EP Journal of Business Management

Volume No. 12

Issue No. 1

January - April 2024

ENRICHED PUBLICATIONS PVT. LTD

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EP Journal of Business Management

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(Volume No. 12, Issue No. 1, January - April 2024)

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Green Innovative Entrepreneurship and Waste Management

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ABSTRACT

This paper demonstrates the innovative entrepreneurial activities for waste management. Americans alone are responsible for producing a hopping of 220 million tons of waste in a year. In the next 12 years alone, South Asia — and "mainly India" — will be the fastest growing region for waste generation, says a paper published (Oct 31) in Nature. About 0.1 million tonnes of municipal solid waste is generated in India every day. That is approximately 36.5 million tonnes annually. Per capita waste generation in major Indian cities ranges from 0.2 Kg to 0.6 Kg. Difference in per capita waste generation between lower and higher income groups range between 180 to 800 gm per day. The urban local bodies spend approximately Rs.500 to Rs.1500 per tonne on solid waste for collection, transportation, treatment and disposal. About 60-70% of this amount is spent on collection, 20-30% on transportation and less than 5% on final disposal. Calorific value of Indian solid waste is between 600 and 800 Kcal/Kg and the density of waste is between 330 and 560 Kg/m3. Waste collection efficiency in Indian cities ranges from 50% to 90%. Out of the total municipal waste collected, on an average 94% is dumped on land and 5% is composted. This number is far more in other nation of the world. Accumulation of waste causes earth surface temperature and sub ocean temperature to rise. This could affects forest area ,water supplies, desert area, rainfall etc. Because of this fact both the government and environmental associations have developed various methods of dealing with the problem. More and companies are also making wealth from waste by using new innovative methods of turning garbage in to gold. In the paper various innovative techniques of turning garbage in to gold will be discussed.

Keywords: Green innovative entrepreneurship, waste management.

1. INTRODUCTION

Innovative Entrepreneurship

Entrepreneurship is the process of starting a business or other organization. The entrepreneur develops a business model, acquires the human and other required resources, and is fully responsible for its success or failure. Innovative entrepreneur is a person who comes up with new ideas and puts them into practice regardless whether similar ventures already exists or not. Innovative entrepreneur acts different to think different and at the end they make a difference. They regularly ask provocative

questions, observe the world like anthropologists, network with diverse people to get new ideas, experiment to figure out novel solutions and connect with typically unconnected insights to create disruptive new business ideas. By doing this they add new value to our lives and our economy as they find new solutions to the problem we face. In order to ensure any venture it is important that innovation and entrepreneurship complement each other. These innovative entrepreneurs can also help in turning the environment from Grey to Green. By using new innovative techniques in waste management entrepreneur can turn garbage in to gold.

Waste Management

Waste management is generation, prevention, characterization, monitoring, treatment, handling and reuse of residual disposition of solid wastes. There are various types of solid waste including municipal (residential, institutional, commercial), agricultural, and special (health care, household hazardous wastes, sewage sludge). The term usually relates to materials produced by human activity, and the process is generally undertaken to reduce their effect on health, the environment or aesthetics.

There is a wide array of issues relating to waste management and those areas include:

- Generation of waste
- Waste minimization
- Waste removal
- Waste transportation
- Waste treatment
- Recycling and reuse
- Storage, collection, transport, and transfer
- Treatment
- Landfill disposal
- Environmental considerations
- Financial and marketing aspects
- Policy and regulation
- Education and training
- Planning and implementation.

Central Principles of Waste Management

Diagram of the waste hierarchy

There are a number of concepts about waste management which vary in their usage between countries or regions. Some of the most general, widely used concepts include:

1. Waste hierarchy - The waste hierarchy refers to the "3 Rs" reduce, reuse and recycle, which classify waste management strategies according to their desirability in terms of waste minimization. The waste hierarchy remains the cornerstone of most waste minimization strategies. The aim of the waste hierarchy is to extract the maximum practical benefits from products and to generate the minimum amount of waste; recovery. The waste hierarchy is represented as a pyramid because the basic premise is for policy to take action first and prevent the generation of waste. The next step or preferred action is to reduce the generation of waste i.e. by re-use. The next is recycling which would include composting. Following this step is material recovery and waste-to-energy. Energy can be recovered from processes i.e. landfill and combustion, at this level of the hierarchy. The final action is disposal, in landfills or through incineration without energy recovery. This last step is the final resort for waste which has not been prevented, diverted or recovered. The waste hierarchy represents the progression of a product or material through the sequential stages of the pyramid of waste management. The hierarchy represents the latter parts of the life-cycle for each product.

2. Life-cycle of a Product - The life-cycle begins with design, then proceeds through manufacture, distribution, use and then follows through the waste hierarchy's stages of reuse, recovery, recycling and disposal. Each of the above stages of the life-cycle offers opportunities for policy intervention, to rethink the need for the product, to redesign to minimize waste potential, to extend its use. The key behind the life-cycle of a product is to optimize the use of the world's limited resources by avoiding the unnecessary generation of waste.

3. Resource efficiency - the current, global, economic growth and development can not be sustained with the current production and consumption patterns. Globally, we are extracting more resources to produce goods than the planet can replenish. Resource efficiency is the reduction of the environmental impact from the production and consumption of these goods, from final raw material extraction to last use and disposal. This process of resource efficiency can address sustainability.

4. Polluter pays principle - the Polluter Pays Principle is a principle where the polluting party pays for the impact caused to the environment. With respect to waste management, this generally refers to the requirement for a waste generator to pay for appropriate disposal of the unrecoverable material.

How Green Innovative Entrepreneurs turn garbage into gold and create wealth out of waste

More and more companies are making wealth from waste and, in the process, saving the environment from devastation. Business Today looks at five of these green businesses.

Fabric from Plastic

Arora Fibres recycles discarded plastic bottles into polyester used as packaging material Don't chuck out those plastic bottles that have been piling up in your kitchen for days. They can be re-used to make polyester fabric. Rupinder Singh Arora, Chairman of Arora Fibres Ltd, has been recycling discarded plastic bottles into polyester staple fibre since 1994 after he saw the colossal damage to the environment from mountains of bio-degradable plastic being burned in the country. "We were the pioneers in this field. Apart from a commercial interest , converting PET Into polyester has a huge positive impact on the environment," says Arora. PET stands for polyethylene terephthalate. Arora brought the technology to India after tying up with Korean company Mijung, which specialized in converting PET bottles into polyester yarn. His factory in the industrial belt of Silvassa in Dadra & Nagar Haveli has the capacity to process 18,000 tonnes of plastic a year and he plans to increase that to 48,000 tones by next year. Arora says the environmental benefit of recycling discarded plastic bottles is enormous. "By recycling 10 billion PET bottles, one can save one million square yards of landfill space and eliminate 0.25 million tonnes of carbon dioxide released into the atmosphere. and recycling one kg of PET saves around 25,000 BTUs (British Thermal Units)," he says. Plastic has clearly been profitable for Arora Fibres. It tapped the primary market in 1994 to raise Rs 9.6 crore to set up the Silvassa plant and logged Rs 34 crore in revenues in the financial year that ended March 2013. It hopes to touch Rs 75 crore this year. The polyester fibre has a huge market in many industries such as automobiles and is also used as packaging material for beverages, food products, pharmaceuticals consumer and industrial products. But the business has had its ups and downs.

Although there are about 20 players who convert nearly 300,000 tonnes of PET bottles into polyester fibre each year, the industry depends on rag pickers for raw material. Arora says the industry was also hit by an increase in raw material prices and a fall in finished product prices. "The shortage of raw material and the power problems until 2010 in Silvassa have been the reasons why others overtook us in the business," he says."Despite competition and profitability getting squeezed, net margins remain healthy at 10 per cent.

Liquid Gold

Wabag is helping companies clean up their act by reusing waste water it is sometimes said that water, and not oil, is the real liquid gold today. Water technology company VA Tech Wabag would certainly agree. The Chennai-based company recycles industrial and municipal waste water either for reuse as drinking water or to plough back for industrial use. And money has been flowing like water. Executive Director Amit Sengupta says 10 to 15 per cent of the company's revenues come from recycling, but he expects it to account for 50 per cent of Wabag's business in the next 10 years. Last year, the company recorded revenues of Rs 1,000 crore in India. Wabag has helped many companies clean up their act. Six years ago, it stepped in to help Indian Oil Corp's Panipat refinery when a farmers' lobby in Haryana raised a hue and cry over the company's waste water discharge. The water treatment company recycled the entire plant's waste water discharge and made it as pure as drinking water. It will build an effluent treatment plant with recycling facilities for Reliance Industries' purified terephthalic acid plant in Dahej and a tertiary treatment plant for the Reliance petrochemicals complex in Hazira. Sengupta says though a scare resource, water is cheap in India and people will not reuse it until the government comes out with strict rules or water becomes more expensive. So, how much of the waste water is reusable? "The short answer is 'All of it'," says Sengupta. "But it depends on the quality for reuse as per customer requirements."

Green Power

Hanjer is turning solid waste into fuel to run power plants Ever wondered what happens to all that garbage at landfills dotting your city? You'd be surprised. Some of it can actually be recycled to generate power . Waste management company Hanjer Biotech Energies realised that when it kick started India's first green power plant in Jalgaon in Maharashtra this year by using a byproduct of solid waste as fuel. The biomass power plant had been closed because of the unavailability of husk rice, the raw material for fuelling the plant, which pushed Hanjer to turn to refuse derived fuel (RDF) from municipal solid waste to generate seven megawatts (MW) of green power.

The concept of converting waste to energy is not new, but Mumbai-based Hanjer plans to take it to a new level following the success of its experiment in Jalgaon. It plans to take over four to five closed biomass power plants in Maharashtra, Madhya Pradesh and Rajasthan to generate around 40 MW of green power and then set up a green power plant in Surat, Gujarat that runs completely on fuel from solid waste.

Usually, 20 to 30 per cent of supporting fuel such as coal or oil is used along with RDF to generate power.

The plant in Surat will use green fuel derived from waste from three of the company's solid waste processing facilities in the state to generate 15 MW of power. The plant has the potential to reduce green house gas emissions and will earn carbon credits for Hanjer. "Of the total 9,100 tonnes of waste which we process, around 18 to 20 per cent is green RDF. With the amount of green RDF produced after recycling the waste, we can run six 15 MW power plants," says Irfan Furniturewala, Founder and Chairman of Hanjer. How does the system work? Simple, green RDF is generated from dry municipal solid waste that is dried, crushed, screened and packed into brick form. The clean and nonpolluting fuel is used as a substitute for conventional fossil fuels such as coal which is in short supply. Hanjer posted revenues of Rs 410 crore in 2012/13 in an industry growing at 20 per cent a year.

Towering Heights

Microqual uses power transmission towers as telecom towers Next time you drive along the Mumbai-Pune express highway and don't experience any dropped calls on your cellphone, you should thank Mahesh Choudhary. He is the CEO of Microqual Techno, a telecom infrastructure services company that has tied up with Mumbai-based outdoor advertising company Guju Ads to use its 1,000 billboards and hoardings across 13 cities as telecom towers sites. "This will help telecom companies bring down operational costs by 40 per cent and capex by 30 per cent," says Choudhary, who sees huge potential from the new initiative as 35 per cent of India still does not have mobile coverage and more than 50 per cent does not have a continuous mobile network. Microqual is the first company in India to use power transmission towers as telecom towers. Apart from putting telecom antennas on the power transmission towers and running them as telecom mobile towers, the company is also capturing power that is lost during transmission and distribution to supply electricity to the telecom towers. Two sites are already operational - one in Kolar in Karnataka and another in Baddi in Himachal Pradesh. Microqual has exclusive rights for 10 years to use 85,000 Power Grid Corp of India transmission towers across Jammu & Kashmir, Rajasthan, Himachal Pradesh and Punjab. Only 50 towers have been put to use so far.

The journey to turn idle or waste resources into wealth started three years ago in Kerala when mobile services company Aircel wanted to set up telecom towers but found it difficult to operate within the cost it had estimated. Microequal used a combination of solar and wind power to operate the telecom tower site and cut fuel expenses by 40 per cent. The innovation is paying off: the company posted Rs 600 crore in revenues last year. "In the next three to four years, the innovative vertical will account for 25 per cent of our business," says Choudhary.

Cleaning E-Wasteland

Cerebra will extract precious and other metals from mountains of e-waste .Twenty years ago, tossing out an old toaster or much-used iron was unthinkable in India. Today, people don't think twice before changing computers and mobile phones almost every year. So, what happens to all the old gadgets and gizmos? They end up as e-waste.One Bangalore-based infotech company, Cerebra Integrated Technologies, is doing its bit to reduce the glut of e-waste that some activists say is potentially the most dangerous waste problem in the world. It is building India's largest e-waste recycling plant that will begin operations by the end of this year. The plant will have the capacity to process close to 90,000 tonnes of e-waste. "We wanted to find a solution to dispose of the e-waste left after the repair and refurbishing process was completed, and realised there were only one or two medium-sized players in this business," says Gururaja Upadhya, Co-founder and Director-Technical at Cerebra Integrated Technologies. But e-waste is also a treasure trove of precious and other metals. Cerebra sees big business in the mountains of e-waste in Bangalore which produces 200,000 tonnes of e-waste a year. The company plans to make its millions by extracting metals such as gold and platinum from the e-waste piling up in the city. A mobile phone, for example, is made up of a combination of rare earth and precious metals: it contains 250 mg of silver, 24 mg of gold and nine mg of palladium while a laptop has 1,000 mg of silver, 220 mg of gold and 500 grams of copper. Cerebra hopes to wrap up its Rs 110-crore acquisition of Singapore based Cimelia Resource Recovery this year, as part of its plans to make its mark in the global e-waste business. "The recycling business will bring in the maximum revenues for the group. In the next three to five years, we expect the business to be in excess of Rs 500 crore," says Upadhya. "More than 50 per cent of the company's revenue and profit would come out of our e-waste business."

Clearly, that's one recycle bin that's emptied regularly - but not deleted permanently.

Conclusion

The outcome of this analytical research provides a comprehensive analysis on innovative entrepreneurship and some key factors that affect those systems. The key findings are outlined below:

- Waste management involves a large number of different entrepreneurs, with different fields of interest. They all play a role in shaping the system .In the best of the cases, the innovative entrepreneurs play vital role in turning garbage in to gold. Communication transfer between the different stakeholders is of high importance in order to get a well functioning waste management system in the cities in developing countries.
- Solid waste management is a multi-dimensional issue. Green Entrepreneur general seek for equipment as a path to find solutions to the diversity of problems they face. This study shows that an effective system is not only based in technological solutions but also environmental, socio cultural, legal, institutional and economic linkages that should be present to enable the overall system to function.
- Solid waste services have a cost as any other services provided but in general the expenditures are not recovered. Resources are required with the objective of having skilled personnel, appropriate equipment, right infrastructure, proper maintenance and operation. The financial support of the central government, the interest of the innovative leaders in waste management issues, the participation of the service users and the proper administration of the funds are essential for a modernized sustainable system.
- .Fundamental is to produce reliable data and to create proper information channels within and between entrepreneur and government. . Decision makers, responsible for planning and policy making, need to be well informed about the situation of the cities in order to make positive changes, developing integrated waste management strategies adapted to the needs of the society considering their ability to pay for the services.
- Universities, research centers and centers of excellence have a very important role in preparing professionals and technicians in environmental fields, including waste management. Some developing countries have already seen the positive effects of investing in education and research by having cleaner cities, citizens assuming their responsibilities and higher status of solid waste workers..The information provided about the factors influencing solid waste management systems is very useful for any individual or organization interested in planning, changing or implementing a waste management system in a city.

