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IMI Konnect, published quarterly from International Management Institute Kolkata, is an open access Scholarly Magazine in Management. It started its journey in December 2012, and publishes original research articles (non-technical) by scholars in the field of management and firsthand perspectives from business thinkers and practitioners on contemporary issues. *IMI Konnect* provides an intellectual platform for the national and international scholars and the industry experts to discuss and debate their opinions and thus contribute to the knowledge of management. It also publishes interviews with eminent personalities in the field of business.

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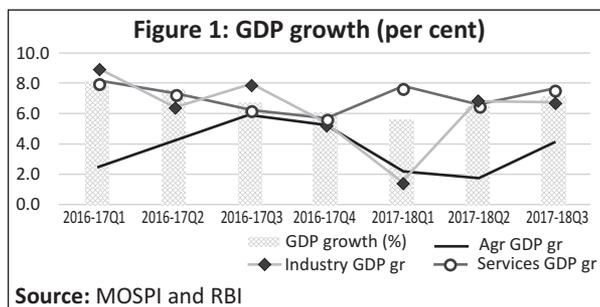
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Indian Economic Scenario*

Introduction

As pointed out by the Ministry of Finance¹ Indian economy is poised for slower growth (less than 7 per cent) during 2017-18, but it is still among the fastest growing major economies of the world. According to ADB (2018)², despite growth easing in 2017, Indian economy is projected to bounce back to 7.3 per cent in 2018 and to 7.6 per cent in 2019 as the country's new tax regime is supposed to improve productivity. World Bank³ projected that the economy will grow at 7.3 per cent in 2018-19 making it again the fastest growing economy of the world. IMF also remains bullish on India with a forecasted growth rate of 7.4 per cent⁴ in 2018-19. The RBI, in its recent Monetary Policy Report expressed optimism about economic revival and pegged GDP growth at 7.4 per cent for 2018-19. Apart from the continuing reforms like recapitalization of public sector banks, resolution of distressed assets under the Insolvency and Bankruptcy Code, lower inflation, improved current account balance and notable reduction in the fiscal deficit to GDP ratio are contributing positively to economic growth. However, rising global oil price and growing protectionist tendencies in some countries, rising external debt, stagnating agricultural sector remain to be causes for concern towards achieving a higher growth rate. After adjusting with the twin impacts of demonetization and implementation of GST, Indian economy is

expected to register a growth rate of around 6.5 per cent⁵ in 2017-18 [Figure 1].



Scenario in the Real Sector

The sectoral GDP growth indicates that the agricultural sector has been exhibiting the lowest growth rate during the FY 2017-18 with a revival in the last quarter. The industry maintained a growth of over 6 per cent during the last two financial years with a slump to 1.5 per cent in the first quarter of 2017-18 but registered a steady revival in the second quarter. The steady growth of industry continued in the third quarter also. Compared to these sectors, service sector which accounts for more than 55 per cent of Indian economy, was quite consistent in the last two years. With an exception of 5.7 per cent in last quarter of 2016-17, the sector maintained a growth rate between 6.3 per cent and 8.2 per cent in the recent past [Figure 1]. The GDP growth in first quarter of 2016-17 was 8.1 per cent, which declined steadily to 5.7 per cent during first quarter of 2017-18; however, GDP revived and growth rate

* Editorial Team, *IMI Konnect*

¹ *The Economic Survey, 2017-18*

² *Asian Development Outlook, ADB, 2018*

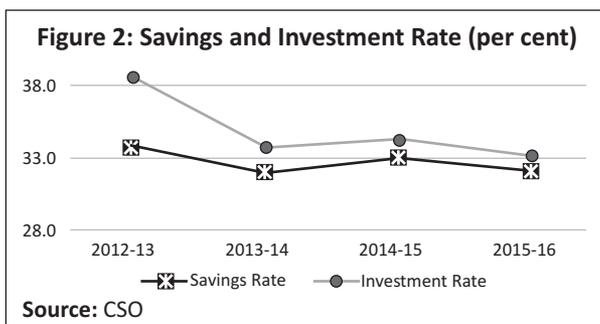
³ *Global Economic Prospects-South Asia, World Bank, January 2018*

⁴ *IMF World Economic Outlook, April 2018*

⁵ *The Economic Survey, 2017-18*

increased to 7.2 per cent in the third quarter. The decline was mainly attributed to the undesirable effects of demonetization undertaken in November 2016 and the GST implementation in July 2017.

The savings rate and investment rate⁶ were range bound during the last few years, hovering between 32 per cent and 34 per cent and between 33 per cent and 39 per cent, respectively [Figure 2]. Interestingly, throughout all these years, investment rate was higher than savings rate owing to the foreign investment inflows.

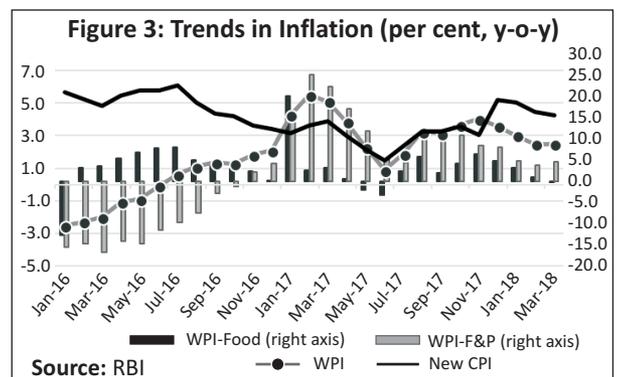


Recent Trends in Inflation

After the adoption of inflation targeting by the Reserve Bank of India (RBI), the Consumer Price Index (CPI) is being tracked as the benchmark of change in prices in the economy⁷. The new CPI monthly inflation (y-o-y) continued to moderate during 2016-17 and 2017-18; it ranged between 1.5 per cent and 3.6 per cent between April 2017 and November 2017, but then started to record a rise since December 2017. In January 2016, CPI inflation stood at 5.7 per cent and did not rise beyond 6 per cent till August. From September onwards, it eased and settled in a comfortable zone

on account of favourable monsoon and falling food prices and reached the low of 1.5 per cent in June '17, in line with sharp plunge in Wholesale Price Index (WPI). CPI increased from next month and again crossed the mark of 5 per cent in December 2017 on the back of higher government expenditure due to higher HRA and concomitant higher consumption expenditure [Figure 3].

The WPI inflation remained subdued for several months during 2016, then surged during January and March 2017 owing to sudden increase in global crude oil prices. However, with the moderation in the global crude prices, inflation also came down to 0.9 per cent in June 2017. But, with renewed rise in global oil prices in the successive months, coupled with rising food prices owing to the waning of positive supply shocks, inflation rose and reached the level of 3.6 per cent in December 2017. However, food prices eased and in March 2018, WPI inflation remained at 2.5 per cent [Figure 3]. With continuous surge of global oil prices, WPI-fuel and power rose steadily since January 2016 month on month and reached a record high of 25.17 per cent in February 2017. With fall in global crude



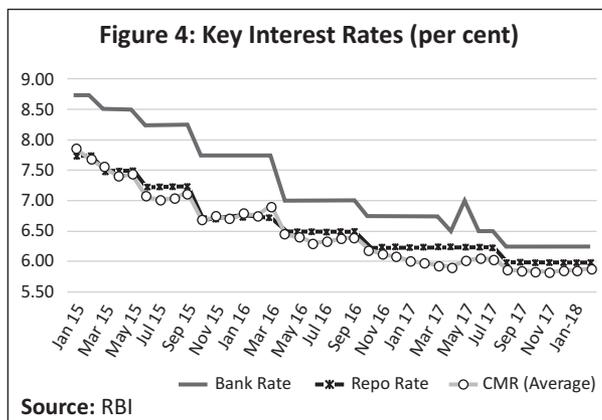
⁶Savings rate is gross domestic savings as a proportion of GDP and Investment Rate is Gross Capital Formation as a proportion of GDP.

⁷From January 2015, the base year of CPI has been changed from 2010 to 2012 and to keep parity with changing consumption habits of Indian consumers with rising per capita disposable income, the weightages of sub-components have also been revised. This new CPI inflation is referred here as new CPI or CPI.

oil price, it touched 4.7 per cent in March 2018.

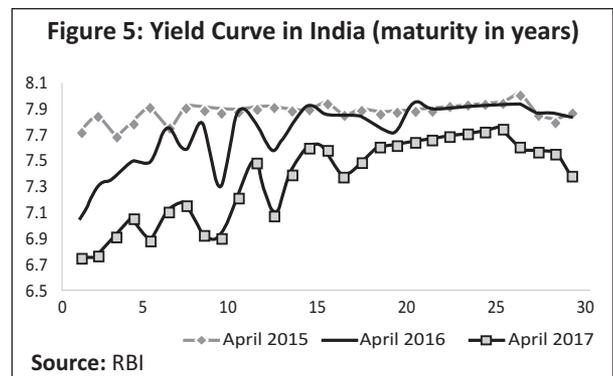
Movement of Key Interest Rates

Over the last few years, Reserve Bank of India has cut down the policy rates to ensure smooth liquidity supply and support growth on the face of sluggish GDP growth and stable inflation. During January 2015 to February 2018, SLR has been slashed from 22 per cent to 19.5 per cent in phases. The CRR was kept stable at 4 per cent during the same period. The downward movement of market determined weighted average call money rate (CMR) also indicated easy liquidity in the system. The Bank Rate was 8.75 per cent in January 2015 which was reduced to 6.25 per cent in August 2017. As of February, 2018, the rate remained the same. Similarly, the Repo Rate which was at 7.75 per cent in January and February 2015, was reduced to 6 per cent in August 2017 and the rate remained unchanged upto February 2018. The movement of call money rate representing the short term money market was quite in synchronization with the Repo Rate. With slight hardening at times depending on market liquidity conditions, during the period of January 2015 to February 2018, CMR also showed a steady decline from 7.9 per cent to lower than 6 per cent [Figure 4].



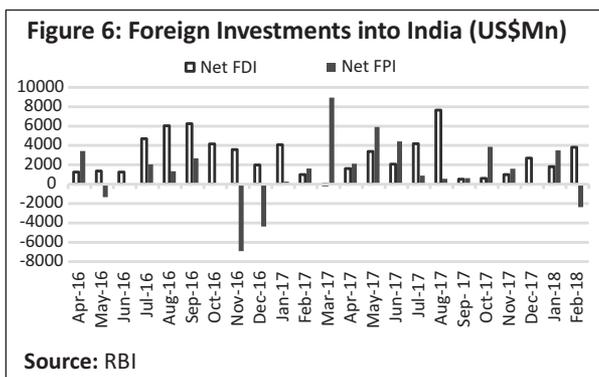
As a positive indication for the Indian industrial sector, bank credit to the commercial sector has risen during the period from July 2016 to July 2017. In March 2017, the credit disbursal was at its high with ₹91018 billion disbursed to the commercial sector by the banks. The upsurge reflects the increasing business activity and overall vibrancy of the Indian economy.

