per cent firms are emitting pollution indirectly out of total firms which have borrowed fund from unsecured sources. The firm which has borrowed fund from bank is obviously of larger capital size, engaged in manufacturing and has compulsory NoC of PCB along with declaration of input and quantity/properties of pollution emission; they emit more pollution directly & indirectly without fear & ethics because the firm is registered with PCB i.e. indirectly we can say that after obtaining NoC certificate from PCB, firm discharges more pollution unethically.

In case of quality control norms, 31.43 per cent firms are emitting pollution directly & indirectly and 68.57 per cent firms are emitting pollution indirectly out of total (35) firms having facility of QC as per norms, 55.56 per cent firms are emitting pollution directly & indirectly and 44.44 per cent firms are emitting pollution indirectly out of total (63) firms without quality control norms, and 100 per cent firms are emitting pollution directly & indirectly out of total (207) firms which have outsourced facility of quality control. Here all 207 numbers of firms are emitting pollution directly & indirectly in unethical way which is quite harmful for nature, society as well as for itself also. In case of selling areas, 94.81 per cent firms are emitting pollution directly & indirectly and 5.19 per cent firms are emitting pollution indirectly out of total (212) firms having local sells territory;

and 55.91 per cent firms are emitting pollution directly & indirectly and 44.09 per cent firms are emitting pollution indirectly out of total (93) firms having sells areas up to state level. Here, majority of firms are selling their product locally without considering quality, integrity of environment and society; they are emitting more pollution and hazardous effluents because they feel them-self local and confident to solve problems unethically/illegally. In case of measure of pollution control, 95.47 per cent firms are emitting pollution directly & indirectly and 4.53 per cent firms are emitting pollution indirectly, all these firms have obtained compulsory NoC from PCB; and all 40 firms are emitting pollution indirectly have obtained optional NoC from PCB. In of case measure of pollution control, firms belongs to any of the group or sub-group have either compulsory NoC from PCB (for 265 firms) or have optional NoC from PCB (for 40 firms) which is higher than all firms emitting direct & indirect pollution effluents (253).

It is clear that direct & indirect excretion of pollution effluent by number of units is higher than indirect excretion of pollution effluent. The both the small and micro sized registered firms, firms with any type of constitution, manufacturing firms, firms outsourcing quality control service, firms with local sells territory are emitting pollution directly & indirectly as well as indirectly. The direct & indirect excretion of pollution effluent by 74.18 per cent firms possessing all most all or some characteristics of firm and remaining 25.82 percent firms are emitting indirectly pollution is also possessing all most all or some characteristics. In case of measure of pollution control, 80.36 per cent firms have obtained compulsory NoC from PCB and remaining 18.76 per cent firms have optional NoC from PCB are possessing all or some characteristics of firm. It should be rationalize that, 80.36 percent firms are really protecting environment after acquiring compulsory NoC from PCB or they are using NoC of PCB as an instrument to protect them self from legal action/sue against unethical production process and emission of pollution effluent.

## 5. Conclusion

From above discussion it is observed that environmental practice for green market mechanism is almost negligible in Indian SME, although all SMEs have NoC from PCB. There are nexus between PCB and borrower, between borrower and equipment supplier, between borrower and his auditor as well as between supplier and his auditor. The owner/manager wholly agree to participate in environmental practice for regulatory compliance only rather than actual implication of environmental

variable for market mechanism. The market mechanism which is deriving market demand of finished goods, demand of factor items (here raw material and utilities) and distribution of finished product are creating mismatch between each other. If market demand of raw material is impure (with negative externalities), it leads to produce impure goods; similarly if production process is fully/partially depend on negative externalities, it leads to impure output; and unethical distribution system (with negative externalities) of finished goods, it leads to hazardous market & distribution system. At present and in coming era of international business there is dire need of readiness for green market mechanism which should be fully depends on clean environmental practice.

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