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The Interrelationship of MSMES and Exports in India: An Empirical Validation.

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ABSTRACT

India is considered as one of the fastest rising economies of the world with an average growth rate of above 8% in the recent past. Micro, Small and Medium enterprise has emerged as a highly vibrant and dynamic sector of the Indian economy over the last six decades. The importance of MSME has been recognized in recent years in both developed and developing countries for its significant contribution in gratifying various socio-economic objectives such as higher growth of employment, output, promotion of exports and fostering entrepreneurship. The paper attempts to focus the present status of performance of MSMEs in India, growth patterns and future prospects. The Indian economy is expected to grow by over 8 per cent per annum until 2020 and can become the second largest in the world, ahead of the United States, by 2050, and the third largest after China and the United States by 2032. In this context it is very important to examine the role of MSMEs for economic growth of India. To examine the role of MSME sector in growth of Indian economy through exports, time series data has been collected from secondary sources mainly from MSME ministry website from 1991-2016.To gauge this, data is tested for stationarity using Augmented Dickey Fuller Test and Philip Perron and to test the long term dynamics and relationship between exports and MSME sector Johenson's Co integration approach is used, and to understand direction of causality Granger causality/Block Exogeneity Wald test is used to conclude the objective of the study. Amongst the key results it is found that there is Co- integration between them confirming a long term relationship .The results of a long run relationship between them is confirmed by Granger Causality and VAR Granger causality/Block Exogeneity Wald tests showing bidirectional causal relationship. Therefore this study concludes by recommending, the strategy to improve the manufacturing ability of the MSME sector is expected to improve the competitiveness of their products and enhance exports. Higher value addition, skill development and training, thrust on standardization and quality, access to affordable credit, impetus for innovation, etc. would be essential elements in this endeavour.

Keywords: Green innovative entrepreneurship, waste management.

1. INTRODUCTION

Micro, Small and Medium enterprise (MSME) has emerged as a highly vibrant and active sector of the Indian economy over the last six decades. This sector contributes significantly to manufacturing output, employment and exports of the country. It is estimated in terms of value, the sector accounts for about 45percent of the manufacturing output and 40 percent of the total exports of the country.

It is well known that MSME sector provides maximum opportunities for both self-employment and jobs, outside agriculture sector. The sector is estimated to employ about 69 million persons in over 26 million units throughout the country. MSMEs are complementary to large industries as ancillary units and this sector contributes enormously to the socio-economic development of the country. Ministry of Micro, Small & Medium Enterprises (MSME) envisions a vibrant MSME sector by promoting growth and development of the MSME Sector, including Khadi, Village and Coir Industries , in cooperation with concerned Ministries/Departments, State Governments and other Stakeholders, through providing support to existing enterprises and encouraging creation of new enterprises. The MSME sector is an important pillar of Indian economy as it contributes greatly to growth of Indian economy with a vast network of around 30 million units, creating employment of about 70 million, manufacturing more than 6000 products, contributing about 45% to manufacturing output and about 40% of exports, directly and indirectly.

The share of MSMEs in total exports is spread across different product segments. In case of items like Textiles, Leather Goods, Processed Food, Engineering Goods and Gems & Jewellery, export performance has been worthy over the years. The various sectors like Sports Goods are almost 100% export oriented. In view of this, export promotion from MSME sector has been accorded high priority in India's export promotion strategy which includes oversimplification of procedures, encouragement for higher production of exports, special treatment to MSMEs in market development fund, simplification of duty drawback rules etc.

The commitment with exports is very important for MSMEs according to the following reasons:

1. Increasing the exports and keep benchmarking their competitiveness is because of lowering of trade barriers and massive competition in domestic markets. The main indicator of their competitiveness is exports ability vis-a-vis, their corresponding part in other nations.
2. The second reason is that by actively participating in exports MSMEs can be more open to global quality standards, budding market trends with the help of which they can take more rational decisions.

There is a radical change in the economic environment in which MSME are operating, domestic as well as international. Hence as a result now they are open to intensive, dynamic global environment. Therefore, it becomes essential for MSME to reinforce their competitiveness for their basic survival and expansion. Technology is one of the factors that add determinedly in constructing the competitiveness in industries as well as nations. Performance of Micro, Small & Medium Enterprises (MSME) Sector in the country is assessed mainly:

a. By conducting of periodic All India Census of the Sector.

b. By collecting the number of Entrepreneur Memorandum Part-II (EM-II) filled at DICs.

(Replaced with Udyog Aadhaar online filing system since September, 2015).

Since the conduct of Fourth All India Census of MSME, 2006-07, the trends in MSME sector is assessed with the help of number of EM-II filled at DICs over the years. However, estimates based on trends of Number of Working Enterprises, Employment, and Market value of Fixed Assets based on the Fourth All India Census of MSME is projected for latest years.

The latest census conducted was Fourth All India Census of MSME. The Census was conducted with reference year 2006-07, wherein the data was collected till 2009 and results published in 2011-12. The results made use of Economic Census, 2005 (EC, 2005) conducted by Central Statistics Office (CSO), Ministry of Statistics & Programme Implementation (MoSPI) for activities excluded from Fourth All India Census of MSMEs: 2006-07 for Unregistered Sector, namely wholesale/retail trade, legal, educational & social services, hotel & restaurants, transports and storage & warehousing (except cold storage).

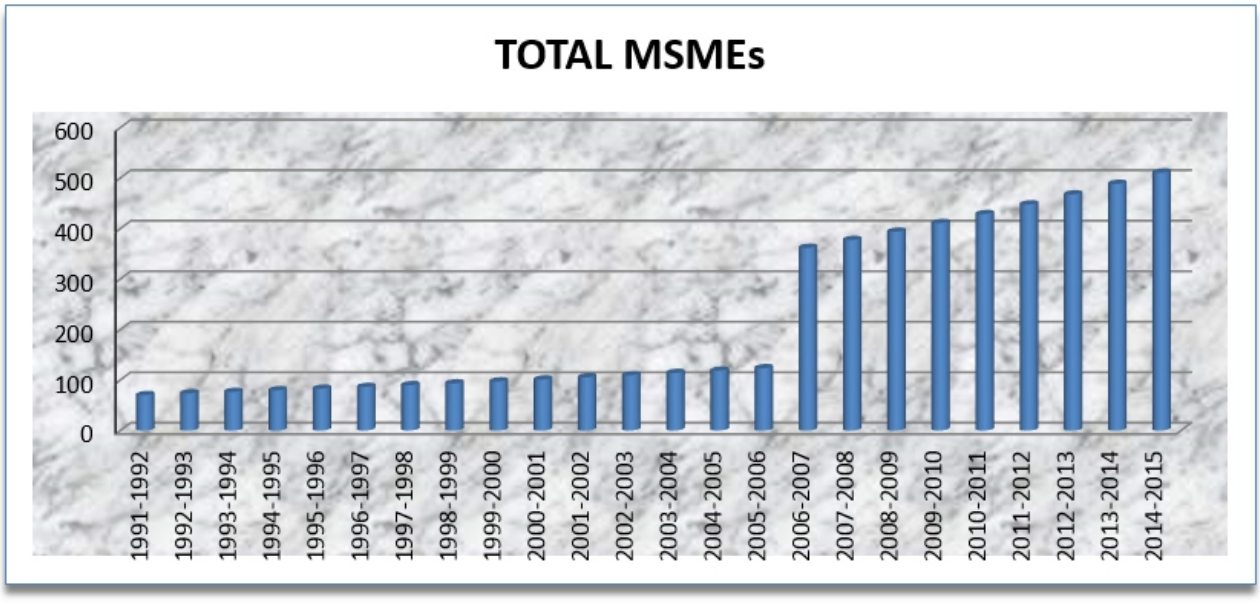
Table 1: Fourth All India Census of MSME are as noted below

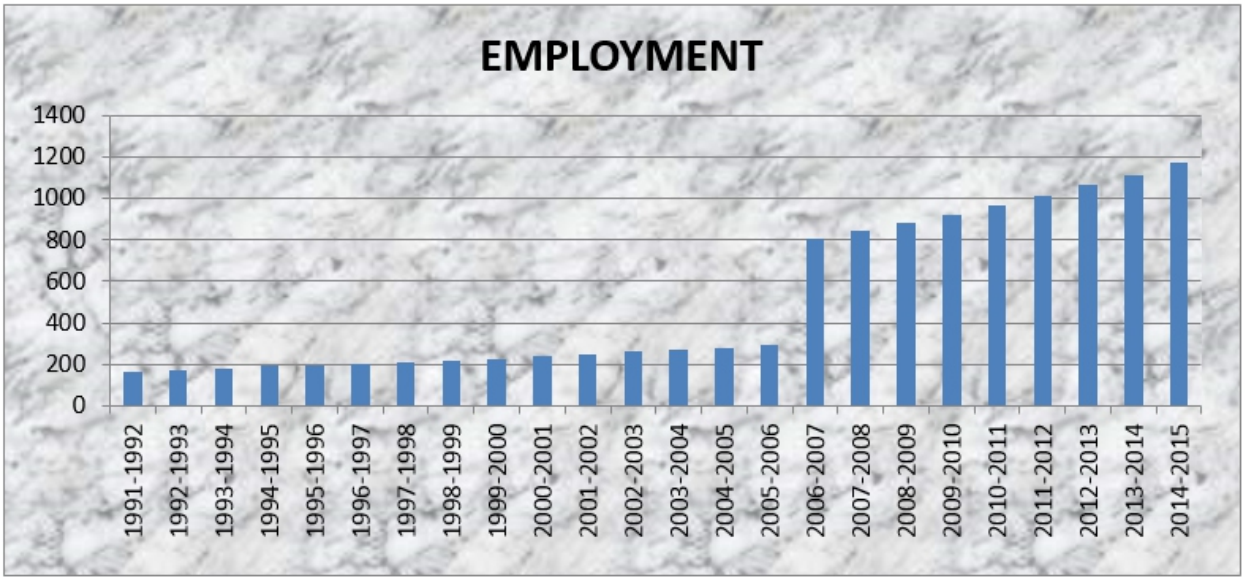
SI.NO	Characteristics	Registered sector	Unregistered sector	Economic Census-2005	Total
I	II	III	IV	V	VI
1	Size of sector (In lakh)	15.64	198.74	147.38	361.76
2	No. of rural units (In lakh)	7.07	119.68	73.43	200.18
3	No. of Women Enterprises (in Lakh)	2.15 (13.72%)	18.06 (9.09%)	6.4 (4.34%)	26.61 (7.36%)
4	Total Employment (in Lakh)	93.09	408.84	303.31	805.24
5	Per Unit Employment	5.95	2.06	2.06	2.23

The estimated trends in regard to performance of MSME sector with respect to Total Working Enterprises, Employment, and Market Value of Fixed Assets, based on Fourth All India Census of MSME are as noted below:

Table 2: Performance of MSME, Employment and Investment

SI.NO	Year	Total working Enterprise	Employment (In lakh)	Market Value of Fixed Assets (Rs in
I	II	III	IV	V
1	2000-2001	101.01	238	146845
2	2001-2002	105.21	249	154349
3	2002-2003	109.49	260	162317
4	2003-2004	113.95	271	170219
5	2004-2005	118.59	282	178699
6	2005-2006	123.42	294	188113
7	2006-2007	361.76	805	868,543.79
8	2007-2008#	377.36	842	920,459.84
9	2008-2009#	393.7	881	977,114.72
10	2009-2010#	410.8	922	1,038,546.08
11	2010-2011#	428.73	965	1,105,934.09
12	2011-2012#	447.64	1,012	1,182,757.64
13	2012-2013#	447.54	1,061.40	1,268,736.67
14	2013-2014#	488.46	1,114.29	1,363,700.54
15	2014-2015#	510.57	1,171.32	1,471,912.94

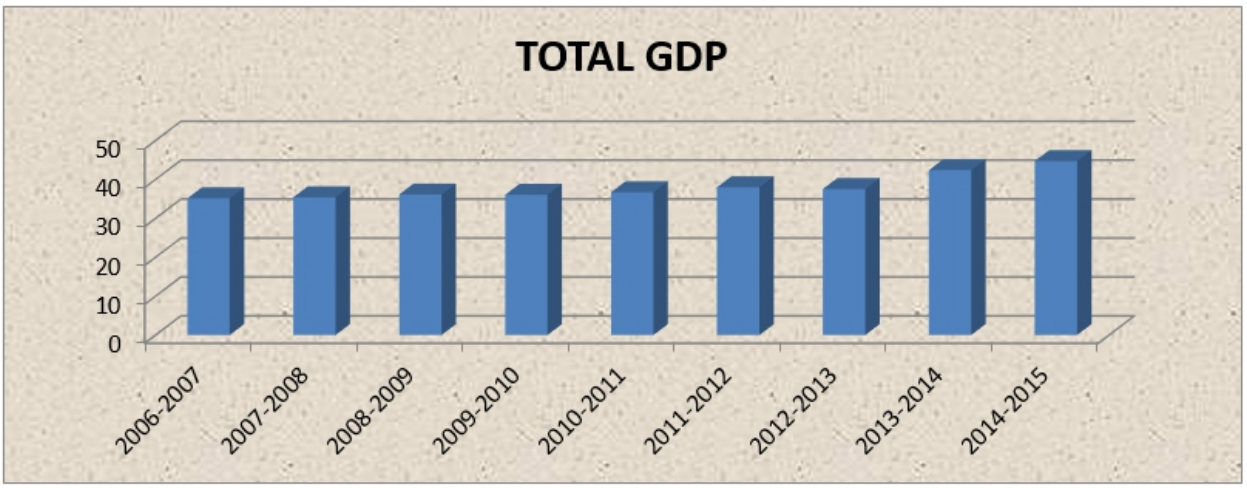




Contribution of MSME Sector in the Gross Domestic Product

As per the revised methodology suggested by CSO, Mo SPI, on the basis of the data on Gross Domestic Product (GDP) published by CSO, Mo SPI and final results of the latest census (Fourth Census), the estimated contribution in Table 3: MSME sector to GDP and Output, during 2006-07 to 2012-13, are as noted below:

Year	Gross value of output of MSME Manufacturing Sector	Share of MSME Sector in Total GDP (%)			Share of MSME Manufacturing output in Total Manufacturing Output (%)
		Manufacturing Sector MSME	Services Sector MSME	Total	
2006-2007	1198818	7.73	27.40	35.13	42.02
2007-2008	1322777	7.81	27.60	35.41	41.98
2008-2009	1375589	7.52	28.60	36.12	40.79
2009-2010	1488352	7.45	28.60	36.05	39.63
2010-2011	1653622	7.39	29.30	36.69	38.50
2011-2012	1788584	7.27	30.70	37.97	37.47
2012-2013	1809976	7.04	30.50	37.54	37.33



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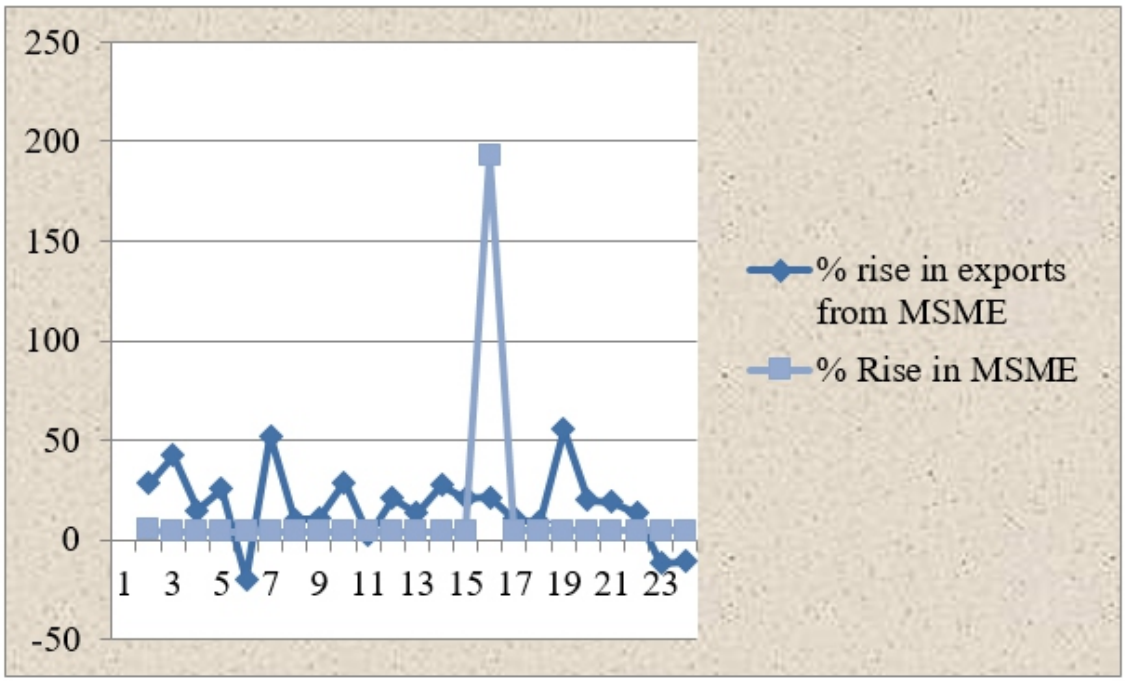
Hence worldwide, the MSMEs have been accepted as the engines of economic growth for promoting equitable development and have emerged as the single most important sector generating employment, next only to the agricultural sector, helps in increasing exports which in turn helps in increasing Forex reserves, which are very important for economic development of the country. They include a mixed group of activities in the manufacturing, services, and trade and agribusiness sectors. The major benefit of this sector is its employment potential at low capital cost. The labour strength of the MSME sector is much higher than that of the large enterprises. In India too, the MSMEs play a essential role in the economy of the Country. In recent years, this sector has consistently registered higher growth rates compared to the overall Industrial Sector. Table 4: Export Performance of Indian MSMEs Sector

Sr. No.	Year	India's Total Exports	Annual Growth Rate (%)	Exports from MSME Sector	Annual Growth Rate (%)	% share of MSMEs Exports in Total Exports
1	2	3	4	5	6	7
1	1991-1992	44042	35.27	13883	43.65	31.57
2	1992-1993	53688	21.90	17784	28.10	33.12
3	1993-1994	69571	29.91	25307	42.30	36.28
4	1994-1995	82674	18.52	29068	14.86	35.15
5	1995-1996	106353	28.64	36470	25.46	34.29
6	1996-1997	118817	11.71	29248	7.62	33.03
7	1997-1998	130101	9.49	44442	13.23	34.15
8	1998-1999	139753	7.41	48979	10.21	35.04
9	1999-2000	159561	14.17	54200	10.66	33.96
10	2000-2001	203571	27.58	69797	28.78	34.28
11	2001-2002	209018	2.67	71244	2.07	34.08
12	2002-2003	255137	22.06	86013	20.73	33.71
13	2003-2004	293367	14.98	97644	13.52	33.28
14	2004-2005	375340	27.94	124417	27.42	33.14
15	2005-2006	456418	21.60	150242	20.76	32.91
16	2006-2007	571779	25.27	182538	21.50	31.92
17	2007-2008	655864	14.70	202017	10.67	30.80
18	2008-2009	840755	28.19	214387	6.12	25.50
19	2009-2010	845534	00.56	238752	11.36	28.23
20	2010-2011	1142922	35.17	256834	7.57	22.47
21	2011-2012	1465959	28.26	283847	10.51	19.36



Objectives of the study

1. To identify the growth of employment and the performance of MSMEs in India & future prospects.
2. To know the trends and patterns of MSMEs in India.
3. To study the causality between MSMEs and Exports in India.

To achieve the objectives of the study it is divided into following sections. Section 1 i.e. the present section gives the overview of role of MSME sector in India followed by the review of literature contained in Section II. Section III gives the description of data and methodology used to conclude and achieve the objectives of the study. Section IV gives Analysis and Interpretations of results. Summary and conclusion is entailed in Section V, followed by summary and conclusion in

Section VI. Section VII gives details about the references used in the study.

II: REVIEW OF LITERATURE

This section contains the review of existing literature in India and across the globe. *Rajput, Rajput, Batra & Oberoi (2012)* studied the relationship of exports, Forex and MSMEs in India. The objective of this paper is to highlight the role of MSME sector in India and its contribution in Indian economy. This paper examines the relationship between MSMEs and exports in India to examine a causal relationship between exports, MSMEs and Forex reserves. To estimate this we employ, Augmented Dickey Fuller Test and Philip Perron, tests of stationarity, Johenson's co integration approach, and Granger causality/Block Exogeneity Wald tests to conclude the objective of the study. The data span for the study is from 1992-93 to 2009-10. Amongst the key results it is found: that there is a co integration between exports and MSMEs confirming a long-term relationship and bidirectional causality using Granger causality and block Exogeneity test. The results of relationship between exports, Forex and MSMEs are confirmed using Vector Auto regression and by Granger causality and VAR Granger causality/block Exogeneity Wald tests showing bidirectional causal relationship in all variables. Therefore, this study concludes by recommending, the strategy to improve the manufacturing ability of the MSME sector to improve the competitiveness of their products and enhance exports and Forex reserves. *Rajput & Rajput (2012)* examined the relationship of exports and MSMEs in India The paper highlights the role of MSME sector in India, its growth patterns and contribution in Indian economy. This study examines the relationship the MSMEs and exports in India. To gauge this, data is tested for stationarity using Augmented Dickey Fuller Test and Philip Perron and the study uses the more recent data analysis technique like Johenson's co integration approach, Granger causality/Block Exogeneity Wald tests to conclude the objective of the study. The data span for the study is from 1982-2010.

Amongst the key results it is found: that there is a co integration between them confirming a long term relationship .The results of a long run relationship between them is confirmed by Granger Causality and VAR Granger causality/Block Exogeneity Wald tests showing bidirectional causal relationship. Therefore this study concludes by recommending, the strategy to improve the manufacturing ability of the MSME sector is expected to improve the competitiveness of their products and enhance exports. Higher value addition, skill development and training, thrust on standardization and quality, access to affordable credit, impetus for innovation, etc. would be essential elements in this endeavour. Garg & Walia (2012) examined the role of MSMEs in overall economic development of a country like India where millions of people are unemployed or underemployed & facing the problems of poverty. MSMEs are providing immediate large-scale employment, with lower investments and prove to be a second largest manpower employer, after agriculture and occupy a position of prominence in Indian economy. Keeping in above backdrop, the present paper is an attempt to highlight the growth and contribution of MSME sector in post reform India. The study confirmed that the significant growth of MSMEs have been taken place over a period of time and this sector is the major donor to gross domestic product (GDP), employment and exports in Indian economy. Therefore, we should encourage MSMEs to take proper care of Indian economy with concrete plan of action and its honest implementation. Dey (2014) has focussed on the importance of MSME has been recognized in recent years in both developed and developing countries for its significant contribution in gratifying various socio-economic objectives such as higher growth of employment, output, promotion of exports and fostering entrepreneurship. They play a crucial role in the industrial development of any country. The MSME sector is an important pillar of Indian economy as it contributes greatly to growth of Indian economy. This sector even assumes greater importance now as the country moves towards a faster and inclusive growth agenda. Moreover, it is the MSME sector which can help realize the target of proposed National Manufacturing Policy of raising the share of manufacturing sector in GDP from 16% at present to 25% by the end of 2022. The present paper is an attempt to focus the present status of performance of MSMEs in India & future prospects. It is concluded that this sector contributes significantly to manufacturing output, employment, exports of the country. Chaudhary (2014) studied the study of MSMEs which have been accepted as the engine of economic growth and for promoting equitable development. The major advantage of the sector is its employment potential at low capital cost. This constitutes over 90% of total enterprises in most of the economies and is credited with generating the highest rates of employment growth and account for a major share of industrial production and exports. In India too, the MSMEs play a pivotal role in the overall growth of the industrial economy of the country. Rather, Small and medium Enterprises in India are known as the backbone of the economy. The reason behind is that these enterprises are employing about 40% of India's workforce and contributing 45% to India's manufacturing output, they play a critical role in

generating millions of jobs, especially at the low-skill level. The country's 1.3 million SMEs account for 40% of India's total exports. The current scenario clearly states that the growth of our economy is impossible without the growth and development of these enterprises but these enterprises are far behind the large counterparts in the economy. Farajollahzadeh, Noorinasab &Yazdanpanah (2016) examined the development of the MSMEs sector came about primarily due to the vision of our late Prime Minister Jawaharlal Nehru who sought to develop core industry and have a supporting sector in the form of small scale enterprises. MSMEs sector has emerged as a dynamic and vibrant sector of the economy. The Indian economy is expected to grow by over 8 per cent per annum until 2020 and can become the second largest in the world, ahead of the United States, by 2050, and the third largest after China and the United States by 2032. In this context it is very important to examine the role of MSMEs for economic growth of India.

III: DATA METHODOLOGY

The data used in this study is secondary in nature which is mainly collected from Ministry Of Micro, Small & Medium Enterprises, publications, special reports and surveys, Government of India and many sources of RBI from the handbook of Indian economy. The period of study is from 1991-2016. Given the nature of the problem and the quantum of data, we first study the data properties from an empirical perspective starting with the stationarity of data. We employ co integration technique to understand the causality in exports and MSME sector. The time series stationarity of sample price series has been tested using Augmented Dickey Fuller (Goldar, 1985 and Gupta Shuchi and Neetu Mehndiratta, 2009). The ADF test uses the existence of a unit root as the null hypothesis. To double check the robustness of the results, Pietrobelli *et al., (*2006) test of stationarity has also been performed for the sample series.

Once we have established the long run relationship between the variables of the VAR model, the next logical step for our purpose is to examine the Granger-causal relationship among the variables. X is said to "Granger-cause" Y if and only if the forecast of Y is improved by using the past values of X together with the past values of Y, than by not doing so (Granger, 1969). Granger causality distinguishes between unidirectional and bidirectional causality. Unidirectional causality is said to exist from X to Y if X causes Y but Y does not cause X. If neither of them causes the other, then the two time series are statistically independent. If each of the variables causes the other, then a mutual feedback is said to exist between the variables. In order to test for Granger causality, we will estimate variable VAR model as follows, where all variables are initially considered symmetrically and endogenously. Then we have adopted the VAR Granger Causality/Block Exogeneity Wald Tests to examine the causal relationship

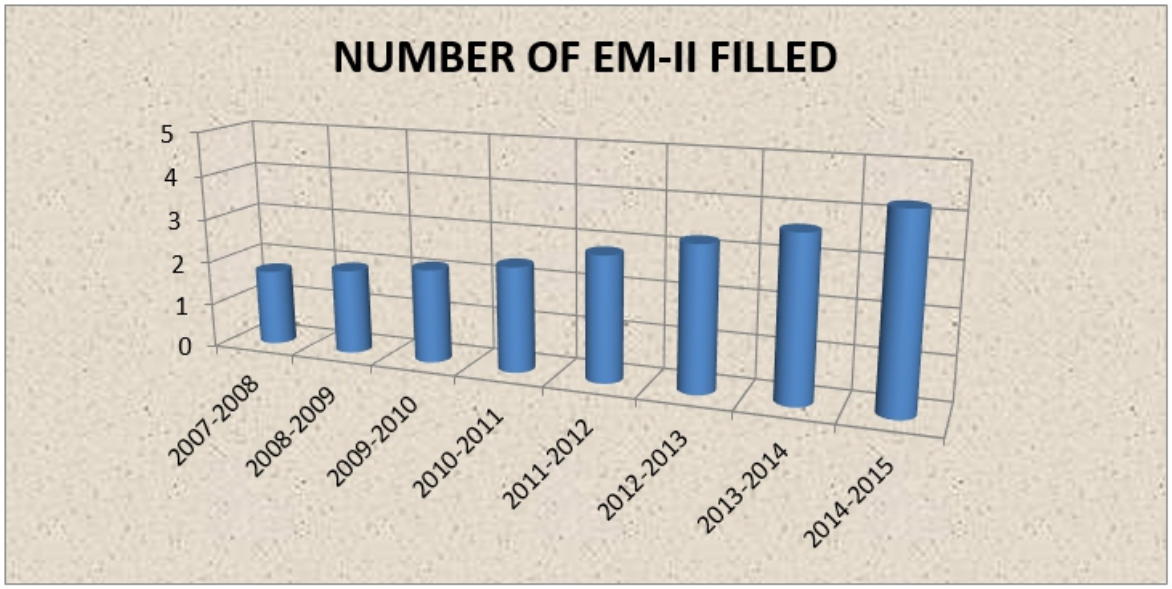
among the variables. Under this system, an endogenous variable can be treated as exogenous. We used the chi-square (Wald) statistics to test the joint significance of each of the other lagged endogenous variables in each equation of the model & also for joint significance of all other lagged endogenous variables in each equation of the model (Keshab Das, 2008).