The monthly yield curves for the Indian economy for last three years are shown in Figure 5. In order to compare the movement of yields across maturities (in years), yield curves for the month of April for 2015 to 2017 have been presented here. The yield curve was quite flat in 2015 implying a very small spread across maturities. But, in 2016 and 2017 yields on maturities in the short and medium run have fallen significantly, while those on the longer run have recorded a fall much less sharper. For example, the yield on a 5-year maturity government bond was at 7.9 per cent in 2015 and it fell to 6.9 per cent in 2017, whereas the yield on a 25-year maturity government bond fell to only 7.7 per cent from 7.95 per cent during the same period. The movement of yield curve in the short run has some peculiarity in the sense that yields on 5-year maturity is less than that of 3-year and 4-year maturity government bonds implying uncertainty in the short to medium run.



Recent Trends in Financial Markets

India continued to be an attractive destination of foreign institutional investors in the last two years [Figure 6]. Net FPI investments⁸ started to recover since calendar year 2017, backed by expectations of an economic recovery, falling interest rates and improving earnings outlook. After a net outflow of investments in 2016, a sharper turnaround was observed in 2017, particularly in terms of FII inflows into debt markets. In February 2018, FPI again hit the negative zone after December 2016, following the global trend where institutional investors are withdrawing money from emerging markets to invest in US after US bond yields touched record high. On the other hand, FDI inflows have been quite steady during the last two years.



The recovery of Indian economy also set the favourable mood for the stock exchange with turnover in National Stock Exchange (NSE) showing overall upward trend with slight fluctuations during the FY 2016-17. In April 2016, the turnover was ₹3094.8 billion which registered month on month growth in an uninterrupted manner only with a slight fall for the months of

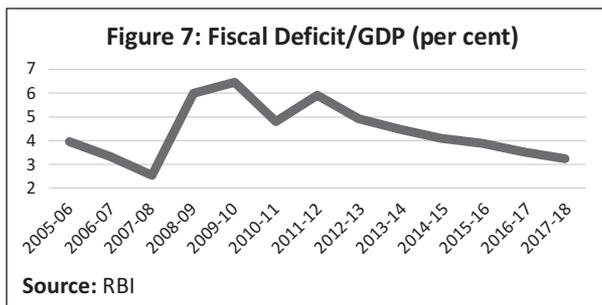
October and December 2016. The stock exchange continued with this optimism and the turnover rallied further in the following months to touch ₹5439 billion in July 2017. Turnover in Bombay Stock Exchange (BSE), although quite smaller in size compared to NSE, clocked positive growth during the period of April 2016 to March 2017 with moderate volatility and downward movement in the months of October and December 2016 and also in April 2017. The turnover increased sharply from ₹491 billion in April 2016 to ₹2891 billion in March 2017.

Government Budget

As mentioned in this year's budget, the central government has been able to contain the fiscal deficit (FD) as proportion to GDP at a level below 4 per cent since 2015-16. Fiscal deficit as percentage of GDP stood at 3.96 per cent in 2005-06 which surged sharply to 5.99 per cent in 2008-09 and then further to an 11 year high of 6.46 per cent in 2009-10. The worsening of fiscal deficit was driven by increased government expenditure and tax cuts to promote growth. In 2010-11, strict fiscal consolidation by the government could contain fiscal deficit to a much lower level. From 2012-13 onwards, the FD to GDP ratio declined steadily thanks to stringent policy measures like reduction in subsidy bill and higher tax revenue and non-tax revenue collection. In FY 2017-18, the fiscal deficit stood at reasonably low of 3.24 per cent [Figure 7].

In the context of implementation of GST in July 2017, it would be really interesting to note the changes in the collection of revenue on account of indirect taxes. It has been observed that in 2016-17 the central government has been able to generate an

⁸Net FPI consists of American Depository Receipt/Global Depository Receipt, Foreign Institutional Investment, Offshore funds and others, net of Portfolio investment by India.



GST council's meeting took place on May 4, 2018. The discussions relate to the imposition of sugar cess to benefit the farmers - in clearing their dues, de-privatization of GSTN, simplification of GST filing, incentivizing digital payments through concessional GST rates, the E-Way bill and inclusion of real estate/property transfer under the GST regime.

Performance of the External Sector

The balance of payment situation in India continued to be comfortable during the period 2006-07 to 2016-17. The current account deficit to GDP ratio (CAD/GDP) hovered between 0.7 per cent and 4.8 per cent during 2006-07 and 2016-17. Owing to a sharp rise in gold imports and increase in oil prices, CAD/GDP ratio crossed 4 per cent mark in 2011-12 and 2012-13. However, improved invisibles balance along with net capital inflows dominated by foreign investment and banking capital was more than sufficient to reduce the CAD/GDP ratio substantially. Increased foreign investment led to a significant rise in foreign exchange reserves to the tune of US\$ 350369 million in January 2016 to US\$ 359155 million in January 2017. FY 2017-18 also started with a good note and at the end of July 2017, the forex reserve amounted to US\$ 392868 million. This led to a comfortable import cover for India of more than 11 months during 2016-17 [Table 1].

The INR has been quite stable against US Dollar and Euro during the last few years. Despite occasional depreciation against US Dollar during 2015-16 and 2016-17, the fluctuations have been limited. During 2017-18, the movement of rupee showed an appreciating bias against the US Dollar,

indirect tax revenue of ₹5.6 lakh crore and the state governments have collected a revenue of ₹15 lakh crore⁹. During 2017-18, total revenue collected under GST in the period between August 2017 and March 2018 has been ₹7.19 lakh crore. This includes ₹1.19 lakh crore of CGST, ₹1.72 lakh crore of SGST, ₹3.66 lakh crore of IGST and ₹62,021 crore of cess. For this eight months, the average monthly collection has been ₹89,885 crore. Including the collection of July 2017, the total GST collection during the financial year 2017-18 stands provisionally at ₹7.41 lakh crore. Also, there has been a progressive improvement in the compliance level observed during the course of the year; compliance level has reached an average of 65 per cent by the end of financial year from around 55-57 per cent observed during initial months. The SGST collection during the year, including the settlement of IGST has been ₹2.91 lakh crore and the total compensation released to the states for a period of eight months during the last financial year was ₹41,147 crore to ensure that the revenue of the states is protected at the level of 14 per cent over the base year tax collection in 2015-16.¹⁰

However, since many goods are outside the purview of GST, some discussions are on the offing whether and how to incorporate them into this system. The

⁹RBI Handbook of Statistics on Indian Economy, latest issue.

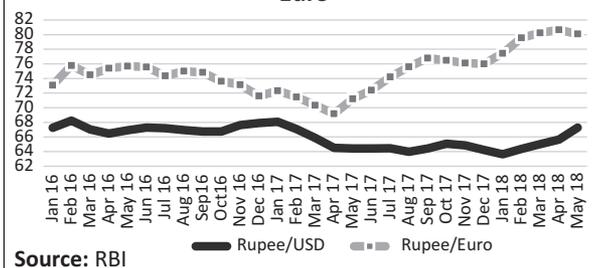
¹⁰PIB Press Release, April 27, 2018, Ministry of Finance, GOI.

Table 1: BoP Situation in India

	Current Account Deficit/GDP (%)	Import Cover of Reserves (months)
2006-07	1.0	12.5
2007-08	1.3	14.4
2008-09	2.3	9.8
2009-10	2.8	11.1
2010-11	2.8	9.5
2011-12	4.2	7.1
2012-13	4.8	7.0
2013-14	1.7	7.8
2014-15	1.3	8.9
2015-16	1.1	10.9
2016-17	0.7	11.3

Source: RBI

barring intermittent depreciation in September and October 2017 [Figure 8]. Three major factors triggered the appreciation of Indian Rupee. First, the large volume of FPI inflow in Indian debt market, which increased steadily on account of relatively higher yield on debt, pushed up the value of Indian Rupee. Second, the continued weakness of US Dollar throughout 2017 has been a major contributor; the Dollar Index¹¹ tumbled over 12 per cent from around 104 in January 2017 to 91 in September 2017. Third, the newly found optimism of business fraternity in Indian economy possibly based on recent developments in political scenario also provided a boost to Indian exchange rate. However, the strong performing Rupee seemed a bit volatile since the beginning of 2018. Widening current account deficit on account of increasing merchandise deficit, rising crude and gold prices, steadily rising external debt and over-valued Real Effective Exchange Rate (REER)¹² can further add to the woes of Rupee.

Figure 8: Movement of Rupee against USD and Euro

Although the European Union is still suffering from the aftermath of Brexit, European Economy is recovering and the Euro is going strong which is vividly reflected in the India-Euro exchange rate movement [Figure 8]. Indian rupee depreciated steadily since April 2017 against Euro, barring a few months.

Challenges Related to Rising International Crude Prices

Petroleum prices are skyrocketing with the crude benchmark climbing to US\$75 per barrel. Many of the South-east Asian countries import more than 80 per cent of the oil it consumes and are facing widening trade deficits triggered by this petroleum price rise. India is also heavily dependent on crude oil import; the recent depreciation of rupee to the mark of ₹67 per US\$ relates largely to the rising crude prices. Over and above this base price of petroleum, hefty excise and sales taxes are imposed by the centre and the states respectively. There are wide ranging variations in the petrol prices across Indian states, almost 6 per cent-40 per cent, primarily triggered by the varied ranges of

¹¹Dollar Index is an weighted Geometric Mean of Dollar's value against currencies of six major trading partner of Dollar namely Euro, Japanese Yen, Pound Sterling, Canadian Dollar, Swedish krona and Swiss Franc.

¹²Real Effective Exchange Rate is the weighted average of exchange rates adjusted for relative price differential between the domestic and foreign currency. Generally, 6 currency trade weighted REER and 36 currency trade weighted REER for India are available.

(effective) sales taxes imposed and collected by the states. The centre's duty on petroleum is 'specific' while that of the states is ad valorem (based on value). Obviously, rising prices lead to huge revenue collection for the states, though the gains vary quite a bit across states. So far, petroleum has been kept out of GST. Though there are discussions to bring it under this integrated tax network, it is yet to materialize with the full consent of the states. To find a common rate which is both RNR (revenue neutral) and same across states is a real challenge for the GST council; the RNR might be as high as 100 per cent. From the centre's point of view, the excise duty cut and integrating petroleum under the common tax platform viz. GST, might disrupt the fiscal consolidation efforts towards meeting Fiscal Deficit targets.

Business Sustainability: Exploring the Meaning and Significance

Ritika Mahajan* and Montu Bose**

Abstract

The positive impact of recent economic growth has been observed in many countries and consequently it has lifted millions out of poverty and improved standard of living for the middle-class. However, there has been some costs associated with this development. Social inequality and youth employment have worsened, women are still paid less wages for equal work as compared to men, and the environment has deteriorated in a variety of ways. This indicates that the progress being achieved is not the progress desired; maybe there are flaws in the process of development and hence arises the need for discussing sustainable development. Business organizations are considered as a significant stakeholder with a potential to contribute to sustainable development. In this background, the present paper focuses on the concept of business sustainability and challenges for implementing the business case for sustainability. It is observed that majority of the business organizations do not have much details on how their organizations plan to adopt a sustainable business strategy- apart from investing in Corporate Social Responsibility (CSR) activities. It is suggested that more collaboration among business, government and academia, and a systematic change for facilitating business to achieve sustainable development through political will, public intention, and most importantly- the top management commitment are primarily needed.

Introduction

According to the World Bank report (2013)¹, the number of people living on less than US\$ 1.25 per day has decreased considerably in the past 30 years from 50 per cent to 21 per cent in the developing world, despite a 59 per cent increase in population. Although economic growth has lifted millions out of poverty and improved standard of living for the middle-class, there has been a cost associated with this development. For example, the number of natural disasters in the world has doubled since 1980². Social inequality and youth employment have worsened, median real wages have been stagnant in

developed countries since 1989 and women are still paid less for equal work as compared to men.³ This is some indication that the progress being achieved is not the progress desired; maybe there are flaws in the process of development and hence arises the need for discussing sustainable development.

Today, economies across the world are grappling with unprecedented challenges traversing social, economic and environmental dimensions of sustainability including climate change, natural disasters, loss of biodiversity, hunger and malnourishment, economic inequity, social insecurity and so on. The United Nations General

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¹<http://www.worldbank.org/en/news/press-release/2013/04/17/remarkable-declines-in-global-poverty-but-major-challenges-remain>

²<http://www.teebweb.org>

³<http://report.businesscommission.org/>

Assembly adopted the Sustainable Development Goals (SDGs)⁴ on September 25, 2015 that unleashed a new agenda to end poverty, ensure world prosperity and protect the planet by 2030. Under these 17 goals, 169 specific targets demonstrate the scale of this universal agenda that seeks to achieve a balance between the economic, social and environmental aspects of sustainable development.

Business organizations, particularly the large organized corporate sector, is considered as a significant stakeholder with a potential to contribute to the SDG; given the resources at their disposal, their sphere of influence, and business opportunities associated with sustainable development. A recent report by the Business and Sustainable Development Commission published in 2017⁵ has indicated that a focus on only four aspects under the SDGs- namely health and well being, food and agriculture, cities and energy and materials- can open market opportunities worth US\$12 trillion. However, it requires business organizations to integrate sensitivity to the dimensions of sustainability in their decision-making models. There are organizations already working towards this integration and acknowledging through their products and services, processes and practices that a healthy society and environment are necessary for creating a market. But the transition is challenging and critically dependent on factors like leadership, managerial perceptions, customer expectations, government support, regulatory frameworks in action, etc. in the organizations that challenge the status quo. However, the lexicon of sustainability is slowly

entering boardroom discussions, stakeholder meetings and annual reports. The next sections give an overview of the concept of business sustainability, business case for sustainability, challenges for implementing the business case and overall observation.

The Concept of Business Sustainability

Business sustainability can be explained as the process of managing an organization by considering three different aspects, viz. economic, social and environmental. It may also be referred to as the triple bottom line approach.

In 1999, the United Nations Secretary General Kofi Annan announced the world's largest corporate sustainability initiative known as the UN Global Compact⁶ to encourage businesses world-wide to 'align strategies and operations with universal principles on human rights, labour, environment and anti-corruption, and take actions that advance societal goals.' It is a voluntary initiative working primarily based on CEO commitments. In 2007, the UN Global Compact launched the Principles of Responsible Management Education (PRME). These are a set of six principles to be adopted by management institutions for educating and training managers with sensitivity to social and environmental challenges along with an understanding of economic issues. This initiative was a result of the criticism of existing management programmes that created managers devoid of the ethos of sustainability.

Although over the past two decades, awareness about sustainable development in business organizations has increased, there are doubts and

⁴<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

⁵<http://report.businesscommission.org/>

⁶<https://www.unglobalcompact.org/what-is-gc>

ambiguities about how to achieve it. Hart and Milstein (2003) proposed a sustainable value creation framework based on a notion that business can create shareholder value by addressing sustainability challenges. They discussed four dimensions of a sustainable business strategy, i.e. preventing pollution, product stewardship, clean technology and base of the pyramid. They also opined that such opportunities may be the most 'under-appreciated areas' of profitable growth in the future. Closely related to this, an idea was discussed called 'Strategic Corporate Social Responsibility' by Porter and Kramer (2006) and later, by the name of 'Creating Shared Value' in 2011 in articles published in the *Harvard Business Review*. The authors discussed a variety of examples of conceptualizing new products and markets, revisiting value chains, and focusing on community development to create economic and social value simultaneously. But the concept of creating shared value is like old wine in new bottle and similar to concepts like stakeholder management, strategic CSR or social innovation in the existing literature. Some other researchers have also advocated the idea of meeting profitability goals by addressing sustainability strategies (Larson, Teisberg & Johnson, 2000; Lubin & Esty, 2010). This is popularly known as 'the business case for sustainability', explained in the next section.

Business Case for Sustainability

Various studies have been conducted to explore the sustainability practices and strategies of companies, and the relationship between such strategies and financial performance indicators (Davis, 1991; Elkington, 1994; McWilliams & Siegal, 2000; Mill, 2006; Hess & Warren, 2008; Porter & Kramer, 2011; Gupta, 2017). But the evidence is mixed. In many cases, the subject of investigation has been

restricted to CSR or philanthropy to be precise, rather than sustainability.

It must be emphasized that the concept of business sustainability is based on long-term thinking, not a short-term perspective. Thus, any data used to reflect the relationship between sustainability and financial performance may not reveal any significant insights. This is not only about appreciating the need for social or environmental consciousness, it is about paradigm shift in the mindsets of managers. Three important areas where the potential of business sustainability can be explored are: a) resource optimization through 'recycle, re-use and reduce' strategies in business processes and supply chains, b) protecting brand value through stakeholder engagement and support including fulfilling regulatory requirements and c) selling to a niche market of green consumers ready to buy products and services at a premium.

The most prominent example given time and again about brand value in the Indian context is- the Tata Enterprises and the way they have created better lives for their employees as well as the society. There is a general acknowledgment among stakeholders about the focus of Tatas on sustainability that has improved their business reputation. This is more critical in the contemporary times of social media marketing, where one bad move can mar the reputation of a company, and even a slight decrease in brand value can be very costly. Thus, the link between sustainability, reputation and trust is that a sustainable business garners reputation because stakeholders trust in the present and future vision of such a business. But these linkages are still ambiguous and more research can bring out specific information on how sustainability enhances reputation.

As far as market opportunities are concerned, the

corporate sector is gradually accepting the fact that it is not through philanthropy or charity but through activities integrated to its core competencies that the businesses can make a significant impact. However, such competencies ensure economic prosperity be decoupled from environmental and social detriments and there should exist an organization-wide commitment for sustainable development. This is also somewhat like the idea propounded by Adam Smith (1776) when he wrote in 'The Wealth of Nations', 'It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest'.

Another motive underlying the business case for sustainability could be regulatory requirements and sometimes, sustainability may not be an option for the business but a compulsion because of market competition. The recent Business Responsibility Reporting (BRR)⁷ framework that makes it compulsory for top 100 companies in India to publish BR reports is one example in this regard. However, all of this is easier said than done. To implement the business case for sustainability, there are some very important challenges like whether business organizations accept the business case for sustainability, whether the managers are trained for implementing the business case, whether the top management is committed to the case, etc. These challenges have been discussed below in more detail.

Challenges for Implementation of Business Case

Building Partnerships for Systematic Change

The business community and its intentions are always viewed with skepticism. But we must look at the holistic picture to draw any inference because business organizations do not operate in isolation.

They operate in an environmental context amid a variety of stakeholders; just like they affect stakeholders, they are also affected by them.

Thus, building partnerships between different stakeholders like the government, industry and civil society for a systematic change is extremely important. Sustainable businesses require healthy ecosystems that support their strategies; only then the money spent in this direction can be looked as an investment and not as a loss. Sometimes, laws are manipulated by politicians to impose penalties on business houses. Another issue with business houses is that potential customers indicate an intention to purchase an environment-friendly product for a premium in a market research survey, but do not buy it⁸ once it is launched.

Education and Training of Managers

To implement sustainability, there is also a critical need for well-trained and educated managerial workforce to implement sustainable business strategies. The current managerial workforce is not well equipped to understand the nitty-gritties of business sustainability. There is lack of technical knowledge as well as psychological resistance. Incorporating such training in existing management programmes is slowly catching up at a global level. There is no doubt that if the existing programmes are harnessed to make an impact in business organizations, the outcome could be significant considering the number of graduates completing these programmes every year. But transition from conventional to management education for sustainable development is extremely challenging as it requires a combination of experts from different domains of knowledge, and a

⁷https://www.sebi.gov.in/legal/circulars/nov-2015/format-for-business-responsibility-report-brr-_30954.html

⁸Popularly known as value-action gap in green consumer behaviour

facilitating environment for inter-disciplinary collaboration and feedback. The objective of a manager as taught in most of the Business Administration programs is to look at profit maximisation or more recently, at wealth maximisation. The concepts and principles of sustainability have been introduced mostly in the last decade and that too in the form of standalone courses rather than through holistic integration in different courses.

Top Management Commitment

Top management commitment is, in fact, the most important enabler for formulation and execution of sustainable business strategies. If top bosses of the company do not have a genuine intention to look at sustainability integration, the middle and lower levels of management cannot do much. They can make plans, but those plans must be in line with the overall strategy of the company- which is the domain of top management. For this, business leaders have to be convinced with the business case for sustainability. They must set such a vision for the organization, define goals that are measurable and chalk out guidelines that are precise for lower levels of management to commit to sustainability initiatives. The biggest challenge is the ambiguity in the concept of sustainability and the long-term time frame associated with the results of a sustainable strategy. Thus, the business world needs leaders with a holistic worldview and a tolerance for ambiguity to be able to drive transformational change. Further, more involved the leaders are with sustainability initiatives; stronger will be their belief about the impact of these initiatives.

Indian Experience

Sustainability reporting in India is still at a nascent stage. However, in last few years, the economy has been showing positive signs in embracing the concept of business sustainability. It has been observed that strengthening of reputation, brand and ethical considerations prompt companies to adopt the concept. However, sustainability has still not been integrated into the mainstream business strategy and operations in India⁹.