IV: ANALYSIS AND INTERPRETATION OF RESULTS

1) Trends and Patterns of MSME in Indian Economy

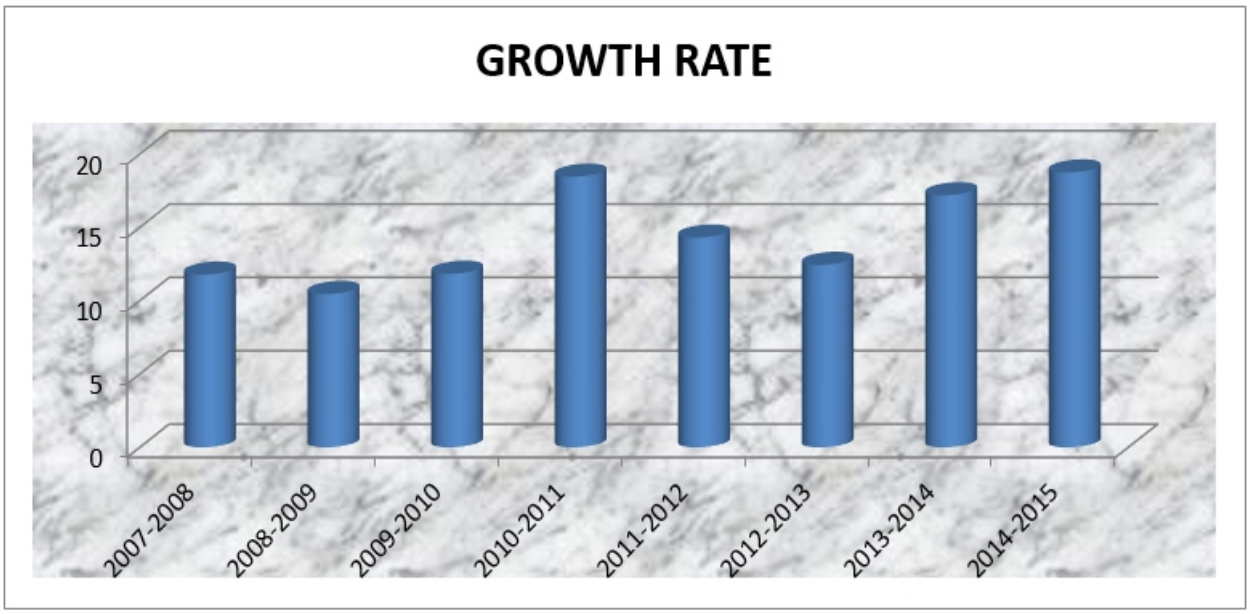
Subsequent to the implementation of Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 with effect from October 2006, filing of Entrepreneurs Memorandum Part – II / (EM-II) came into vogue. Since September 2015, the same has been replaced with Udyog Aadhaar online filing system .As per the provisions of the MSMED Act, 2006 filing of EM-II is discretionary in nature. However, MSMEs file EM-II at District Industries Centres (DICs), after commencement of the project. The information on number of EM-II filed by MSME at DICs was collected from the State/UT Commission rates/ Directorates of Industries to assess the trends in growth of MSME during 2007-08 to 2014-15 in the country. MSME has shown consistent growth in terms of number of EM-II filed 2007-08 with the District Industries Centres across the country was 1.73 lakh which increased to 1.93, 2.13, 2.38, 2.82, 3.23, 3.63 and 4.25 lakh during 2008-09, 2009-10, 2010-11, 2011-12, 2012-13, 2013-14 & 2014-15 respectively.

NUMBER OF EM-II FILED BY THE MSME DURING 2007-08 TO 2014-15



MSME has shown constant growth rate around 11% every year till 2010-11. The highest growth in recent time was recorded during 2011-12 (18.45%) whereas during year 2012-13 and 2013-14 growth rate was around 14% and 12%, respectively. But it jumped to 17% in 2014-15. However, recent data for 2015 i.e., from April-September, 2015 shown impressive growth of 18.74% (year-on-year growth)

ANNUAL GROWTH RATE ON PRECEDING YEARS



3. Causal relationship of Exports and MSME Sector*:*

The export rate has gone up in recent years. These are the highest common denominators that attest to the fact that India is emerging as an economic power house which can be easily attributed to MSMEs operating in India. The role of MSME have fuelled comprehensive growth and contributed in a profound manner towards constructing radiating global India. The underbelly of the present India's corporate landscape is MSMEs which have propelled the nation into the big union. There are many factors which have given boost to this sector like a influential workers, low cost benefits, decline in market instability, availability of resources, an aspiring Indian populace are some of the classic motivations why global corporations are at present very enthusiastic to control India's growing economic strength and vigour. There are many cities in India which were mainly dots on the map of world have now emerged and metamorphosed into a very important economic destinations facilitating the basic interests of these MNCs like Gurgaon, Ahemedabad and Pune and in increasing exports of the country. There is a rise in MSMEs and Exports, both exhibits a rising trend from (1991-2015).

There is a contention that there is a strong relationship between MSMEs and Exports and the rise in exports is attributed the growth of MSMEs operating in India. The exports from MSME sector have been clocking excellent growth rates in this decade mainly fuelled by performance of garments, leather, Jems & Jewellery for this sector. The product groups in which MSME sector dominates in the area of exports are sports goods, ready made garments, woollen garments, knit wear, plastic products, processed foods, & leather products. There is a reorientation of MSME sector export strategy embedding the trade regime of WTO and also improving the work culture through inclusion of ICT. The govt of India is constantly changing the policy regime in the favour of MSME sector owing to its importance & role which it can play in Indian economy. One end in case of MSME spectrum contains highly innovative & high growth enterprises which includes textiles & garments, leather & leather products, auto components, food processing. These sectors not only have high potential for growth but also contribute significantly in enhancing the country's exports. To understand the long term relationship between the two Johansen's co integration test was employed, which confirm the long term dynamics between these variable and confirm at least causality in one direction**.** If two or more series are themselves non stationary, but a linear combination of them was stationary, then the series are said to be co integrated. Before we employ co integration Test we check that the series are non stationary. Hence we have done stationarity test on the sample series, the results of stationarity tests are given in Table 5which confirm non stationarity of commodity price data, hence we repeat stationarity tests on return series (estimated as first difference of log prices) which are also provided in Table 5.

The sample return series exhibit stationarity thus confirming that sample series are integrated to the first order. Panel (A) shows existence of unit root, and Panel (B) shows results of unit root as integrated to order 1, i.e. I (I) using both Philip Perron Test (PP) and Augmented Dicker Fulley Test (ADF).To employ co integration technique it is a pre condition that the series have to non-stationary which is met. Hence we employ co-integration techniques to determine the existence of a stable long-run relationship between the exports and MSMEs operating in India. Co integrating methodology fundamentally proceeds with non stationary nature of level series and minimizes the discrepancy that arises from the deviation of long run equilibrium. The observed deviations from long-run equilibrium are not only guided by the stochastic process and random shocks in the system. Co integration implies linear combinations of both level series cancelling the stochastic trend; thereby producing a stationary series. Johansen's co integration test is more sensitive to the lag length employed. Besides, inappropriate lag length may give rise to problems of either over parameterization or under parameterisation. The objective of the estimation is to ensure that there is no serial correlation in the residuals (Dhar and Lydall, 1961, Bhavani, 1991 and Roxas, 2007). Here, Akaike information criterion (AIC) is used to select the optimal lag length and all related calculations have been done embedding that lag length and

is coming to be 2 lags. The results are presented in Table 6. The co integration results are reported in Table 7. Results of co integration are obtained using the optimal lag length calculated using Var Lag Length Order Selection Criterion.

After analysing that there is significant co integration in the sample series we employ Granger Causality Test to know the causality between the two variables. Granger causality is a statistical concept of causality that is based on prediction. According to Granger causality, if a signal X1 "Granger-causes" (or "G-causes") a signal X2, then past values of X1 should contain information that helps predict X2 above and beyond the information contained in past values of X2 alone. “Granger causality” is a term for a specific notion of causality in time-series analysis. The idea of Granger causality is a pretty simple one: A variable X Granger-causes Y if Y can be better predicted using the histories of both X and Y than it can using the history of Y alone. It runs two bivariate equations

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \ldots + \alpha_l y_{t-l} + \beta_1 x_{t-1} + \ldots + \beta_l x_{-l} + \epsilon_t$$

$$x_t = \alpha_0 + \alpha_1 x_{t-1} + \ldots + \alpha_l x_{t-l} + \beta_1 y_{t-1} + \ldots + \beta_l y_{-l} + u_t$$

for all possible pairs of series (x & y) in the group. The reported F-statistics are the Wald statistics for the joint hypothesis:$\beta 1 = \beta 2 = \beta i = 0$ for each equation. The null hypothesis is that does not Granger-cause in the first regression and that does not Granger-cause in the second regression. The test results are given in table 8. The results exhibited in Table 8 confirm the bidirectional causality between MSMEs and Exports with p value < 0.05 in both cases which signifies rejection of null hypothesis. Hence the test results confirm bidirectional causality of the two variables namely MSME sector and Exports. To give robustness in the results of causality the process is repeated using Var Granger Causality/Block Exogeneity Wald Tests. The optimal lag length is taken into consideration using AIC information criterion. The results are reported in Table 9. The results of the VAR Granger Causality/Block Exogeneity Wald Tests also convey and confirm the bidirectional causality as exhibited by Granger causality Test ,with significant P-Value <0.05.

V: SUMMARY AND CONCLUSIONS

The Micro, Small and Medium Enterprises play a very positive and constructive role in strengthening this sector. The performance of this sector is now assessed by conducting of periodic All India Census of the sector and also by collecting the number of Enterpreneur Memorandum Part-II filled at DICs. The MSMEs have been accepted as the engines of economic growth for promoting equitable development and have emerged as the single most important sector generating employment, next only

to the agricultural sector, which are very important for economic development of the country. They encompass a heterogeneous group of activities in the manufacturing, services, and trade and agribusiness sectors. The major advantage of this sector is its employment potential at low capital cost. The labour intensity of the MSME sector is much higher than that of the large enterprises. In India too, the MSMEs play a pivotal role in the economy of the Country. Hence an important strategy which will improve the manufacturing ability of the MSME sector is very important that will help to improve the competitiveness of their products and enhance exports. It is empirically proved in the study that there is a confirmed strong causality between MSME sector and Exports. There are some key issues which have to be properly addressed like higher value addition, skill development and training, thrust on standardization and quality, access to affordable credit, impetus for innovation, etc and should become the part in the main streaming of strategy formulation. Key areas which are very vital in framing the policy formulation include Skill Development and Training, Infrastructure Development, Access to affordable Credit, momentum for Technology Upgradation and Innovation, Providing main Marketing sustainability and Brand Building with adequate Institutional Structure and special support for MSMEs.

Table 5: Results of stationary of Data

NAME	**PANEL –A**		**PANEL-B**	
	ADF (Test)	**Phillips-Perron Test**	**ADF (Test)**	**Phillips-Perron Test**
	T-statistics	**T-statistics**	**T-statistics****	**T-statistics****
Exports	-1.08	-0.50	-41.97**	-41.97**
MSME	1.11	-1.37	-41.34**	-41.31**
Forex	0.77	-0.64	-32.95**	-42.6*

**Significant at 5% level

Table 6: Var Lag Order Selection Criteria

Lag	Log L	LR	FPE	AIC	SC	HQ
0	-473.2136	0.000	1.42e+21	59.52671	59.67157	59.53413
1	-429.2684	65.91789	1.86e+19	55.15855	55.73799	55.18822
2	-400.2648	32.62898*	1.79e+18*	52.65811*	53.67213*	52.71003*

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Table 7 : Results of Johansen's Co integration test.

Name	Hypothesis		Lag length		Trace	Critical Value**	R=0, Accept R=1,Reject
EXPORTS & MSME SECTOR	Null	Alternate	Criterion(Sc)	Max Eigen value	Statistic	5% Sig Level	P-Value (0.030)
			-13.02				
	R=0	R=		37.77	16.78395	15.48**	Reject

The null is rejected at five percent level and there is a significant co integration in MSME sector and exports as is evident from the P-Value significant at 5 % (**).

Table 8: Results of Granger Causality, Pair wise Granger Causality Tests, Lags two

Null Hypothesis:	F-Statistic	Probability
Total_MSMES does not Granger Causes Exports	4.99429	0.027*
Exports does not Granger Cause Total_MSMES	5.99726	0.006*

(**) shows significant relationship at 5 % level of significance

Table 9: VAR Granger Causality/Block Exogeneity Wald Tests

DEPENDENT VARIABLE: EXPORTS		
EXCLUDED	Chi-sq	Prob.
TOTAL_MSMES	9.988604	0.0067**
ALL	9.988604	0.0067**
DEPENDENT VARIABLE: TOTAL MSMES		
EXCLUDED	Chi-sq	Prob.
EXPORTS	11.99453	0.0024**
ALL	11.99453	0.0024**

(**) shows significant causality at 5% level of significance

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Reverse Mentoring For Knowledge Transfer: An Innovative Alternate to Mentoring

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A B S T R A C T

Reverse Mentoring is the advanced form of traditional mentoring method. The junior staff members appointed recently guides their seniors to make them aware about the effects of technological advancement on their routine working. The study is descriptive in nature. This study explores the scope of reverse mentoring as an effective tool to face the environmental challenges for the business firm. This study investigates the various experiences of the executives as well as academicians working on the teaching methods. The findings showed that few pre-requisites should be followed strictly to make the technique successful. The study concludes with the statement Reverse mentoring isn't just a one-way street."

RESEARCH BACKGROUND AND PURPOSE:

People often think that the longer you work for an organization, the more you know and the less you need to learn. However, younger members of staff who are just entering the workplace often have new skills and expertise, and they can provide fresh perspectives and ways of working that may benefit their more established colleagues. (Mind Tools) Today many organizations like Cisco, HP and The Hartford adopted the reverse mentoring as an ensured tool for success.

Anderson and Shannon defined mentoring as "a nurturing process in which a more skilled or more experienced person, serving as a role model, teaches, sponsors, encourages, counsels and befriends a less skilled or less experienced person for the purpose of promoting the latter's professional and/or personal development." The relationship of Mentor-Protégé resulted into the productive outcomes in the academics as well as corporate settings. Studies on the graduate students highlight the role of the mentoring in their skills development. In one study 83% graduate student favour in having mentors in their education system. These students suggested the role played by the mentors in the terms of role modelling, guidance and support, listening, enhanced self-confidence, and career advice (Luna and Cullen, 1998).

MENTORING VS REVERSE MENTORING:

Reverse Mentoring is mentoring by junior employees of senior employees, by first-line employees of middle- or higher-level employees, or by younger employees of older employees (Meister and Willyerd 2010)

Reverse Mentoring is learning process in which older executives are paired with younger employees on topics of technological advancement, usage of social media and current trends. (technopedia).