In India, most of the companies use Global Reporting Initiative (GRI) guidelines to prepare the sustainability reports and very few communicate the key priorities to the stakeholders and use feedback from stakeholders to define the report content. Additionally, extremely low use of risk assessment frameworks and sustainability strategy to select the report content show that sustainability issues have very poor linkage with the business strategy of the companies. Many Indian companies have started reporting their sustainability performance; however, they have not channeled their efforts under a well-defined sustainability strategy and SMART (i.e., Specific, Measurable, Achievable, Realistic and Time-bound) targets.¹⁰

Despite all such flaws, there is evidence that Indian companies are concerned about sustainability issues and big companies have clearly linked the sustainability and risk management issues of their businesses. However, there is a long way to go before sustainability is entirely integrated in businesses in India and in many cases, it is still at an experimental level. We can expect significant progress in the indicator in the coming years.

⁹http://www.iodonline.com/Articles/Arvind%20Sharma%20%20Sustainability%20Reporting%20Trends%20in%20India_KPM G.pdf

¹⁰http://www.iodonline.com/Articles/Arvind%20Sharma%20%20Sustainability%20Reporting%20Trends%20in%20India_KPM G.pdf

Overall Observation

To put it all together, although the awareness about business sustainability has increased among stakeholders, yet majority of the business organizations do not have much details on how their organizations plan to adopt a sustainable business strategy- apart from investing in CSR activities, particularly of philanthropic nature in the 'education' or 'health' sector. Despite logic in the business case for sustainability, it will take a while for business leaders to shift from a short-term focus to a long-term perspective.

However, improved awareness is certainly good news because the business world cannot undergo a major transformation overnight. Apart from breakthrough innovations, even incremental steps are positive signs of change. This calls for greater faith of government and civil society in the intentions of business, integration of sustainability ethos in management education and training, thus bidding farewell to short term financial performance indicators. Far more collaboration among business, government and academia and a systematic change for facilitating business to achieve sustainable development through political will, public intention and most importantly the commitment of top management are the need of the hour.

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The 'Business' of Resource Efficient Design

Making Business Sustainable and Profitable

Praveena Sanjay*

Abstract

We are a nation of around 7.2 billion people today. According to the United Nations, this figure is expected to increase to 8.6 billion in 2030 and 9.8 billion in 2050. 'The World Count' (a 'live' web counter) states that the amount of natural resources present on the earth is enough to satisfy the needs of only (about) 2 billion people. The writing on the wall is clear...in order to safeguard our dwindling natural resources, we need to 're-think' our current business practices of 'unrestricted' and 'unsustainable' growth to more sustainable means of production and consumption. 'Resource Efficient' Design plays a critical role in this endeavour, as it aims to prevent waste and use resources for longer, thus building a more resilient and sustainable business economy. The current article delves on the concept of resource efficient design and its significance in making businesses more sustainable and profitable. Key policies that could drive resource efficiency and few case studies are briefly presented, followed by some recommendations that conclude the article.

Introduction

According to the International Resource Panel of the United Nations Environmental Programme, current business-as-usual (BAU) production and consumption patterns of the world will lead to consumption of 140 billion tonnes of natural resources (minerals, ores, fossil fuels and biomass) per year by 2050. This is more than twice the amount of today's consumption levels of 60 billion tonnes [EEB(2015)]. In India, around 97 per cent of all materials (abiotic and non-renewable) consumed, are extracted domestically. Between 1970 and 2010, around 420 per cent of such primary raw material was extracted, which, according to the Government of India's 'Strategy on Resource Efficiency', is lower than the Asian average but higher than the world average. Notably, extraction of non-metallic minerals has grown during this period, especially to

cater to the ever-growing construction sector. With a population of 1.3 billion, accounting for 18 per cent of the global population, but living on only 2.4 per cent of the world's surface, India is expected to face significant resource constraints in the coming years [NITI (2017)].

In addition, according to an Indo-German Environment Partnership (IGEP) report, India's material requirements are projected to be almost 15 billion tonnes by 2030, as per its medium growth scenario. This means a tripling of its primary materials demand (especially energy carriers, metals and non-metal minerals) as compared to 2010. Increased domestic resource extraction is thus expected to exert tremendous pressure on natural resources such as land, water and air [NITI (2017), IGEP (2013)].

Going by the above statistics, businesses across the

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globe can no longer afford to tread the “business-as-usual” pathway of 'unrestricted' economic development. There is an urgent need to shift from this traditional growth paradigm of depleting natural resources (minerals, ores, fossil fuels and biomass) and proliferation of waste, to a new development paradigm, where economic growth goes hand-in-hand with environmental and social development (constituting the three pillars of sustainable development) and embraces the concept of resource sufficiency by adopting the philosophy of 'resource efficient design'.

The Resource Efficient Design Concept: What Does It Actually Mean?

So what exactly is “Resource Efficient Design”? Have businesses not been adopting 'efficient and eco-friendly design' practices for some time now? For example, have they not designed energy efficient refrigerators and air-conditioners and energy saving washing machines? What about using bio-degradable and eco-friendly materials in products instead of the polluting and non-degradable plastic? If these questions are resonating in your mind, let me try and explain this concept of 'resource efficient design' in more detail.

BOX 1

Resource Efficient Design: The New Vision

Redefining businesses to be more:

Responsible: redefining goals around social/eco-equity needs.

Synergistic: involving different elements to create positive and synergistic systematic changes.

Contextual: re-evaluating designing

conventions and concepts towards social transformation.

Holistic: taking a lifecycle view to ensure low-impact, low-cost, multifunctional outcomes.

Empowered: fostering human potential, self-reliance and ecological understanding in appropriate ways.

Restorative: integrating the social and natural world.

Eco-efficient: aiming to increase the economy of energy, material and costs.

Creative: transcending traditional boundaries of thinking and moving into a more 'out-of-the-box' way of life.

Visionary: focusing on the future of product design and developing appropriate methods, tools and processes to deliver them.

Source: Birkeland, J. (2002) Design for Sustainability: A Sourcebook of Integrated, Eco-Logical Solutions, Earthscan Publications, Sheffield, UK; Module on Resource Efficient Design, DMU, Leicester, UK.

Resource Efficient Design: From Past to the Present

It all began with the 'Green Design' phase that occurred during the 1960s and 1970s, courtesy the growing concern about the 'finiteness' of our natural resources and the emergence of environmental groups like 'Friends of the Earth' and Greenpeace. During that time, Victor Papanek, designer, educator and staunch advocate of ecologically and socially responsible design, and a few others like him, embarked on 'greener' ways to develop products. One such product was a radio he and his students made from a transistor that worked on paraffin wax and a wick fixed inside a recycled juice can [Ozawa-Meida & Lemon (2016)].

Post the 'Green Design' phase came the 'Eco-design' phase in the 1980s and 1990s, when environmental crises like the Bhopal Gas Tragedy and Chernobyl nuclear disaster, resulted in increased environmental regulation and safety norms being prescribed [Ozawa-Meida & Lemon (2016)]. This gave rise to 'eco-friendly' products being designed, which took into consideration the environmental impacts across the entire lifecycle of the product, right from extraction of raw materials to processing, manufacturing, distribution, use and finally, recycling and disposal.

But unfortunately, both the 'green design' as well as 'eco-design' phases could neither curb the continued depletion of our resources (natural resources as well as metals, ores and minerals), nor the looming threat of climate change. So this gave rise to the new phase of design called 'sustainable design' which took into consideration the fact that 17 per cent of the world's population consumes 80 per cent of the world's resources [Ozawa-Meida & Lemon (2016)]. This meant designing products that not only took care of environmental concerns but also social and ethical concerns.

More recently, designing for sustainability gave rise to the futuristic version of 'resource efficient design', which brings into perspective not only the design of the product, but also how we can use resources for designing in a more efficient way. Thus, Resource Efficient Design can be broadly defined as, "the design of more sustainable products, processes, services, and systems which aim to increase the longevity of a product by using resources in more efficient ways." This concept not only addresses sustainable design of the product, but also encourages businesses to rethink the way in which they deliver these products to meet their objectives in a more holistic, systemic and sustainable manner

(BOX1) [Ozawa-Meida & Lemon (2016)].

From 'Cradle-To-Grave' to 'Cradle-To-Cradle'

As we all know, there are different stages in a product's life. These together are called the 'lifecycle' of the product and include the stages of extraction of raw materials, processing, manufacturing, distribution, use, recycling and disposal (Figure 1). As can be seen in Figure 1, the lifecycle process is linear; there is a start and end stage of the product. This is called the 'cradle-to-grave' approach, which, while giving due consideration to the environmental impacts related to production (following the 3Rs of 'reduce, reuse, and recycle'), does not actually consider the finiteness of resources and the need to 'put back' into the natural environment what we have taken.

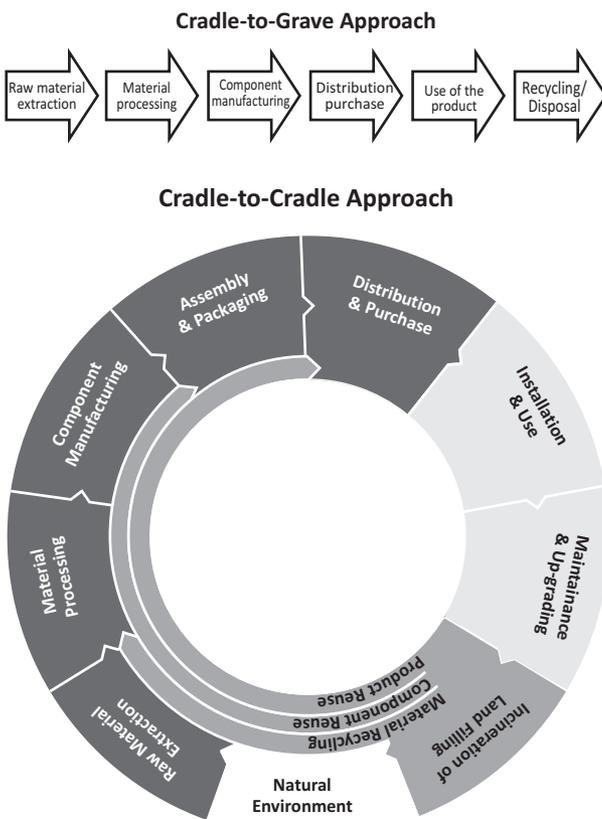
In order to bridge this gap in the lifecycle, it is imperative that we decouple economic development from our natural resources, thus taking a 'circular' approach or a 'cradle-to-cradle' approach of designing products (Figure 1). This would entail increasing the longevity of the product and minimising waste through the process of sharing, renting, repair and reuse by following the 5Rs of 'reduce, reuse, refurbish, repair and recycle', thus forming a 'closed-loop' system. Resource efficient business models would thus provide [GG (2017)];

- i. Services: This would be based upon delivering holistic performance outputs rather than simply selling products.
- ii. Hire and lease: To ensure longer-term product durability by leasing out products for return after use.
- iii. Incentivised returns and re-use: Encourage customers to return used items for refurbishment and re-use.

- iv. Long life: Design products to be more durable and sustainable.

Some examples of the cradle-to-cradle approach are discussed in the 'Case studies' section of this article.

Figure 1: Cradle-to-Grave and Cradle-to-Cradle Business Approach



Source: White *et al.*, Okala: Learning Ecological Design, Phoenix; Module on Resource Efficiency, DMU, Leicester, UK.

Sustainable Business: How Profitable is It?

With the design stage of a product accounting for more than 80 per cent of the lifecycle’s environmental impacts, it is crucial that enough care and time be given to this stage by designing for sustainability. But at the same time, for any business

to be a success, profitability plays a very important role. So can a sustainable business be profitable too? Let's find out. According to a survey carried out by the Massachusetts Institute of Technology (MIT), US, it was found that 75 per cent of companies who changed their business model to a sustainable one either broke even or showed a profit from their sustainability activities, and 46 per cent said their sustainability activities added to profits. Marks and Spencer (M&S), the global clothes brand's sustainability strategy, Plan A, is an example. Introduced in 2007, Plan A, which aimed to achieve 100 goals related to waste, supply chain, climate change, and health, had led to about US\$296 million in net economic benefits by 2015 [MIT (2013)].

A study by CDP (formerly the Carbon Disclosure Project), North America, showed that the Standard and Poor's (S&P) 500 companies who built sustainability into their core strategies outperformed those who did not. Corporations who actively managed and planned to tackle climate change risks, secured an 18 per cent higher return on investment (ROI) than companies who did not and 67 per cent higher than companies who refused to disclose their emissions [CDP (2014)]. This says a lot. According to Meg Whitman, Former Chairman and CEO, Hewlett Packard, “by integrating sustainability across the entire value chain, companies can capture return on capital today and build leadership and business value for their future.”

A 2015 Sustainability Imperative Report by Nielsen, the global, independent measurement and data company for fast-moving consumer goods, found that 66 per cent of consumers were willing to pay more for sustainable brands that are manufacturing products in a socially responsible manner — an increase from 55 per cent in 2014, and 50 per cent in 2013 [Nielsen (2015)].

Resource Efficient Design: Key Business Benefits

Given this background, the range of possible benefits that could accrue to companies that introduced resource efficiency methods and techniques into their business practices are summarised in Table 1.

Table 1: Business Benefits of Resource Efficiency

Live better	Resource efficiency improves quality of life, e.g. efficient lighting systems help people save electricity, more resource productive factories produce better goods, and energy-efficient buildings create a cleaner environment for all.
Pollute and deplete less	Efficiency reduces waste and pollution, thus contributing significantly to reducing emissions and also saving valuable natural resources.
Make money	Yes! Resource efficiency helps save money: it converts valuable resources into useful products and services (rather than waste), and reduces costs related to the highly expensive process of waste disposal.
Harness markets and build competition through individual choice	While market forces combined with innovative policy mechanisms can help drive resource efficiency, much of it can be driven by individual choice and business competition.

Multiply use of scarce capital	The money saved by preventing waste can be re-invested for other efficiency purposes. E.g. money saved in developing energy efficient lighting can be reinvested into providing energy services at a tenth of the cost of building another power station. By recovering that investment at least three times faster (due to efficiency practices) and reinvesting it, the services provided by the newly invested capital are expected to rise more than 30-fold.
Increase employment and improve productivity	By reducing the amount of unproductive resource allocation, money can be saved and reinvested into more skilled and productive labour.

Source: Weizsacker, E.U., *et al*, *Factor Four: Doubling Wealth, Halving Resource Use*, Earthscan, UK; *Module on Resource Efficiency*, DMU, Leicester, UK.

Drivers and Barriers to Resource Efficiency

A European Commission report analysed and identified the key drivers and barriers that impacted resource efficiency in EU businesses. The main drivers identified were rising prices of commodities and key raw materials, supply-side partnerships and collaborative initiatives, competitiveness and potential bottom-line cost savings. Key barriers included lack of access to funding, market demand, knowledge and capability, and ability to implement cost-effective technological solutions which avoid lock-in [AMEC (2013)]. Figure 2 provides a more detailed picture.

Key Policies that Could Drive Resource Efficient Design in India

Compared to the European Union (EU), the policy framework for resource efficiency in India is still in a nascent stage. Some of the key policies that are expected to drive this upcoming sector are described here.

At the Global Level

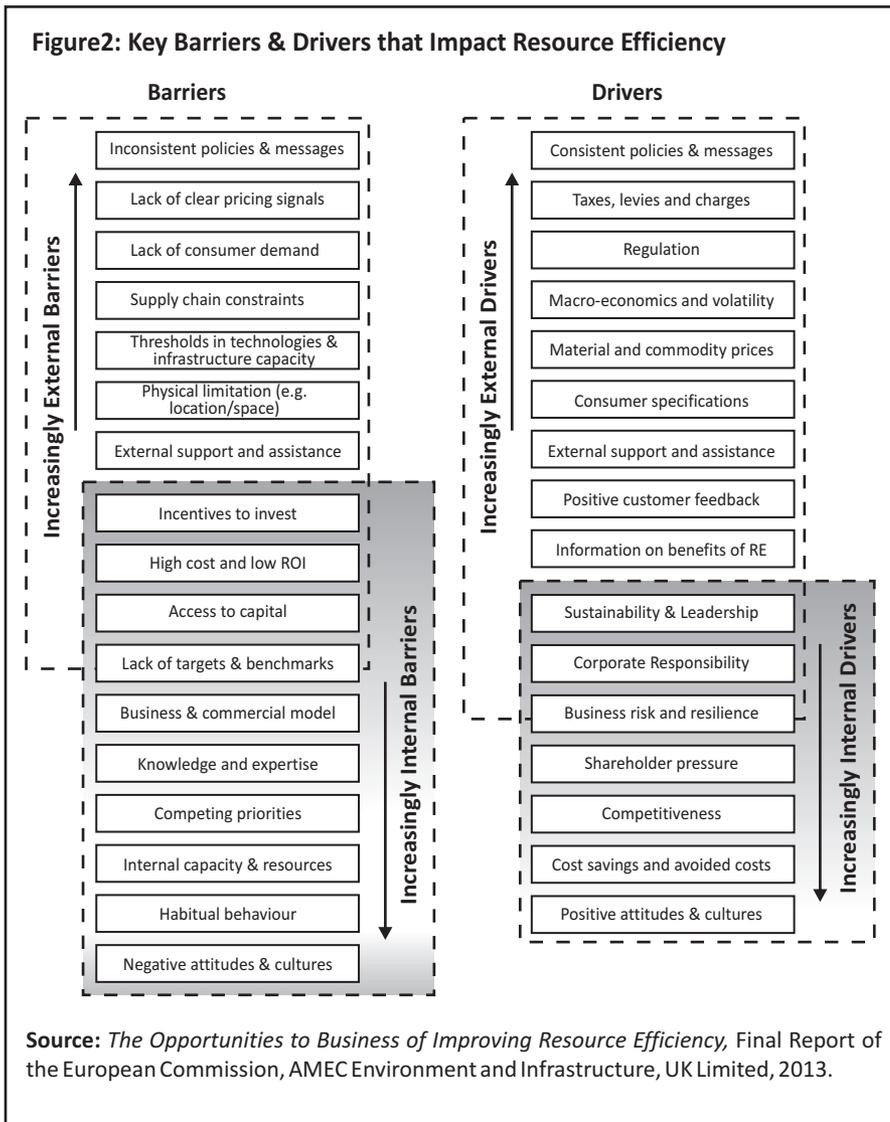
- Sustainable Development Goals

In September 2015, the UN General Assembly issued the Sustainable Development Goals (SDGs) which build on the Millennium Development Goals of 2000. There are in all 17 SDGs and 169 targets. Goal 7 (affordable and clean energy), Goal

11 (sustainable cities and communities), and specifically, Goal 12 (responsible production and consumption) and Goal 13 (climate action), relate to the efficient and judicious use of our natural resources.

- Intended Nationally Determined Contribution

India's Intended Nationally Determined Contributions (INDCs) are its voluntary pledge to the Paris Agreement of 2015 to maintain global CO₂ levels below 2°C (above pre-industrial levels). The INDCs promote resource efficiency, mainly through their commitment of reducing emissions intensity to 33-35 per cent (above 2005 levels) by 2030, achieving about 40 per cent cumulative electric power from non-fossil-fuel-based energy resources by 2030, and creating an additional



carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent through additional forest and tree cover by 2030.

At the National Level

- National Design Policy

The Department of Industrial Policy and Promotion (DIPP), Government of India, established the National Design Policy in 2007, with the aim of promoting a “design enabled Indian industry” which could impact both the national economy and the quality of life in a positive manner. The policy aims to acquire global positioning and branding of Indian designs and make “Designed in India” a by-word for quality and utility in conjunction with “Made in India”. It also aims to recognise and award industry achievers in creating a brand image for Indian designs through the award of 'India Design Mark' on designs which satisfy key design criteria like originality, innovation, aesthetic appeal, user-centricity, ergonomic features, safety and eco-friendliness [DIPP (2017), YES-TERI (2018)].

- Bureau of Indian Standards Act

The Government of India introduced the Bureau of Indian Standards (BIS) Act, 2016, that superseded the earlier Bureau of Indian Standards Act, 1986. The BIS certification covers a wide range of products such as cosmetics, textiles, batteries, electrical and electronics goods, packing/packaging materials, plastics, food preservatives and additives, etc. Under its Eco Mark scheme, BIS provides certification and labelling for household and other consumer products that meet certain environmental criteria along with quality requirements prescribed in relevant Indian Standards for the product [BIS(2016), YES-TERI (2018)].

- Strategy on Resource Efficiency

Issued in November 2017, the strategy paper (which stresses on resource efficiency through the entire lifecycle of the product, including the design phase) is developed with the recommendations from the Indian Resource Panel (InRP) — an advisory body under the Ministry of Environment, Forest and Climate Change (MoEFCC) — through the support of Indo-German bilateral cooperation, to assess resource-related issues facing India and advise the government on a comprehensive strategy for resource efficiency. It outlines the rationale and key recommendations for a resource efficiency strategy that can be adopted by the government. The focus of the strategy is on abiotic resources that are not used for energy production (ores, industrial minerals, construction minerals) to be supplemented by the material use of biotic resources in the future [AG(2017)].