Alan Webber, the co-founder of Fast Company explains "Reverse Mentoring as a situation where the old fogies in an organization realize that by the time you're in your forties and fifties, you're not in touch with the future the same way the young twenty- something's. They come with fresh eyes, open minds and instant links to the technology of our future."(Quast L., 2011)

Reverse mentoring was introduced formally in 1999 by the former Chief Executive of General Electric, Jack Welch. He realised the company had much to learn about the Internet, so he mandated that the top executives including himself, take on a reverse mentor. It is a unique type of mentoring relationship whereby new junior employees are paired with more experienced managers to help them in acquiring new learning skills and advanced techniques. The mentor is younger than the protégé which is completely opposite to the available experiences whereby the experienced employees teach the younger staff about the work environment. Reverse mentoring persuade the experienced and old employees to get the knowledge about the new techniques due to fast-moving developments in technology from the young professionally skilled employees. Reverse mentoring may not be always cross-generational and age dependent.

As per the ancient Chinese approach, mentors were responsible for instilling values, knowledge and skills in their students for lifelong. The mentoring functions can be divided into three broad areas such as Career development, Psychological support and Role modelling. Career development includes teaching, protection, challenges, exposure and visibility. Psychological support includes acceptances, guidance, consulting, recognition and friendship whereas Role modelling covers commitment, comparison, trust, respect and demonstration of high standards. (ChenYC).

The important prerequisite for the reverse mentoring method is the willingness of the junior or new member to share his knowledge with the seniors and experienced managers.

REVIEW OF LITERATURE:

Paglis.L.,et al.(2006) conducted a study for the span of 5 ½ years to analyse the effect of mentoring on the students outcomes. They found the positive effect of mentoring on the research productivity, career commitment, and self-efficacy of the Ph.D. students from the hard sciences.

Chaudhuri & Ghosh (2012) suggested the reverse mentoring program as a social exchanges tool. They saw the work place as a combination of boomers and millennials. The situation represents the major demographic and sociological phenomenon which has dominant implications for the organizations. It may continue for the next decade. Reverse mentoring will leverage the expertise of both generations by offering the system of exchange of value systems and work demands.

Leh (2013) conducted a study on preparing tomorrow's teachers to use technology grant. The training delivered in multiple ways such as group training (workshops and sub group meetings) and individual training (working with individual mentors and technology helpers). The individual training includes service learning and reverse mentoring was the focused area. The graduate students in Instructional Technology program were paired with individual faculty members at the Teacher Education program. Students spent 10% of course time to train the faculty members for the usage of technology. The results of the study are in positive direction which shows that the mentors as well as mentees benefitted from the experience.

Chen Y.C. (2013) analysed the behavioural changes in the seven pairs of participants from high-tech companies in Taiwan and designed content-analysis study for data analysis. Their findings explained that people from Generation X and Y generally has advanced skills in Information Technology; motivation to learn and abundant resource for learning, innovative thinking and ambition, a sense of teamwork, and collaboration and coordination skills. The study explored the significant feature of the mentor & mentee relationship that they influenced each other in a positive way to enhance the learning outcomes.

AIM:

The aim of the study is to analyse the role played by the reverse mentoring as an effective tool for teaching and learning process. The paper focuses on the scope of reverse mentoring in corporate world and in academics. The study is descriptive in nature. The term mentor is used to describe friends and teachers with the positive influence on the learners.

PROBLEM DISCUSSION:

Reverse mentoring program have endless benefits for the organizational growth and success. Maximum benefits are similar to the traditional mentoring teaching methods. It minimises the knowledge gaps of both generations working in the organization. Experienced people learn social media and usage of technological advances whereas younger staff learns business values and industry practices from the experienced seniors. It empowers the emerging as well as established leader in the firm.

Millennials are becoming the dominant generation in the business firms. As per the demographic figures, 65% of the Indian population is under 35 in the year 2015. They will represent most of the global market place. (Steimle J.) Business firms must understand their strengths and weakness to get work done by them. As per CEB (The Corporate Executive Board Company), these generations' core values are happiness, passion, diversity, sharing and discovery. Companies can be leader of the market by understanding these values and try to inspire them effectively.

Reverse mentoring is the outcome of the environmental conditions as well as generation gap. It motivates an individual to ensure his companies' longer stay through valuable organizational and leadership skills. Bharti Airtel introduced the concept of the reverse mentoring in the year 2008 by the CEO Sanjay Kapoor. The company hired young managers from the top B-Schools of the county and conducted sessions on brainstorming with seasoned managers on the topics such as brand activation opportunities, downloading apps, fashion trends, latest gadgets etc. The company successfully paired 20 parties as a mentor-mentee and achieved success in every field. Indian companies especially telecom and technology industry followed the reverse mentoring to remain competent in an increasingly complex business environment.

The high involvement of technology in the form of internet, advances in and widespread use of technological devices make it compulsion for the business firms to be updates with the passage of time. The changing professional characteristics of the workforce, flat organizational structure, shorter product life cycles, rise of competent as well as creative industry and appointment of members of younger generators to middle as well as higher level managerial positions has brought about an alternative perspective on traditional mentoring setting in the form of reverse mentoring. (ChenYC).

FINDINGS:

Nitin Paranjpe from the HUL won the award of Best CEO- MNC due to the innovative introduction of digital marketing for the firm. He firmly believes that without making friends in the organization nobody can attain goals easily. (forbes,2012)

Reverse Mentoring can be beneficial to the organization with the below-mentioned pre-requisites:

- Each party mentor and mentee needs to be **completely clear** about their own expectation from the relationship,
- Both parties must be fully committed to the relationship and **agree upon** the mutually **fixed rules**,
- Both parties act in the capacity of mentor as well as mentee and try to learn from each other. They must have **willingness to learn**.
- It requires maximum **trust** of each party because it's a pushing process for each other out of their comfort zones and tries to think, act, and work in different and new ways.
- **Transparency** is the key element in this relationship. Both parties belong to different generations. Each has different angle to see the problem as well as different style to solve the same. They must share both the angles and try to learn the positive and negative sides of both angles.

SUGGESTIONS:

The study focuses on the role played by the reverse mentoring as a learning tool in corporate world as well as academics. The process can be easily introduced in the existing company scenario. It doesn't require any special settings but only requires the ability to match up employees of different generations. The company may arrange or encourage them to meet regularly to exchange ideas for facing challenges. The reverse mentoring cannot be restricted to people of the same gender or who have similar backgrounds. It can be more beneficial in case of mentor and mentee belongs to different background. (Quast L., 2011) The key element to get success through reverse mentoring is the ability to create and maintain an attitude of openness to the experience and dissolve the barriers of status, power and position.

It is an innovative technique which turned the set patterns in traditional mentoring upside-down. Reverse mentoring enhances employees' professional effectiveness and their learning standards.

CONCLUDING REMARKS:

The corporate practices for learning new ways and techniques mentioned the reverse mentoring as a facilitator for cross- generational knowledge sharing. Executives realize that the knowledge isn't a one-way street. It's in everyone's interest to share expertise. Reverse mentoring does not need special organizational structural settings. It can be easily replaced with the traditional mentoring technique.

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Supporting Achievement Via The Road Less Travelled – The Vicinity

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A B S T R A C T

Traditionally, the rural scene, also known as countryside in Western parlance, in the Indian Sub-continent has largely been an untapped one. However, the times, they are surely changing and how! The momentous changes which are being observed in the rural turf are not to be overlooked but are to be treaded along with and lessons should be learnt from them. The significant decisions taken by the government vis-à-vis the investments foreign companies can make in India have certainly turned the tables and have made the quest for success in the hinterland even more competitive and electrifying. It has added the much-needed chutzpah on the part of companies, both Indian and foreign to prove their mettle in one of the largest agriculture-oriented population in the world, namely India. These developments have merited much-needed differentiation on part of the companies testing them for their readiness to tackle the situation head-on without losing their urban orientation. The companies have to look for greener pastures (literally speaking!) and sooner they realize this plain fact, the better it would be for them. Just like India is adopting a Look-East policy to counter the difficulties she is facing on the front of her Western partners, the same is the case with the companies as they have to go looking for doing something different from their past transactions thereby including the rural players thus making for a much-leveled play field. Out-of-the-box or even bizarre products (from urban perspective of course) have gained prominence in the product list of the companies which is getting longer with every passing day. That is why the way they handled the urban markets won't find many takers when it comes to the Indian rural segment. The rural clientele, though lacking number of choices vis-à-vis his urban counterpart, is still a demanding one who won't be liked to be taken for granted and one-product-suits-all strategy will not work here. The present paper would try to throw some light as to how the companies could sustain success if they tread the road less travelled viz., by opening rural frontiers and, if already opened, by capitalizing on them.

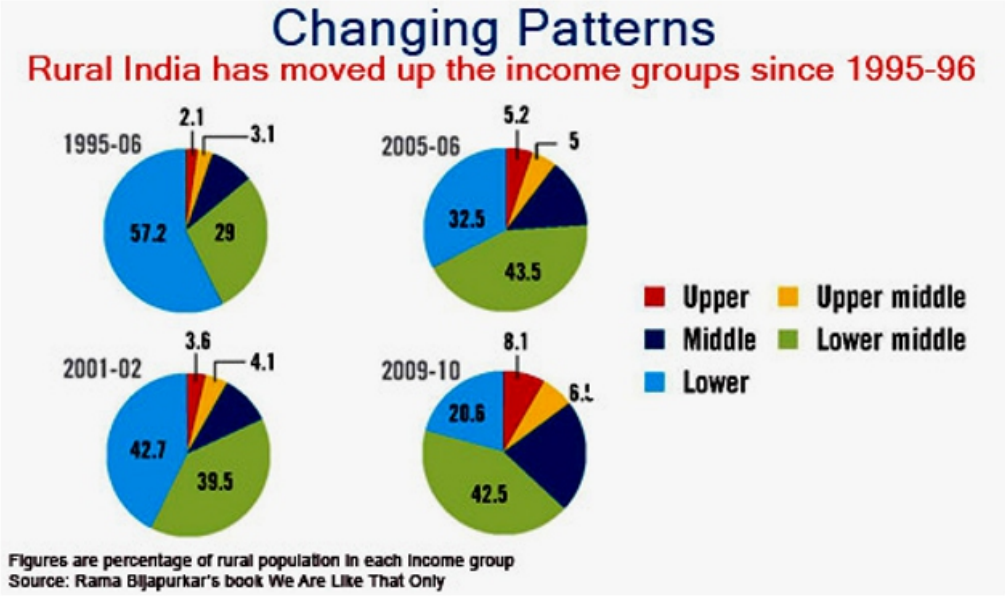
The Paper

The Indian Diaspora

About two-third of Indian workforce is engaged in agriculture and related activities with more than 70 crores people living in rural areas. However, their contribution is a rather dismal 29 percent towards India's Gross Domestic Product (GDP). Not many efforts were made to attract the rural customers till recently as urban customers were the apple of the eyes of the companies.

However, that has certainly changed with time. The momentum of development is accelerating in rural India and so is the purchasing power. Scientific agriculture, changing life style and increasing consumption patterns have happened due to rise in education levels, social mobility, improved means of transportation, communication and mass media such as television.

The extremes of the Indian economy are characterized by the richest of urban Indians and the poorest of rural India. The rest are fairly comparable, showing that a useful scale is comprehensible by skillfully combining urban and rural consumers. This holds true especially for well-progressive states and connected geographies. Past years of good GDP growth have significantly increased middle-income households and high-income households in rural India. Even moderate GDP growth ought to double the high and upper-middle income groups.



'Rural' may be referred to as the 'New Urban' or even better as 'Rurban'. In 1980, two-thirds of rural income was farm income. By 2012 end, NCAER estimates that the situation will become exactly the reverse. According to Indian Revenue Service data, colour television sets penetration improved by 7% during 2005-08 and packaged biscuits went up by 10%. Aggressive categories such as shampoo even increased by a staggering 37% during the same period, an impressive number indeed. It is important to understand that even a meager 1% rise in rural India purchase ability means a lot for the manufacturers. A 1% increase in refrigerator penetration, over a five-year period, means that over 1.5 million refrigerators were sold, so humungous is the rural market. The owners of new C TVs in the past three years are equivalent to the population of Sweden or half of Australia! So, even at this *unimpressive* rate, rural India unleashes enormous consumption power and opens new vistas.

The point worth mentioning and understanding is - a small percentage of a large number is a large number. One percent of rural India is 1.4 million households, 10% is at least 10 million households.

Immense Opportunities Galore in the Rural Market

To gauge its significance, the Indian rural market is almost twice as large as the entire market of USA or Russia coupled with huge growth initial signals, exhibited by industry specific facts, as given below:

FMCG: Rural consumers spend around 13 per cent of their income, the second highest after food (35 per cent), on FMCG, as per an RMAI study. The FMCG industry in India was worth around US$ 16.03 billion in August 2008 and the rural market accounted for a robust 57 percent of the FMCG market. Moreover, according to an ASSOCHAM study, FMCG is expected to hop by 40 percent rurally as against 25 per cent in urban areas.

Retail: The rural retail market is currently estimated at US$112 billion, or around 40 per cent of the US$ 280 billion retail market. Major domestic retailers like AV Birla, ITC, Godrej, HUL, Reliance and many others have already set up impressive farm linkages and reaping the benefit from the same.

Telecommunication: A Gartner study revealed that Indian cellular services revenue grew at a compound annual growth rate (CAGR) of 18.4 per cent to touch US$ 25.6 billion in 2011, with most of the growth being driven by rural markets. Also, a joint CII and Ernst & Young report reveals that of the next 250 million Indian wireless users, approximately 100 million (40 per cent) are likely to be from rural areas. By 2012, rural users accounted for over 60 per cent of the total telecom subscriber base in India, an impressive number indeed. What is striking of this report is the fact that we are talking about the hinterland, an area which was hitherto unknown to be tech-friendly.

Automobiles: Passenger car and by-wheeler auto companies are driving on the rural road to push sales. While growth in urban markets has been mostly flat or negative, the rural markets are growing. The share of rural sales in Maruti Suzuki has increased quite impressively. Mahindra & Mahindra (M&M) is now selling more Scorpios in rural and semi-urban markets than any other point of time thus highlighting its significance.

Consumer durables: A survey conducted by RMAI revealed that 59 percent durables sales come from rural markets as compared to the urban market. Thus, many leading companies are now consolidating their rural presence. A large number of corporate are excited about the potential of rural areas.

The entry of corporate like HUL, Bharti, ITC, DCM, EID parry and Amul etc. is a testimony to the fact that corporations cannot ignore the rural market anymore and if they do so, it would be at their own peril.

What one must never commit is the same mistake with rural India that Western MNCs did with India - assuming that it will grow with a lag. The rural consumer yearns for sophisticated new marketing strategies and paradigms, not a throw-back to old times. Thus, a fresh and innovative approach is needed to gain optimally.

The success story of urban market can't be duplicated in the rural market, as they are altogether different and hence required different approaches. Therefore, before coming up with some business model for rural market, following factors should be reckoned with:

- ✓ **Large & Fragmented Market:** Rural market in India is huge, but fragmented. Less number of shops is available.