Case Studies

The BlueGEN Concept

Social enterprise iPower is focused on reducing energy bills and carbon emissions through BlueGEN installations (small scale fuel cells) in housing and other properties, in an effort to make clean energy affordable to all. iPower adopted a funded model for Micro-CHP provision whereby they lease the Micro-CHP kit to clients and the supplier bears the maintenance costs. The pilot became fully operational in January 2016, and is exceeding its projected performance, generating 3156 kWh in its first 85 days. It is estimated that the net savings for the pilot will amount to 19.96 per cent in Year 1, rising to 36.4 per cent by Year 10. CO₂ mitigation is estimated at 3–4 tonnes per year [AG (2017)].

The Dutch Ministry's 5R Concept

The Dutch Ministry of Defence (MoD) has approximately 42,000 military personnel in active service. Soldiers receive clothing and personal equipment on loan. At the end of active service, some of the clothing and equipment is returned. Around 35 per cent of the sorted clothing gets a second life in the MoD. The remainings are used in new products which have no link whatsoever to the defence clothing. Approximately 33 per cent of items are unsuitable for re-use and get fiberised to become new products such as wall insulation and car door panels, as well as blankets for refugees, bags and wall decorations. The MoD has mandated that new products purchased must have a recycled content, thus creating a revenue model. It is expected this will lead to additional revenue of approximately €750,000. The re-use of materials is expected to deliver savings of over 14,500 tonnes of CO₂, 132,000 Gigajoule (GJ) of energy and almost 2.9 million m³ of water. The project also contributes to the government pledge of creating 125,000 additional jobs for people with occupational disabilities [AG (2017)].

Levi's Innovative Design Concept

Levi's, the global jeans brand, has till date, saved more than 2 billion litres of water and recycled more than 200 million litres of water, using some unique waterless techniques. As of today, more than 40 per cent of all Levi's products are made with such techniques. By 2020, Levi's aims to produce 80 per cent of all its products using water-less innovations. With the launch of Levi's 'Authorized Vintage' collection and partnership with RE/DONE, a brand that recycles vintage Levi's jeans, 65 per cent of the water typically used during the lifecycle of a pair of jeans is saved, since no new water is used to

grow cotton. Levi's Authorized Vintage denim is renewed in different facilities in the US before being sold again, which significantly reduces the collection's footprint [LEVI (2018)].

Hyderabad's Unique Waste Recycling and Disposal Concept

Waste Ventures India (WVI), Hyderabad, has adopted an innovative and financially sound sustainable model that offers the city's first digital waste collection platform for households and small medium enterprises. WVI produces 'Sanjeevini Premium Organic Compost', which is 100 per cent organic and contains nutrients that outperform nutrient values for typical organic and vermicomposts in the market. The enterprise ensures pre-scheduled, hassle-free, door-to-door pick-ups, digital weighing, transparent pricing, and on-the-spot payment to the waste providers [WVI (2017), YES-TERI (2018)].

Recommendations and Suggestions

Indian businesses need to become more proactive in adopting business models that are resource efficient so as to ensure a more resilient and sustainable business economy in the future. In order to make this a reality, it is critical to introduce and implement appropriate policy, regulatory and financial measures, and increase awareness regarding the benefits of waste reduction and resource efficiency amongst policy makers, manufacturers and consumers. And finally, adopting the 'cradle-to-cradle' methodology that entails decoupling resource use from economic growth, will aid the transition from resource-intensive growth to a resource efficient growth paving the way for sustainable future. Some key suggestions (largely articulated by the Government of India's 'Strategy

on Resource Efficiency') are provided below.

- i. The EU EcoDesign Directive of 2009, is a framework directive that sets compulsory eco-design requirements for various product groups and helps address market failures related to incomplete or total lack of awareness, need for cost savings, etc., thus making way for the implementation of the 'cradle-to-cradle' approach. Moving in tandem with this directive, India needs to promote national voluntary standards like BIS 2016, to develop and strengthen design initiatives for improving resource efficiency in the country. While BIS has been working on adapting internationally accepted standards, a more coordinated approach with Indian Resource Panel (InRP) is recommended.
- ii. There is a need to develop cross-cutting policy instruments such as Green Public Procurement (GPP) that enables preferential procurement of eco-labelled products, standards, eco-labelling and certification for promoting resource efficiency in critical sectors of the economy. While an eco-labelling scheme from Ministry of Environment, Forest & Climate Change (MoEFCC) is in place, its impact has been limited; there is a need to develop certification and eco-labelling with emphasis on resource efficiency and secondary raw materials, addressing product reuse, durability as well as secondary resource usage. Incentives such as tax benefits for eco-labelled products would lead to price competitiveness and encourage consumers to purchase such products.
- iii. Consumers play a vital role in paving the pathway towards more efficient and sustainable resource use. But currently their understanding of eco-friendly products, (and resource efficiency) especially from a life-cycle perspective, is low. Raising consumer awareness is thus essential for a resource efficient future.
- iv. Provisions like Viability Gap Funding (VGF) can help businesses meet the initial high cost and become competitive over time by scaling-up and upgrading technology. Other innovative financing mechanisms could include private equity funding like green bonds, low interest loans to SMEs, improving access to loans by pooling loan demands and getting them ready for approval.
- v. There is an urgent need "to decouple escalating resource use and environmental degradation from economic activity and human wellbeing". Designing a 'product service system' that integrates products, services, supporting networks and infrastructure, and has lower environmental impacts, is the need of the hour.

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Managing Wastes and Sustainability in the Era of Growing Urbanization in India

Rachna Arora*

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is an enterprise owned by the German Government. GIZ implements sustainable development through international cooperation, on behalf of Germany and other partners. With a global footprint in over 120 countries, GIZ leverages its regional and technical expertise for local innovation. In India, GIZ works majorly in Indo-German Bilateral Projects in areas of energy, environment, climate change and biodiversity, sustainable urban and industrial development and sustainable economic development. The Government of India has launched numerous important initiatives to address the country's economic, environmental and social challenges, and GIZ is contributing to some of the most significant ones. For example, it supports key initiatives such as Smart Cities, Clean India Mission and Skill India. GIZ, in close cooperation with Indian partners, devises tailor-made, jointly-developed solutions to meet local needs and achieve sustainable and inclusive development. Dr. Arora from GIZ India shares her insights with Team IMI Konnect on the different issues around environment and sustainability with a focus on resource efficiency and circular economy.

IMI Konnect: *GIZ is well known as a provider of international cooperation services for sustainable development across the world. Can you sensitize us on the GIZ Projects in India and your role in it?*

RA: GIZ is an implementing agency of the German Government working primarily on bilateral projects. The Federal Ministry for Economic Cooperation and Development (BMZ), the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU) as well as the Federal Ministry for Economic Affairs and Energy (BMWi) are the main commissioning parties of GIZ in India. Other clients include Indian public sector clients, the European Union and foundations. In India, our thematic areas are energy, environment, urban development and economic development, which focuses on private sector development and social protection. In particular, I focus mainly on issues related to industrial environment and sustainable urban development. Worldwide GIZ is

working across 120 countries focusing on sustainable development issues depending on country specific arrangements. In India, we work closely with the Ministry of Environment, Forest and Climate Change, Government of India (MoEFCC, GoI), on several issues relating to environment, sustainable industrial areas, resource efficiency, Waste to Energy and climate change, mitigation and adaptation and natural resources. We also work with several other Ministries, Urban Local Bodies, state governments and Niti Aayog, Government of India. For last 6-7 years, waste management has become an important issue. Now waste is recognised as a by-product and it is no longer simply 'a waste'. The terminology has a completely new role to play in the fields of circular economy and resource efficiency.

IMI Konnect: *How is GIZ related to the climate change programme in India?*

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RA: GIZ is involved in multi-pronged planning and strategy designing for the central as well as the state governments and had supported in developing a number of State Action Plans related to climate change for respective states. Considering waste management, GIZ has also supported India (MoEFCC, GoI) in developing the framework for Nationally Appropriate Mitigation Actions (NAMA) on waste management which also addresses the aspects around secondary resource utilization. Please check GIZ India website (www.giz.de/india) for details about the programme.

IMI Konnect: *Considering waste management goals, how are the GIZ projects playing a role in the country?*

RA: In the last few years, we have witnessed the rise of circular economy practices around the world including Germany. Circular economy stands for a regenerative system in which businesses adopt models with close loop recycling and raw materials are extracted from the waste stream by re-use, recycling and recovery. Circular economy also supports transition from linear models to circular approaches wherein concepts around design, remanufacturing and sharing models calls for innovation around supply chain. The idea is common to India also, but we lack policies and programmes which support the entire lifecycle of the process. It is very difficult for Indian businesses and international businesses operating in India to implement this type of principles and practices because the entire eco-system is not aligned on this aspect.

Currently, GIZ is working on a European Union funded Resource Efficiency Initiative for India, in

cooperation with Niti Aayog and the MoEFCC, GoI, focusing on various aspects like developing policy guidelines to provide a level playing field for businesses to develop innovative models. GIZ also works with the private sector and think-tanks which come up with relevant reports and analysis through material flows in priority sectors for the Indian economy covering issues around methodological frameworks, policy analysis, identifying opportunities, barriers, promoting successful business cases and best practices worldwide. Managing wastes such as mining waste, construction and demolition (C&D) waste, electronic waste etc. is a big challenge - be it the government, consumer or the industry. If we look at post-consumer wastes like end of life electronics, end of life vehicles- these are all complex wastes and municipalities are not equipped enough to handle these kinds of wastes which is a mix of ferrous, non-ferrous and hazardous metals. For instance, e-wastes contain precious metals such as gold, silver, palladium, copper etc. which can be recycled, along with toxic elements like lead, cadmium, brominated flame retardants (BFRs), mercury etc. Hence it is very important to recycle e-waste in the right manner to avoid harmful effect on environment and human health. GIZ through its national and international knowledge and experiences supports the GoI in developing policies, monitoring and implementation of guidelines, technology transfer, business partnerships and capacity development among the key actors at the national, state and municipality level for effective management approaches.

IMI Konnect: *What are the specific actions taken by*

¹Swachh Bharat Abhiyan (SBA) or Swachh Bharat Mission (SBM) is a campaign in India that aims to clean up the streets, roads and infrastructure of India's cities, smaller towns, and rural areas.

GIZ on waste management practices in India? What are your greatest concerns on the same?

RA: When we talk about EU funded, Resource Efficiency Initiative for India, we are not concentrating on solid waste management only as GIZ is working on several initiatives for waste management (refer to <https://www.urban-industrial.in/>). We are working on issues like resource security, scarcity and end of life management issues in sectors like mobility, photovoltaics, e-waste, plastic waste, buildings and construction since they are currently consuming large quantities of abiotic materials. The materials used in these sectors are either imported or domestically mined to meet the metal demand for our growing infrastructural needs. This is where role of secondary resources like e-waste, plastic waste, mining wastes, red mud, C&D wastes etc. is crucial so that we can meet our growing demand of resources through better management of these waste streams. In India, an entire informal economy of traditional waste-pickers (*kabadiwalas*) collect wastes in the right manner. They can be strengthened to enhance better segregation and utilization of waste, generated at source. For instance, models like *Swach* and *Protoprint* in Pune, need to be scaled up so that the informal workers are included in the waste value chains.

Very recently, Maharashtra banned plastics completely putting lot of pressure on the traditional industries such as the packaging industry especially the food and beverage and other multi-layer packaging industry. More and more cities are now banning single use plastics but we also should have alternative arrangements and for that we have to look forward to a circular economy. We have to understand that banning is not a solution and we need to find out alternative measures with no or

lesser use of virgin materials. However, GIZ's primary area of concern now is manage waste materials specifically post-consumer wastes like electronics wastes, end of life vehicles, or the industrial wastes where the industry and government can together come up with innovative policy frameworks and business models.

IMI Konnect: *Would you like to highlight any specific environmental project undertaken by the players in the Indian industry that would contribute to the advantage of the circular economy practices?*

RA: Currently large proportions of the C&D wastes are used as filler material for low lands or dumped in the city outskirts. The recycled C&D wastes can be used to make products like paver blocks, kerb stones etc. which are used in construction industry. So, this type of green products are already available in our market and anyone constructing a commercial building or residential building can use more bricks/pavers etc. using C&D wastes so that the usage of red bricks made from virgin products is reduced. Through use of a by-product, the environmental impact of using a virgin product is also reduced which is the basic concept of a circular economy. Pilot projects on collection, segregation and processing of C&D wastes into useful building materials are already under progress in Delhi and Ahmedabad. Nonetheless, keeping in mind the newly notified "C&D Waste Management Rule 2016", expansion of the project all over the country is the need of the hour.

IMI Konnect: *While talking about rules and guidelines, what are the prevalent rules on e-waste disposal in India?*

RA: E-waste (Management and Handling) Rules 2011 was notified to support safe disposal and

environmentally safe recycling of e-wastes through the concept of Extended Producer Responsibility (EPR) wherein producers of Electrical and Electronic Equipment (EEE) are responsible both financially and physically for its collection, recycling and recovery. In 2016, the MoEFCC, GoI, notified another version of the e-waste rules which specified mandatory targets for the producers and manufactures, so that the monitoring of e-waste and EPR can be verified through an effective compliance and enforcement. The rules talk about shifting the responsibility of recycling to the original producers, who should actually take care of the end-of-life product. The mandate also divides the responsibility of safe disposal on every stakeholder involved in e-waste management including the State Pollution Control Board, the producers, the collection centres, the dismantlers, the recyclers and the consumers. Unfortunately, till now the level of awareness about the rules and its related implications is really limited. While this genre of wastes is generated in every household and in every office but we as consumers- both bulk consumers and individual consumers- are uninformed about its proper disposal. Thus, the major challenge is to understand how one should approach these kinds of issues which are so closely related to consumers.

IMI Konnect: *Talking about awareness, how would you evaluate the current level of awareness on waste management among the players in the Indian industry?*

RA: As mentioned above under the e-waste Rules 2016 manufacturers, producers, importers of EEE are not only responsible for safe recycling but also for creating awareness for their product take back policies. In practice, the websites of these companies might be providing the required information but on ground collection and channelization mechanism is not well established and lacks transparency. GIZ has

been working on behalf of the EU and German government funds for creating an awareness among the industry, consumers as well as the government for environmentally safe disposal of e-waste and better implementation of the Rules, 2016. However, the producers need to take more responsibility when it comes to the effective collection mechanisms for reaching to consumers through schools, residents associations or civil society for safe disposal of e-wastes. There is also lack of awareness when it comes to right handling of wastes at the industry level. A large section of business units, public and private sector entities does not have proper disposal policies for obsolete IT products or e-wastes and dispose them to the scrap dealers. Since last two years, under the 'Digital India' campaign, the Government is organising mass awareness campaigns on e-waste disposal in Tier I and Tier II cities in a phased manner.

IMI Konnect: *So, in the last 10-15 years- did you see any noticeable change in the e-waste management scenario in India?*

RA: Yes, it has changed a lot. The first ever report on e-waste, released by Toxics Link, was published in India in the year 2004 which drew a lot of attention for the Government of India to enact. The report discussed how toxic products were imported and dumped in ports in the name of charity and donation. The policy frameworks have also evolved in the country from 2009 to 2011 to 2016 but the on-ground implementation still needs to find a better approach since the 80-90 per cent waste does get channelized to the informal sector workers. Since 2006 we have been supporting the Ministry of Environment, Forest and Climate Change (MoEFCC) and Central Pollution Control Board for developing policies and guidelines for effective management of e-wastes which was first notified in

2011. We have also worked closely with the State Pollution Control Boards, private sector, urban local bodies etc. for enhancing their awareness on e-waste Rules and its implementation. For better collection mechanisms, we had supported different cities to develop collection models led by informal sector workers, civil society, social enterprises etc. so that consumer led collection models for door to door collection of e-waste can include the informal sector workers. Some of the formalized informal sector workers have also set up private limited companies focusing on e-waste collection and its dismantling. Now Ministry of Electronics, Information and Technology has developed technologies for the extraction of the precious metals from the printed circuit models. They are looking at partnerships with the informal sector units (for example in Moradabad cluster) to make this technology available to them for better recycling operations, which does not cause environmental and health risks.

IMI Konnect: *According to you which particular sector within waste management has the highest potential to become most successful?*

RA: Instead of sector, I would like to focus on the value chain itself. As I have already mentioned, the government has to be more inclusive in terms of covering the informal sector under its ongoing waste management programmes for skill development, better segregation and value added services that they provide through their networks and outreach. Government has to come up with innovative models implemented in cities like Pune (*SWaCH*) or Delhi (*Chintan*), Chennai (*Banyan Nation*) or Bangalore (*SAAHAS*), where the local governments have included the informal sector as a part of waste management chain. In cities of Pune or Bangalore, municipalities provide separate space for storage

and segregation of e-wastes where collectors authorised by State Pollution Control Board can collect and store e-wastes. India can also consider country examples like Mexico, Peru or even some cities from Africa where they are trying to integrate the informal sector into efficient waste management practices. Although government has come up with *Swachh Bharat Abhiyaan* in a big way, it is majorly concerned with sanitation. However the Government needs to concentrate on waste management and circular economy principles where the inclusive approaches can yield better results than only waste disposal mechanisms like waste to energy or landfilling etc. We are still struggling to find out a sustainable model to handle complex wastes like electronic waste, construction waste etc. It is worth mentioning here that developed countries like US, Germany, Austria, Belgium etc. appreciate the Indian manual models of e-waste dismantling than technology-oriented shredding since we can utilize the human resources through skill development, segregate the components better and recycle and recover with higher efficiencies, where we engage people instead of machines who have the expertise on that. The informal sector plays a major role in reducing the climate change impact by segregating the waste material and recovering them efficiently in a much better way. It is also felt that proper interaction and exchange would be mutually gainful for both the sectors of waste management, the formal and the informal so that waste downcycling can be reduced. I find it very difficult to visualize India in next five to ten years handling all the complex wastes in a right manner if this integration between the formal and informal sector is not done in a holistic manner.

IMI Konnect: *Do you think electronic waste management has more potential to be formalized in*

terms of waste management and may have more success rate?

RA: The electronic products sector is growing with rising urbanisation and consumerism leading to a concomitant rise in e-waste as well. The decision makers have to think about inclusive models incorporating the informal sector; as size-wise they are not viable to compete with the formal organisations. It is very difficult to operate waste-to-energy (WtE) plants in this country since our waste fractions are very different from developed countries and also with the presence of the informal sector workers makes it less viable for the formal economy. Thus instead of creating similar infrastructural issues, as WtE, we will have to look at the entire EEE life cycle stage in India to consider the options for resource efficiency and circular economy for its better production, design, consumption and end of life management. The 'Make in India', 'Digital India' and 'Swachh Bharat' programmes need to mainstream an approach for e-waste management wherein it is considered as a resource and urban mine rather than a complex waste. Also EPR as a principle provides opportunities for brands and manufacturers to think about sustainable materials, remanufacturing, ease of dismantling and recycling and better resource recovery. In the long run, if we want to achieve a successful electronic waste management system, we still need to create awareness amongst the consumers.

IMI Konnect: *How has been your experience in working with the government? What has been its major advantages?*

RA: The government has a very large-scale outreach and access to people. If business houses develop something green or sustainable, only the

government has the mechanism of transforming the entire market with its sheer power of determining availability of a certain product. Green products cannot generally enter the market in regular manner, may be due to its price or maybe it does not fit into government's usual procurement scheme. At the end of the day, a business house runs with a profit motive but the government is not constrained to consider that aspect. We at GIZ have a mix of national and international experiences in these kind of bilateral projects between India and Germany, which mainly evolve around agreed focus areas as mentioned earlier. The areas of cooperation i.e. energy and environment reflect Indian Government's commitment towards addressing the issue of climate change and achieving growth in an environmentally sustainable manner.

The views expressed are personal opinion and not of GIZ India.

Role of Green HRM in Supporting Environmental Sustainability

Roma Puri* and Soni Agrawal**

Abstract

In the present paper, green human resource management is defined and an attempt is made to explain how green HR supports environmental sustainability initiatives. The focus here is to understand why it is important for an organization to encourage HR practices that can support these initiatives. Present status of green HR is also discussed in the subsequent section. The review of the literature confirms that there is a positive association between Green HR and environmental sustainability.

Introduction

Environmental concerns and sustainable development have emerged recently as serious issues and several governmental schemes, policies and initiatives are being taken to address them. Non-governmental organizations are also highlighting the devastating impact of industry pollution and greenhouse gases (GHGs) emissions. Even some business corporations have also shown an increasing awareness and commitment towards sustainable environment practices and behaviour.

In general, it is perceived that business corporations are least concerned towards environmental damage. Rather these organizations are only bothered about higher profitability and are cause of many economic, environmental and social problems. Moreover, growing number of regulations indicate mistrust of governmental agencies towards these business corporations (Porter and Kramer, 2011). But, at the same time, there are some organizations, which are actively involved towards environmental sustainability actions and effectively execute them with their strategic business goals and seeing them

as a source of competitive advantage (Laszlo and Zhexembayeva, 2011; Porter and Kramer, 2011).

“Green management” refers to the integration of enterprise behaviour and environmental consciousness (Backer, 2002). For prevention of pollution, generated in the process of production, some organizations take concrete actions (Taylor *et al.*, 2012). Some of the organizations show willingness for inclusion of environmental considerations in every entrepreneurial process, including product development activities and strategic planning (Barbieri, 2004). It is found in some studies that organizations that are concerned for environment take active actions towards environmental sustainability and perceive positive outcomes such as higher profitability, better brand image, improved financial performance and higher stock price (Flammer, 2012).