- ✓ **Heterogeneous Market:** Various tiers exist on income-basis such as big landlords; traders, small farmers; marginal farmers, laborers, artisans. State-wise variations can be quite significant as well vis-à-vis literacy (Kerala 90%, Bihar 44%) or BPL population (Orissa 48%, Punjab 6%).

- ✓ **Agriculture-based Economy:** Although reducing, but still rural prosperity is tied with agriculture prosperity. In the case of a crop failure, the income of the rural masses is badly hit thus adversely affecting their ability to purchase.

- ✓ **Rising Disposable Income and Aspirational Standard of Living:** Disposable income levels of rural market are increasing gradually thanks to modern techniques of agriculture, cultivation of cash crops, small scale industries, provisions of working in service sector in nearby cities and various government schemes such as NREGA.

Challenges which Hinder the Growth of the Promising Rural Market

- ✓ **Lack of Accessibility:** Almost half of the villages do not have all-weather roads. Physical movement is highly expensive. Even today, most of the villages in the eastern parts are inaccessible during the monsoon season.

- ✓ **Media for Rural Communication:** At some point of time, radio was considered to be a potential medium for rural communication. However, it has started losing relevance in the highly commercialized space of today. Another mass media which has emerged is television and cinemas.

- ✓ **Dispersed Market:** It is a herculean effort to ensure the availability of a brand countrywide. Seven Indian states account for almost three-fourth of the country's rural retail outlets. Such sort of disparity in the distribution of outlets cannot be neglected.

- ✓ **Low Per Capita Income:** Even though about 33-35% of gross domestic product is generated in the rural areas, it is shared by 74% of the population. Hence the per capita income is low compared to the urban area, although it is improving gradually.

- ✓ **Low Levels of Literacy:** The literacy rate is not up to the mark as the urban areas. This again leads to problem of communication for promotional purposes.

STRENGTH	WEAKNESS
➢ High Target Population ➢ Rising number of middle and upper middle class ➢ Urban Life style of Rural Youth ➢ Increasing Purchasing Power ➢ Increasing consumption level across the board	➢ Large and Scattered Market ➢ Agri- based Economy and its dependency on Rainfall ➢ Poor Infrastructure ➢ Many Languages and Dialects ➢ Low Level of Literacy ➢ Low number of Retailers per village
OPPORTUNITIES	**THREATS**
➢ Low level of competition ➢ Government Support for Rural Development ➢ Increased Banking exposure ➢ Changing Lifestyle and Standard of Living	➢ Cheap Local Brands and Duplicity ➢ Shifting of Young Generation to Urban areas ➢ Various Laws related to Agri inputs-outputs ➢ Increasing cost of Land

The 'Potential' Rural Market: Terrain to be Won

Considering all the facts and figures listed above, it is to be comprehended that rural business would not make much of a business sense unless it is multi-dimensional and caters to a wide diaspora. Most of the FMCG products are based on agri-inputs, directly or indirectly, and these agri-inputs are sourced from villages. This creates an opportunity for FMCG firms to reap the dual-side benefit by adopting the multidimensional approach for rural business.

An Alternative Model for Rural Marketing – A Comprehensive Outlook

All possible transactions related to rural market can be summarized through the 'Redefined Rural-Urban Matrix'.

	Rural	Urban
Rural	* Agri-input based items which can be processed at local level	* Agri-input purchased from farmers * Processed food items
Urban	* Seeds, Fertilizers, Pesticides etc. * Consumables, FMCG	

Therefore, an integrated model is needed for rural business which covers all aspects of rural business viz. Urban to Rural, Rural to Urban and Rural to Rural.

The Pre-requisites before Developing the Model

- **Value for Money:** Rural consumer wants 'Value for Money', thus desiring quality products at lowest possible price.
- **Way to increase their Purchasing Power:** Rural consumer earns mainly from agriculture. It is needed to increase their earning from other sources thus augmenting our market size in the process.
- Product Awareness / Demand Creation
- Taking into account the aspect of Lack of Accessibility

How to strategize regarding the 'Value for Money' Aspect

- Simple product performing basic functions
- Shortening the input source chain to buy inputs at low prices

  Instead of **Farmer → Mandi → Manufacturer/Processing Center,**

  Use **Farmer → Manufacturer/Processing Center**, through own rural stores.
- Focus on shortening the Distribution chain, thus lesser distribution of margin overheads

  Instead of **Manufacturer → Stockiest → Wholesaler → Retailer → Consumer**

  Use **Manufacturer → Rural Stores → Consumer**

  See a typical example of 'Dal', which needs polishing before use:

  Instead of **Farmer → Mandi → Manufacturer/Processing Center → Wholesaler → Retailer → Consumer**

  We can use **Farmer → Manufacturer/Processing Center → Consumer**

Taking the Rural Earnings to the Up requires

- Better Price for their products, as Mandi margins will be shared between farmer and manufacturer only. No third party would be benefitted and farmers would get what is rightfully theirs.

- No transportation cost for farmers as well as manufacturer, as source of inputs and markets are the same thus eliminating the need for the same.

- Contract Farming can further help farmers to earn fixed income thus helping manufacturer to have the desired product.

- The farmers can be guided regarding increasing productivity and lessening of wastage.

How to Go about Product Awareness / Demand Creation:

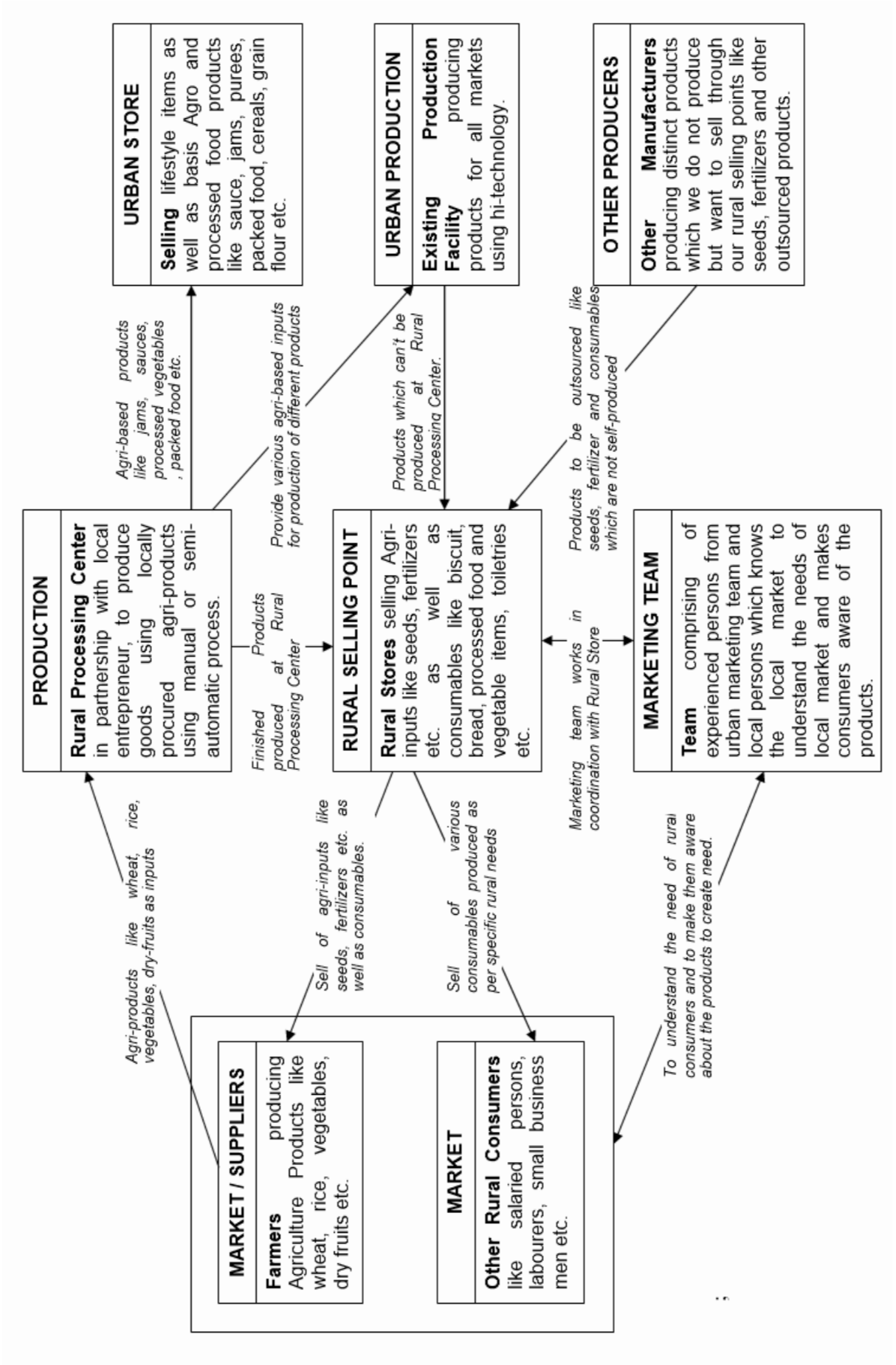
- A team would be needed to make rural consumers aware about the products.

- This team will understand the rural consumers and their specific needs to serve them better products.

Tackling 'Lack of Accessibility' factor with the help of Strategy:

Inputs which can be processed locally using a small set-up should be processed and converted into finished goods. For this, some tie-ups or partnering can be done with local entrepreneurs. It will also generate employment opportunities and increase the purchasing power of local consumers in the process.

On the basis of above strategies, a comprehensive integrated model for rural business is thus proposed covering all the aspects related to it, to reap maximum long-term competitive gains in the rural market.


URBAN STORE
Selling lifestyle items as well as basis Agro and processed food products like sauce, jams, purees, packed food, cereals, grain flour etc.
URBAN PRODUCTION
Existing Production Facility producing products for all markets using hi-technology.
OTHER PRODUCERS
Other Manufacturers producing distinct products which we do not produce but want to sell through our rural selling points like seeds, fertilizers and other outsourced products.
PRODUCTION
Rural Processing Center in partnership with local entrepreneur, to produce goods using locally procured agri-products using manual or semi-automatic process.
RURAL SELLING POINT
Rural Stores selling Agri-inputs like seeds, fertilizers etc. as well as consumables like biscuit, bread, processed food and vegetable items, toiletries etc.
MARKETING TEAM
Team comprising of experienced persons from urban marketing team and local persons which knows the local market to understand the needs of local market and makes consumers aware of the products.
MARKET / SUPPLIERS
Farmers producing Agriculture Products like wheat, rice, vegetables, dry fruits etc.
MARKET
Other Rural Consumers like salaried persons, labourers, small business men etc.
Agri-based products like jams, sauces, processed vegetables , packed food etc.
Provide various agri-based inputs for production of different products
Products which can't be produced at Rural Processing Center.
Products to be outsourced like seeds, fertilizer and consumables which are not self-produced
Finished Products produced at Rural Processing Center
Marketing team works in coordination with Rural Store
Agri-products like wheat, rice, vegetables, dry-fruits as inputs
Sell of agri-inputs like seeds, fertilizers etc. as well as consumables.
Sell of various consumables produced as per specific rural needs
To understand the need of rural consumers and to make them aware about the products to create need.

The Market and Suppliers

Farmers make this rural market and rural business replete with options to encash on the same. They are buyers as well as sellers. They will buy fertilizers, seeds, pesticides and agri-inputs. They would produce agri-products and sell them to Rural Processing Center. Further, they would buy consumable items for their consumption. Apart from the farmers, other rural consumers like labourers, salaried employees, rural youth would create the market for different consumables.

The Rural Shop- How it all would Shape up

Center point of the above model will be the '**Rural Store**' – selling all the goods specifically designed for particular strata of rural market. It will include agriculture inputs along with FMCG products. This center will receive supplies from 'Rural Processing Center' and Urban warehouse.

A '**Rural Processing Center**' is a place to process the locally procured agri-products. It will be having a manual or semi-automatic processor and local labour to convert inputs to processed form. Processed item will be sent to 'Local Rural Store' for sell. It will also supply 'low-cost processed products' to urban stores along with the low cost agriculture products as raw material to further process them in hi-tech production facilities.

Rural Marketing Team would be responsible for understanding the need of the consumers and creating the demand. This team will also undertake all the promotion and awareness activities in the rural market.

To Summarize it…

Coming to the end of the discussion as put in the context of rural market, the model presented above is just one about how to do business in a relatively untapped-yet-potential market, in this case the rural Indian market. There can be many more models for harnessing benefits out of this segment which could be full of opportunities and at the same time challenging enough as the rural customer's demands vary substantially from those of his urban counterpart. Thus, what India need are ingenious solutions to begin a campaign that could fast forward the village eco-system thereby changing them into lucrative business destinations and progressive interfaces which would provide impetus to the wishes of the villagers, and new vistas with the promise of a better tomorrow which the corporations can bring together with them.

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ASSOCHAM reports for various years related to Rural India and Retail revolution such as 'Rise of Rural India'

Sustainability Reporting- A Recent Trend & Future Prospects in India

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ABSTRACT

Climate change, social degradation, economic crisis and complexities in business have raised serious concern over organisations' sustainability. Sustainability reporting is a broad term considered synonymous with others used to describe reporting on economic, environmental, and social impacts (e.g., triple bottom line, corporate responsibility reporting, etc.). The purpose of a sustainability reporting is the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development. Currently in India, only few companies have adopted such reporting practices as compared to other developed countries like Japan, USA etc. With the growing concern on social and environment issues worldwide, this decade is going to see paradigm shift in reporting standards on sustainability. Global Reporting Initiative is a non-profit organization that works towards a sustainable global economy by providing sustainability reporting guidance. GRI pioneered and developed a comprehensive sustainability reporting framework that is widely used around the world. This article explores the guidelines of GRI's sustainability reporting standards. It also unveils recent reporting trends of the Indian organisations on sustainability performances and future prospects.

Keywords Sustainability, Triple Bottom Line, GRI, Disclosure Frameworks, Corporate Social Responsibility

Introduction

For any organisation to be sustainable in the long term, it firstly needs to be financially self sufficient. Once this primary need for financial capital has been met, the organisation then needs to be socially responsible. This is achieved by ensuring that its governance and workplace practices and its environmental and social impact are self monitoring and conform to society's expectations and ethical values. Only then can a company achieve sustainability in the long term.