To have an effective environment management (EM), support of human resource (HR) is very important, as the role of HR is crucial in generating sustainable competitive advantage, especially with rapidly changing economic environment. Renwick

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et al. (2008), advocated the integration of corporate environmental management into Human Resource Management (HRM) and popularized it as Green Human Resource Management (GHRM). In their study later in 2013, Renwick *et al.* introduced various HRM practices. They observed a positive relationship between green HRM and firm environmental performance.

GHRM concept is relatively new and emerging. Research in this area is diverse and piecemeal. In general, the role of HR towards environmental sustainability is not very clear. It is alleged that there is hardly any linkage between the environmental sustainability (ES) actions taken by organizations and HR.

Literature Review

Drive for Sustainability

Sustainable development, as defined by Brundtland Commission(1987) report, ‘involves meeting our current needs without compromising the ability of future generations to meet their needs’. At business level, this definition can be applied as “3P’s” (Profit, Planet, People), “Triple E’s” (Economics, Environment, Equity), “Triple Bottom Line” (Economic, Environmental, Social) to indicate a broader purpose for the sustainable firm—to optimize economic, environmental and social inputs, throughputs and outputs over the long term (Savitz and Weber, 2006; Swallow, 2009). There is an emerging focus and awareness worldwide towards ES. As per Laszlo and Zhexembayeva (2011), there are three distinct but interrelated trends. First is resources, in general, are declining to organizations and people. There is a shortage of supply against the demand for clean water, energy and nutritious food. Biodiversity is declining

rapidly, resulting in variety of vexing problems around the globe. These problems are aggravated by population growth, poverty and increasing income disparity. These continuous debates are educating the consumers, employees, investors, regulators, communities, and other stakeholders, who have now increasing expectations from businesses and society at large to produce healthy.

Commencement of GHRM

In an organization's context in general, critical goal of HR is seen in terms of development of 'competencies, collaborative strategies along with organisational capabilities, required for supporting organisation's sustainability journey'(Wirtenberg *et al.*, 2007). Green HRM refers to utilizing every employee's interface for promoting sustainable practices and increasing employee awareness and commitment. Hence, the boundaries of strategic HRM should be stretched to include sustainability or green issues (Osland and Osland, 2007).

HR's contribution to the environmental priorities can be seen in the form of influencing employees' attitude and behaviour towards the greening of organizations. It involves taking up pro-environment HR initiatives, which aim at reducing employee carbon footprints in the form of electronic filing, car-sharing, job-sharing, teleconferencing and virtual interviews, recycling, telecommuting, online training and energy efficient office spaces (Gill, 2012). As per Renwick *et al.* (2008), some of the examples of green HR practices are increased usage of public transport, shared company vehicle, energy efficient office spaces, flexi-work, e-filing, disposal of staff ID card and job sharing¹. Some more are telecommuting, video conferencing and interviews, online training, educating employees

¹Sharing of full - time job between two employees

about carbon footprint via less printing of paper, etc. For example, the study of Aragao (2017) on Brazilian public universities mentioned that alignment was observed among the levels of sustainable procurement and environmental training adoption. Teixeira *et al.* (2012) on the study of Brazilian hotels found that green management practices had positive impacts and a positive relationship with environmental training provided by companies.

Some of the important HR practices followed are hiring employees with specific environmental competencies and general sensitivity towards the environment, green training for enhancing sustainability awareness and involvement (i.e. developing environmental competencies alongwith skills and engaging employees in green behaviours) and assessing employees' performance by considering performance and stimulating environmentally conscious behaviours (De Prins *et al.*, 2014).

HR Systems supporting green organizations

A study by Jabbour *et al.* (2010) established that organizations that are having an environmental certification were more inclined to hire employees who have environmental knowledge and motivation. Studies had shown that environmental strategy of ISO 14001 organizations in general are closely linked with organization's HRM practices (Jabbour *et al.*, 2012; Harvey *et al.*, 2013). Specific Green HRM practices are found to be associated with environmental performance of organizations. Some of the HR practices that constitute High Performance Work Systems (HPWS) were found to be a part of environment management (Wee and Quazi, 2005). Environmental targets generally constitute non-financial determinant (Berrone and

Gomez-Mejia, 2009), and employees are recognized for their ideas for improving environment management (Lulfs and Hahn, 2013). It is seen that multinational companies are encouraging GHRM practices for promoting their employer branding and for improving their brand image.

Status of GHRM

Green HRM has been classified into reactive, preventive and proactive, based on the level at which an organization incorporates environmental issues into management practice (Haddock- Millar *et al.*, 2016). It is important to understand the role of the HR manager in this regard, as the HR manager's decision and behaviour affects EM practices and policies (Sharma *et al.*, 1999). A managers' orientation towards EM/ES is affected by his/her beliefs, attitudes, goals, and values (Tinsley and Pillai, 2006) and ultimately determines the seriousness towards environmental initiatives. HR manager's green signatures can be oriented towards promotion or prevention. Behaviour that promotes EM/ES applies HR practices to promote EM and preventive behaviour prevents negative environmental outcomes. HR managers are responsible for making integrative decisions and hence their signatures are important to comprehend the success of Green HRM in the organization. Regrettably, there is dearth of insights in the existing literature that captures the experience of employee in the field of GHRM. The linkage between EM/ES and GHRM and also the role of employees towards green management, green workplace behaviour has not yet received much scholarly attention.

Some of the significant research studies on Green HRM practices in the last few years are presented in Table 1.

**Table 1: Green HRM Practices:
Findings based on Select Studies**

Recruitment
<ul style="list-style-type: none"> • A study in France showed that professionals were concerned about the environmental stance of the companies they work for (Grolleau <i>et al.</i>, 2012) • U.S. based studies revealed that job seekers were most attracted to, likely to seek and accept jobs from companies that have strong social and environmentally responsible values and have reported that students get attracted to work for organizations that have a pro-environmental image (Behrend <i>et al.</i>, 2009; Backhaus, 2002) • It is believed that recruitment practices can support effective environment management by ensuring that new recruits understand an organization's environmental culture and share its environmental values (Wehrmeyer, 1996) • British firms are beginning to recognize that gaining a reputation as a Green employer is an effective way to attract new talent (Phillips, 2007)
Training
<ul style="list-style-type: none"> • Green training or awareness campaigns, induction and training to enhance environmental competencies, involvement in green initiatives in the form of bi-directional communication flows are also important in enhancing environmental consciousness (Jabbour, 2013, Daily <i>et al.</i>, 2012) • Studies have shown that imparting environmental knowledge and skills positively

influence environmental performance (Longoni *et al.*, 2014; Harvey *et al.*, 2013).

- Eco-literacy and environmental expertise of employees help them initiate environmental conservation practices (Roy and Therin, 2008)

Employee Involvement and Participation

- Organizations can promote eco - entrepreneurs by showcasing their works in high profile organizational events
- Organizations can encourage employee involvement and participation (EI&P) in green suggestion schemes & problem solving circles
- Introduction of green workplace agreements, training of union representatives in EM, consultation and joint working with union environmental representatives can be means of involving trade unions in the organizations' environmental causes
- Organizations may introduce practices such as incorporating green elements into the health and safety process, implementing wellness programmes to foster employees' proper nutrition, green pay/reward system, tailoring packages to reward green skills acquisition, use of monetary – based EM rewards (bonuses, cash, premiums). There can be use of non-monetary based EM rewards (sabbaticals, leave, gifts), use of recognition- based EM rewards (awards, dinners, publicity, external roles, daily praise) to reinforce positive green behaviours among employees
- Organizations may encourage employees to use green forms of transport, promote use of web or teleconferencing to reduce travel,

<p>promote the reduction of paper use, set -up low carbon Chiefs (including CEO and Board) to increase action in EM. There can also be introduction of green whistle-blowing help-lines, discipline and/or dismissal for EM breaches</p> <ul style="list-style-type: none"> · Employees may be encouraged to volunteer to support environmental charities and projects e.g. a few paid hours per month
<p>Grievance and Discipline</p>
<ul style="list-style-type: none"> · Organizations can encourage internal “whistle-blowing” regarding environmental breaches and permit employees to raise grievances in high risk operations (for their safety record) · Another useful practice can be attaching disciplinary procedures to environmental rules and duties wherever noncompliance occurs in organizations
<p>Exit</p>
<ul style="list-style-type: none"> · Organizations can go for staff de-briefings in EM in cases of dismissal to explain flouting of environmental norms may lead to dismissal of employees · Organizations can check whether green issues are reasons for resignations i.e. whether employees are choosing a Greener employer · Exit interviews may be used to gauge perceptions of firm, providing safety to employees who report flouting of environmental norms and regulations and providing legal protection for green whistle – blowers

Discussion and Conclusion

Although the influence of HR practices has been established in the previous section, further analysis of past studies shows a very conflicting picture. Apparently, neither any one HR practice nor a set of HRM practices were seen to impact organizational outcomes in the same way. Masri and Jaaron's study in 2017 found that green recruitment and selection practice was the most important and green training and development was the least important among HR practices in Palestinian manufacturing organizations. Green training and development was not found to be significant in Daily's (2012) study of 220 Mexican manufacturing firms. One of the reasons could be firms were reluctant to invest much in training and development function dedicated to green management related initiatives. Hence the investments were never enough to improve employees' green behaviour. It is seen that once the investments reach an optimal level that is a critical mass of employees is involved in training, results can be seen in terms of better awareness and changes in pro-environmental behaviour culminating into better economic results for the firm. Hence organizations need to invest enough in environmental training to see any tangible results.

Another important consideration is the role of HR managers in the implementation of Green HR practices. A study by Harris and Tregidga (2012) on HR managers in New Zealand found that managers were not active in driving environmental sustainability in their organizations. HR managers were espousing environmental values but not applying them in their personal and professional lives. Although environmental issues were considered strategic in the organizations, HR chose to concentrate on other core HR issues rather than supporting environmental sustainability. If HR

(Compiled from Jackson et al., 2011; Cherian and Jacob, 2012 and Opatha and Arulrajah, 2014)

continues to play a passive role in supporting environment management, it would be relegated to an insignificant position in future. Research has already established that Green HRM will have to play a role in driving environmental performance in organizations. Research has shown that there is a connection between Green HRM and EMS. It has been observed that organizations that have robust HR practices find it easier to implement Environment Management Systems (Jabbour *et al.*, 2012) and organizations that can integrate EMS with green HRM tend to see better economic outcomes. Hence it is time organizations realize the importance of going green and formally incorporating the green mandate in their HRM practices and this is true for Indian organizations as well.

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