Figure 1: Relationship between sustainability and financial self-sufficiency

Evolution of the Concept of Sustainability

In 1919, a landmark judgment was given by the Supreme Court of the State of Michigan, USA in the case of Dodge v. Ford Motor Company. The court said that the primary objective of a business is to make profits and that any business is responsible to its shareholders and not to the community as a whole or to its employees. To date this judgment is treated as a fundamental reference point in relation to the responsibilities of a business and the inherent principle in it has not been overruled by courts. In 1970, Nobel Laureate Milton Friedman wrote that the responsibility of a business is to increase profits and that engaging in activities which discharge the corporate social responsibilities (CSRs) of a business is an instance of 'agency conflict' or a conflict between managers and shareholders. In Friedman's view, CSR activities were undertaken by managers to their personal needs and at the expense of the shareholders, and he even went on to say that in a free enterprise society, CSR reflects an inappropriate use of corporate funds. Since the early 1980s, social scientists have moved away from the theory of agency as propagated by Friedman and gravitated towards a new model developed by Peston and Caroll, which was embodied in a structure they called the 'corporate social performance' (CSP) framework, which combines the principles and philosophy of societal needs with the economic responsibilities of a business. Freeman (1984) defined stakeholders as 'any group or individual who can affect or is affected by the achievements of an organisation's objectives". The stakeholder's theory asserts that firms have relationships with many constituent groups and that these stakeholders both affect and are affected by the actions of the firm. Freeman (1984) argued that the systematic attention of the stakeholders interest is critical to the success of a firm and that management must pursue action that are optimal for a broad class of stakeholders rather than those that serve only to maximise shareholder interests'.

These principles set the path for more research and understanding of these theories and led to the integration of the environmental, social and governance responsibilities of a business with the otherwise predominant economic aspects. The stakeholder concept has facilitated the inclusion of the sustainability concept in the core business practices of a company.

Sustainability Reporting

The changing global environment is challenging companies to look beyond financial performance to drive business. Business leaders are increasingly realizing the need to integrate environmental and social issues within the business strategy. In a world of changing expectations, companies must account for the way they impact the communities and environments where they operate. Climate change, community health, education and development, and business sustainability are some of the most important issues of this decade. Businesses are increasingly involved in these areas as are their clients and their people. This raises the importance of accurately and transparently accounting for and reporting these activities.

Sustainability means different things to different people therefore; a universal definition of sustainability is elusive. The most often quoted definition is from the Brundtland Commission (1987) which states that sustainable development is "Development that meets the needs of the present without compromising the ability of future generation to meet their own needs."Sustainability is, therefore, more of a journey than a destination wherein ideals, values and measurement metrics are in a constant state of evolution. The Triple Bottom Line (TBL), a term coined by Elkington (l997) implies that corporation should focus “not just on the economic value they add but also on the environmental and social value they add – and destroy".

As Deegan (1999) indicated, “for an organisation or community to be sustainable, it must be financially secured (as evidenced through such measures as profitability), it must minimise (or ideally eliminate) its negative environment impact, and it must act in conformity with society's expectation,” while Sustainability Reporting is a decade old idea, it is relatively in its early years with the methodology evolving constantly. Still, many nations and organizations have started to understand the concept and incorporate it in their business functions. Sustainability Reporting is a process for publicly disclosing an organizations economic, social and environmental performance. As with any disclosure, the Sustainability Report lays bare the organizations performance to public scrutiny. What distinguishes the Sustainability Report from other reports is the fact that it makes an organization look at its business from every possible quarter in a single document.

In an ideal world, the organization's stakeholders would analyze the report and give constructive feedback to the organization to improve its performance. But Sustainability Reports need to serve a purpose – it should be possible to derive information and knowledge out of them so that they can be compared across organizations. For this purpose, common standards need to be developed. It was in this context that the Global Reporting Initiative (GRI) was founded in 1997 as a project under Ceres, a Boston (US) based national network of investors, environmental organizations and other public interest groups working with companies and investors to address sustainability challenges such as global climate change. In 2002 GRI became an independent international NGO and its secretariat has since been located in Amsterdam, The Netherlands. Its main role was to set up a multi-stakeholder process to define guidance to organizations on what issues they should measure and report on. GRI pioneered and developed a comprehensive sustainability reporting framework that is widely used around the world.

GRI Reporting Framework

Sustainability reports based on the GRI Reporting framework disclose outcomes and results that occurred within the reporting period in the context of the organization's commitments, strategy, and management approach. Reports can be used for the following purposes, among others:

I) Benchmarking and assessing sustainability performance with respect to laws, norms, codes, performance standards, and voluntary initiatives;
II) Demonstrating how the organization influences and is influenced by expectations about sustainable development; and
III) Comparing performance within an organization and between different organizations over time.

The GRI Reporting Framework is intended to serve as a generally accepted framework for reporting on an organization's economic, environmental, and social performance. It is designed for use by organizations of any size, sector, or location. It takes into account the practical considerations faced by a diverse range of organizations – from small enterprises to those with extensive and geographically dispersed operations.

The GRI Reporting Framework contains general and sector-specific content that has been agreed by a wide range of stakeholders around the world to be generally applicable for reporting an organization's sustainability performance.

Standard Disclosures

The Guidelines identify information that is relevant and material to most organizations and of interest to most stakeholders. There are three different types of disclosures suggested by GRI.

i) **Strategy and Profile:** Disclosures that set the overall context for understanding organizational performance such as its strategy, profile, and governance.

ii) **Management Approach:** Disclosures that cover how an organization addresses a given set of topics in order to provide context for understanding performance in a specific area.

iii) **Performance Indicators:** Indicators that elicit comparable information on the economic, environmental, and social performance of the organization.

Performance Indicators

The **S**ustainability Performance Indicators is organized by economic, environmental, and social categories. Social Indicators are further categorized by Labour, Human Rights, Society, and Product Responsibility. Each category includes a Disclosure on Management Approach ('Management Approach') and a corresponding set of Core and Additional Performance Indicators. Core Indicators have been developed through GRI's multi-stakeholder processes, which are intended to identify generally applicable indicators and are assumed to be material for most organizations. An organization should report on Core Indicators unless they are deemed not material on the basis of the GRI Reporting Principles. Additional Indicators represent emerging practice or address topics that may be material for some organizations, but are not material for others. Where final versions of Sector Supplements exist, the Indicators should be treated as Core Indicators. The Disclosure(s) on Management Approach should provide a brief overview of the organization's management approach to the Aspects defined under each Indicator Category in order to set the context for performance information. The organization can structure its Disclosure(s) on Management Approach to cover the full range of Aspects under a given category or group its responses on the Aspects differently.

Economic Performance Indicators

The economic dimension of sustainability concerns the organization's impacts on the economic conditions of its stakeholders and on economic systems at local, national, and global levels. The Economic Indicators illustrate:

i) Flow of capital among different stakeholders; and
ii) Main economic impacts of the organization throughout society.

Financial performance is fundamental to understanding an organization and its own sustainability. However, this information is normally already reported in financial accounts. What is often reported less, and is frequently desired by users of sustainability reports, is the organization's contribution to the sustainability of a larger economic system. Following are the economic performance indicators.

Aspect: Economic Performance

EC1 (Core): Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.
EC2 (Core): Financial implications and other risks and opportunities for the organization's activities due to climate change.
EC3 (Core): Coverage of the organization's defined benefit plan obligations.
EC4 (Core): Significant financial assistance received from government.

Aspect: Market Presence

EC5 (**Add):** Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.
Ec6 (Core): Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.
EC7 (Core): Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.

Aspect: Indirect Economic Impacts

EC8 (Core): Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in kind, or pro bono engagement.
EC9 (Add): Understanding and describing significant indirect economic impacts, including the extent of impacts.

Environmental Performance Indicators

The environmental dimension of sustainability concerns an organization's impacts on living and non-living natural systems, including ecosystems, land, air, and water. Environmental Indicators cover performance related to inputs (e.g., material, energy, water) and outputs (e.g., emissions, effluents, waste). In addition, they cover performance related to biodiversity, environmental compliance, and other relevant information such as environmental expenditure and the impacts of products and services.

Aspect: Materials

EN1 (Core): Materials used by weight or volume.
EN2 (Core): Percentage of materials used that are recycled input materials.

Aspect: Energy

EN3 (Core): Direct energy consumption by primary energy source.
EN4 (Core): Indirect energy consumption by primary source.
EN5 (Add): Energy saved due to conservation and efficiency improvements.
EN6 (Add): Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.
EN7 (Add): Initiatives to reduce indirect energy consumption and reductions achieved.

Aspect: Water

EN8 (Core): Total water withdrawal by source.
EN9 (Add): Water sources significantly affected by withdrawal of water.
EN10 (Add): Percentage and total volume of water recycled and reused.

Aspect: Biodiversity

EN11 (Core): Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.
EN12 (Core): Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.
EN13 (Add): Habitats protected or restored.

EN14 (Add): Strategies, current actions, and future plans for managing impacts on biodiversity.

EN15 (Add): Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.

Aspect: Emissions, Effluents, and Waste

EN16 (Core): Total direct and indirect greenhouse gas emissions by weight.

EN17 (Core): Other relevant indirect greenhouse gas emissions by weight.

EN18 (Add): Initiatives to reduce greenhouse gas emissions and reductions achieved.

EN19 (Core): Emissions of ozone-depleting substances by weight.

EN20 (Core): NO, SO, and other significant air emissions by type and weight.

EN21 (Core): Total water discharge by quality and destination.

EN22 (Core): Total weight of waste by type and disposal method.

EN23 (Core): Total number and volume of significant spills.

EN24 (Add): Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.

EN25 (Add): Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.

Aspect: Products and Services

EN26 (Core): Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.

EN27 (Core): Percentage of products sold and their packaging materials that are reclaimed by category.

Aspect: Compliance

EN28 (Core): Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.

Aspect: Transport

En29 (Add): Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.

Aspect: Overall

EN30 (Add): Total environmental protection expenditures and investments by type.

Social Performance Indicators

The social dimension of sustainability concerns the impacts an organization has on the social systems within which it operates. The GRI Social Performance Indicators identify key Performance Aspects surrounding labour practices, human rights, society, and product responsibility.

Labour Practices and Decent Work Performance Indicators

Aspect: Employment

LA1 (Core): Total workforce by employment type, employment contract, and region, broken down by gender.

LA2 (Core): Total number and rate of new employee hires and employee turnover by age group, gender, and region.

LA3 (Add): Benefits provided to full-time employees that are not provided to temporary or part time employees, by significant locations of operation.

Aspect: Labour/Management Relations

LA4 (Core): Percentage of employees covered by collective bargaining agreements.

LA5 (Core): Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.

Aspect: Occupational Health and Safety

LA6 (Add): Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advise on occupational health and safety programs.

LA7 (Core): Rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender.

La8 (Core): Education, training, counselling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.

La9 (Add): Health and safety topics covered in formal agreements with trade unions.

Aspect: Training and Education

LA10 (Core): Average hours of training per year per employee by gender, and by employee category.
LA11 (Add): Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.
LA12 (Add): Percentage of employees receiving regular performance and career development reviews, by gender.

Aspect: Diversity and Equal Opportunity

LA13 (Core): Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.

Aspect: Equal Remuneration for Women and Men

LA14 (Core): Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.
LA15 (Core): Return to work and retention rates after parental leave, by gender.

Human Rights

There is growing global consensus that organizations have the responsibility to respect human rights. Human rights Performance Indicators require organizations to report on the extent to which processes have been implemented, on incidents of human rights violations and on changes in the stakeholders' ability to enjoy and exercise their human rights, occurring during the reporting period. Among the human rights issues included are non discrimination, gender equality, freedom of association, collective bargaining, child labour, forced and compulsory labour, and indigenous rights.

Human Rights Performance Indicators

Aspect: Investment and Procurement Practices

HR1 (Core): Percentage and total number of significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening.
Hr2 (Core): Percentage of significant suppliers, contractors, and other business partners that have undergone human rights screening, and actions taken.

HR3 (Core): Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.

Aspect: Non-discrimination Core

HR4 (Core): Total number of incidents of discrimination and corrective actions taken.

Aspect: Freedom of Association and Collective Bargaining

HR5 (Core): Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights.

Aspect: Child Labour

HR6 (Core): Operations and significant suppliers identified as having significant risk for incidents of child labour, and measures taken to contribute to the effective abolition of child labour.

Aspect: Forced and Compulsory Labour

HR7 (Core): Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of all forms of forced or compulsory labour.

Aspect: Security Practices

HR8 (Add): Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.

Aspect: Indigenous Rights

Hr9 (Add): Total number of incidents of violations involving rights of indigenous people and actions taken.

Aspect: Assessment

HR10 (Core): Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments.

Aspect: Remediation

HR11 (Core): Number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms.

Society: Society Performance Indicators focus attention on the impacts organizations have on the local communities in which they operate, and disclosing how the risks that may arise from interactions with other social institutions are managed and mediated. In particular, information is sought on the risks associated with bribery and corruption, undue influence in public policy-making, and monopoly practices.

Society Performance Indicators

Aspect: Local Communities

SO1 (Core): Percentage of operations with implemented local community engagement, impact assessments, and development programs.
SO2 (Core): Operations with significant potential or actual negative impacts on local communities.
SO3 (Core): Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.

Aspect: Corruption

SO4 (Core): Percentage and total number of business units analyzed for risks related to corruption.
SO5 (Core): Percentage of employees trained in organization's anti-corruption policies and procedures.
SO6 (Core): Actions taken in response to incidents of corruption.

Aspect: Public Policy

SO7 (Core): Public policy positions and participation in public policy development and lobbying.
SO8 (Add): Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.

Aspect: Anti-Competitive Behaviour

SO9 (Add): Total number of legal actions for anticompetitive behaviour, anti-trust, and monopoly practices and their outcomes.

Aspect: Compliance

SO10 (Core): Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations.

Product Responsibility

Product Responsibility Performance Indicators address the aspects of a reporting organization's products and services that directly affect customers, namely, health and safety, information and labelling, marketing, and privacy. These aspects are chiefly covered through disclosure on internal procedures and the extent to which these procedures are not complied with.

Product Responsibility Performance Indicators

Aspect: Customer Health and Safety

Pr1 (Core): Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.
PR2 (Add): Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.

Aspect: Product and Service Labelling

PR3 (Core): Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements.

PR4 (Add): Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes.

PR5 (Add): Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.

Aspect: Marketing Communications

PR6 (Core): Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.

PR7 (Add): Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.

Aspect: Customer Privacy

PR8 (Add): Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.

Aspect: Compliance

PR9 (Core): Monetary value of significant fines for noncompliance with laws and regulations concerning the provision and use of products and services.

Policy Initiatives by Indian Government on Corporate Social Responsibility and Sustainable Development With increasing importance of India as a global economy and its role at crucial international forums dealing with economic and climate change issues, the Finance Ministry decided in 2011 to expand the scope of the annual Economic Survey to include a chapter on the topic of financing of climate change. The survey discusses the effect of climate change in India, the government initiatives, financing and overall strategy.

India has many publicly-funded programs for the prevention and control of climate risks and issues relating to sustainable development. One of the major objectives of many rural development and poverty upliftment programmes is the reduction of vulnerability to risks arising out of climate change.

Banks have been assigned a special role in the economic development of the country, and the Reserve Bank of India, the banking regulator, has prescribed that certain percentage of bank lending should be allocated to developmental sector called the “Priority Sector”. In addition, banks have begun to realise their role as multipliers for responsible and sustainable business as they increasingly integrate evaluation on sustainability as one of the key inputs to their decision on financing and valuation of projects. Similarly, the Charter on "Corporate Responsibility for Environmental Protection (CREP)" from Ministry of Environment & Forest (MoEF) looks beyond the compliance of regulatory norms for prevention & control of pollution through various measures including waste minimisation, in-plant process control & adoption of clean technologies. The Charter set targets concerning conservation of water, energy, recovery of chemicals, reduction in pollution, elimination of toxic pollutants, process & management of residues that are required to be disposed of in an environmentally sound manner, listing action points for pollution control for various categories of highly polluting industries.

Financial reporting in India includes mandatory reporting on environment and social matters such as on consumption of energy, use of raw materials and intermediaries, conservation efforts, accounting for environment cost, and disclosures on liability for environment issues. Labour and industrial laws are also well established and companies are required to report on matters such as salaries, wages and benefits paid to employees and the status of payment towards retirement and social benefits. The Ministry of Corporate Affairs released Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business (NVGs) in July 2011 after considerable stakeholder consultations. They are compatible with globally acceptable guidelines on sustainability reporting. The GRI focal point India and the GIZ India have supported and promoted the creation of the NVG through the IICA-GIZ CSR Initiative. Recently, the department of public enterprises has issued guidelines on Sustainable Development and CSR for Central Public Sector Undertakings (CPSEs). These guidelines stipulate how much and how CPSEs should invest and report on Corporate Social Responsibility (CSR). The CSR budget mandated range from 0.5 percent to 5 percent of the profit depending on the net profit of the CPSE. A recent decision taken by the Securities and Exchange Board of India (SEBI) mandates that listed entities should submit Business Responsibility report as a part of their annual reports, which would describe measures taken by them along the key principles enunciated in the 'National Voluntary Guidelines on Social, Environmental and Economic Responsibility of Business' (NVGs) framed by the Ministry-of Corporate Affairs (MCA). To start with, this requirement would he applicable to the top 100

companies in terms of market capitalisation and would be extended to other companies in a phased manner. This decision indicates the importance that the Government of India places on the fulfilment of environmental, social and governance responsibilities of businesses.

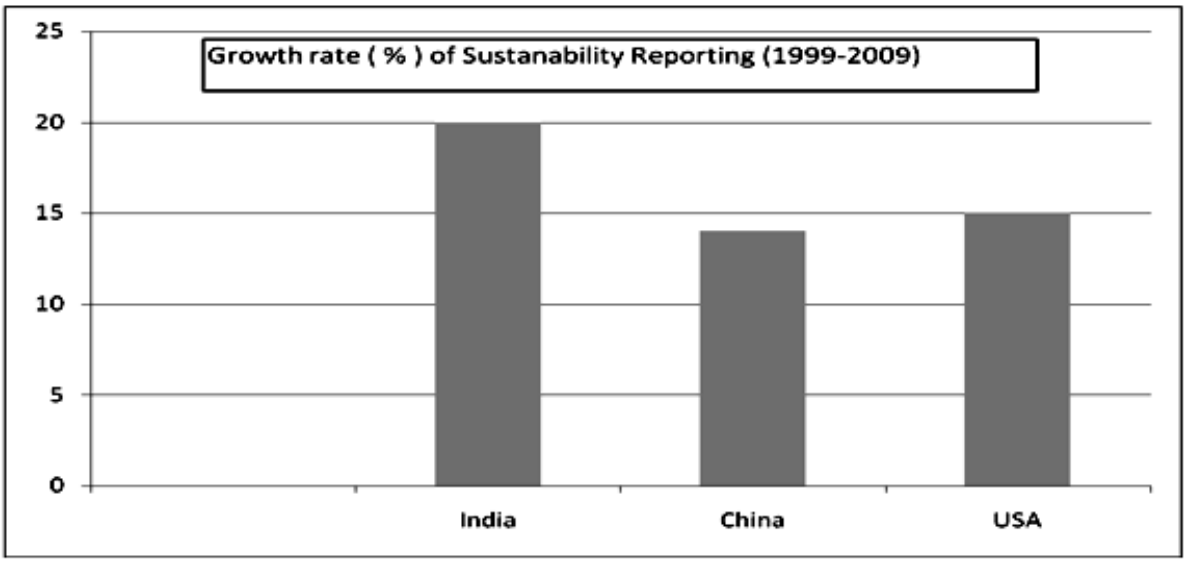
The new Company's Bill tabled in the Parliament in December 2011 is a key steps towards strengthening corporate governance and business sustainability measures. The new Bill suggest that Every company with a net worth exceeding Rs. 5 billion or a turnover exceeding Rs. 10 billion or profit exceeding Rs. 50 million should form a committee of three or more directors, including at least one independent director, to recommend activities for discharging corporate social responsibilities in such a manner that the company would spend at least 2 percent of its average profits of the previous three years on CSR. The company is also required to disclose its activities in its report or on its website, and to institute a formal policy on CSR.

Sustainability Reporting Trends in India and Around the World

Indian companies have been reporting on sustainability since 2001 by using the GRI Framework, following the Carbon Disclosure Project (CDP) or completing the UN Global Compact's Communication of Progress (CoP). The process of evolution for most companies has been to initiate the reporting process under the CDP or the UNGC CoP, and later progress into reporting under the GRI Framework, which is based on both principles and standard disclosures, including performance indicators. However, a small number of companies report under all the three reporting norms. The number of companies reporting on sustainability has been increasing but is still relatively small as compared to the total number of companies that are publicly traded in India.

The first version of the GRI Guidelines was issued in 2000. A second generation of the guideline known as G2 was unveiled in 2002 at the World Summit on Sustainable Development in Johannesburg. Some Indian companies started reporting on the G2 framework from the year it was launched in 2002. Since then, the number of reporting companies has increased steadily over the years. It can also be observed that the growth rate of sustainability reporting is higher in India as compared to China and USA in the period from 1999 to 2009.

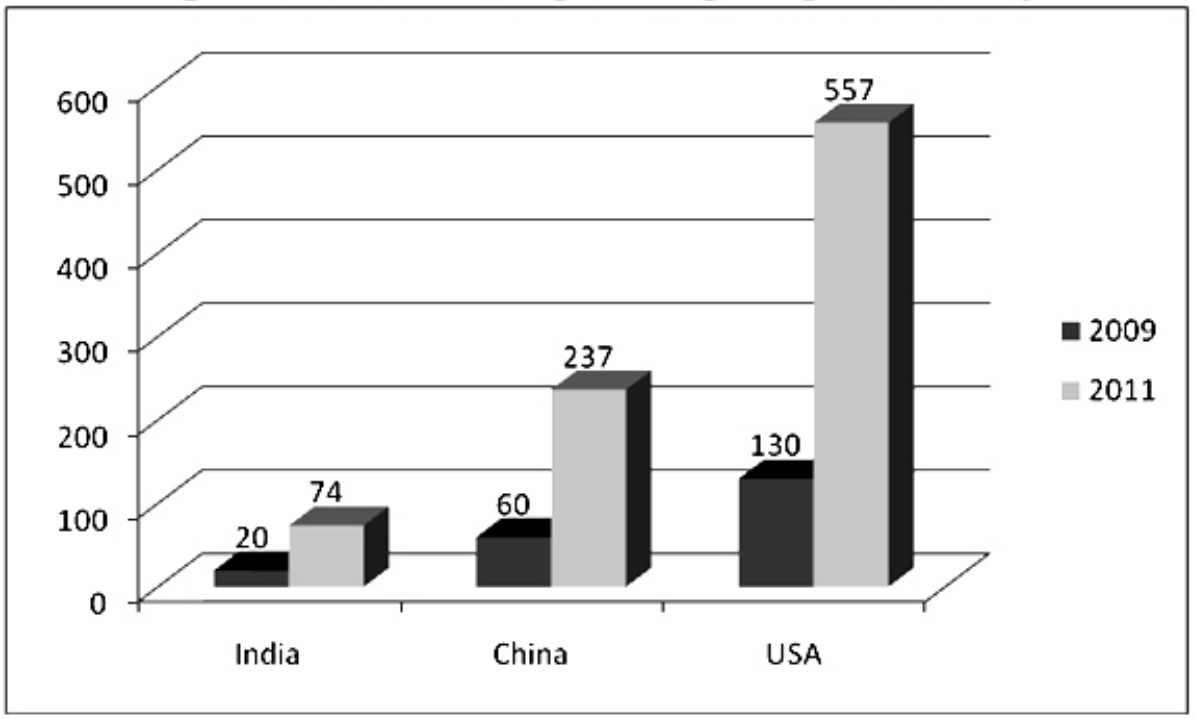
Figure-2: Growth rate in Sustainability Reporting



Source: GRI Sustainability Report

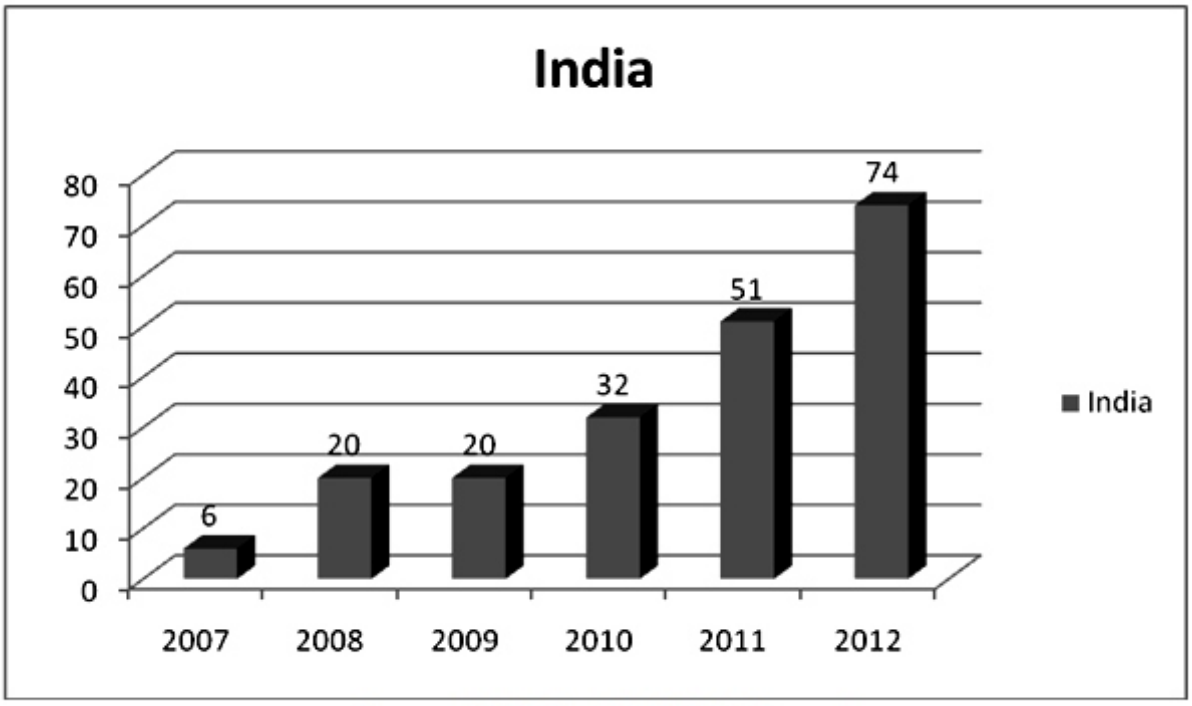
GRI launched the third generation of its Guidelines, G3, in 2006 and Indian companies transitioned to the G3 Guidelines in 2007; all reports since 2009 are based on the G3 guidelines. In a recent analysis by GRI, it has been observed that Indian companies are producing the highest proportion of complete report globally, implying the disclosure of a complete set of information that is relevant to the reporting organisation and external assurance. In March 2011, GRI published the G3.1 guidelines - an update and completion of G3, with expanded guidance on reporting gender, community and human rights- related performance - and Indian companies are adapting to these new changes in the reporting framework. There are around 80 Indian companies from various sectors that have been reporting and there are about 60 companies that publicly declare that they use the GRI guidelines, although only 74 sustainability reports are registered on the GRI database. Most of these reports disclose information on almost all aspects of performance indicators ranging from environment, social and governance, although the rigour and details vary.

Figure-3: Number of Companies Reporting Sustainability



Source: GRI Sustainability Report

Figure-4: Number of Companies Reporting Sustainability in India



Source: GRI Sustainability Report

7. Issues with Sustainability Reporting:

A recent study by University of Leeds and Euromed Management School, France based on an analysis of over 4000 CSR reports concluded that the reports have been fraught with irrelevant data, unsubstantiated claims, and gaps in data and inaccurate data and suggest that missing rigour and voluntary action results in lower public trust in such reports. Unlike financial reporting, the disclosure of sustainability metrics to the market is largely unregulated and predominantly voluntary. However, as sustainability becomes a critical factor in the business environment it would become important for companies to build a framework for these processes, information systems and controls that match the quality and focus observed in financial reporting.

A third party assurance ensures quality and consistency of disclosures. It involves verification, which is an independent, documented and systematic process of scrutinizing data, its associated processes and methods for collection and its management, which leads to an assurance statement. This indicates the reliability of disclosures and demonstrates credibility of the organization to its stakeholders. Trends in external assurance of sustainability reports based on the GRI framework from India reveals a rise in external assurance from 10% in 2006 to more than 70% in 2010. This rise in percentage is significant more so when coupled with the rise in number of GRI reports from Indian industry. It is worthwhile to note that GRI recommends the use of external assurance.

Conclusion

India is acknowledged as one of the fastest growing economies in the world; as a result, it faces the challenge of balancing fuel consumption, and its rapid growth with the equitable conservation of its key resources, and managing the impact on society. Although corporate responsibility seems to be in the experimental phase in India as of now, significant progress in both the number of reports and quality of information reported is expected, in the coming years. The expectations form Indian reporters going forward is to focus on presenting information related to:

- Sustainability issues, challenges, dilemmas and opportunities.
- Regulatory environment and fact-based information.
- Information of interest to investors such as materiality of issues in financial terms, vision and strategy statements, goals and targets, etc.
- Explanation on identification and prioritization of material issues.
- Reader friendly report design.

At the regulatory level, various directives have been issued and with some still in pilot stage. The Institute of Chartered Accountants of India (ICAI) has set up the ICAI – Accounting Research Foundation (ICAI-ARF), which has undertaken a special project to suggest a suitable framework for sustainability reporting for Indian companies. Further, the Ministry of Corporate Affairs, Government of India in association with the Indian Institute of Corporate Affairs has released the voluntary guidelines on social, environmental and economic responsibilities of business. In the financial sector, there is a visible trend to promote environmentally and socially responsible lending and investment, with the Reserve Bank of India recently issuing a circular for highlighting role of banks in promoting sustainable development. There is no doubt that corporate responsibility is here to stay and businesses have realized the value of embracing sustainability and more so making it a part of their overall business strategy.

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