

Business Sustainability Measures in Tribal Jharkhand

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ABSTRACT

The objective of this paper is to identify the CSR activities, sustainable measures and its uniqueness undertaken by these industries to uplift the tribal people and its rural impact. These industries, along with the government, are promoting and funding small scale enterprises, and are taking initiatives to boost the startup ecosystem. We have used Exploratory and cross-sectional research design. We have studied sustainability in a single snapshot of the critical industries in Jharkhand. We have collected data through interviews, journals, articles, annual reports and sustainability reports. The findings reveal that innovation is a vital element for sustainable business. This study also shows the impact of sustainability measures undertaken by these industries in the development of rural Jharkhand. It further lays down a conceptual foundation model along with policy and strategy level implications.

Keywords: Corporate Social Responsibility, Sustainability, Tribal, Rural Impact

INTRODUCTION

Jharkhand is a tribal-state, where 39.1% (IBEF, 2017) of the people are living below the poverty line, 19.6% (IBEF, 2017) of the population is suffering from malnutrition. These organizations are undertaking sustainability measures to eradicate poverty from the country. They innovate their products to stand differently in the eyes of their customers as well as gain new prospects. In the past, CSR was just a philanthropy activity for the society, but with times, it has evolved as corporate

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sustainability responsibility. It then integrated community with planet and profit. Entrepreneurs now make eco-friendly products to satisfy its stakeholders. Stakeholder satisfaction consequently leads to an increment in the demand of the product, subsequently an increase in sales and a decline in the cost of production. Industrialization leads to employment generation. Per capita income rises, thereby leading to a rise in the standard of living. GDP and NY of an economy increases. CSR also includes healthy working condition, fair wages, good superior-subordinate relationship etc. Employees working in these organisations are satisfied and motivated to achieve their goals, resulting in the attainment of organisational goals. It, therefore, helps in building effective supply chain management and hence increases the goodwill of the organization.

Triple bottom line is integration between people, profit, and planet. Any organization can be sustainable only when it follows the concept of the triple bottom line. After undertaking CSR and Sustainability activities, innovation is crucial. According to Schumpeter, “innovation can be in five ways- by launching a new product, application of new methods of production or sale, the opening of a new market, acquiring new sources of supply of raw material or semi-finished goods, new industry structure.”(Schumpeter, 1934) Jharkhand is a tribal state, where people earn their living either by agriculture or by working in these critical industries. Innovation is a vital help in creating industries and employment opportunities. It will also help in reducing the disparity between rich and poor. There are specific measures through which these industries can achieve sustainability goals. Jharkhand has a low literacy rate. Online education can reduce transportation cost. Hence, reduce pollution. To decrease the level of contamination E-rickshaw should be used as transport. Development of eco-friendly huts for the people living nearby these industries, adoption of biological nitrogen fixation process for plantation of trees are some of the suggestions to attain sustainable development goals. Dust and gases released in the mining area act as a slow poison for the worker. It is very hazardous for their health. Therefore, industries should develop gadgets for the screening of tuberculosis, HIV, lungs and heart disease regularly. These instruments will help in detecting viruses with less medical support. It is an accident-prone area; therefore, the distribution of easy to use audiobooks among the employees will help them to gain knowledge about the safety measures while working in these industries. There should be a specific technological solution

(artificial intelligence techniques, robots to be used) to stop the accidents occurring in these industries. Companies should not only look upon the profitability of itself and its stakeholder but also of non-stakeholders. There are various conceptual papers on rural development in India and abroad. However, as per my knowledge, there is no theoretical paper dealing with the impact of sustainability measures by polluting industries in rural Jharkhand. Jharkhand is a tribal state where rural people earn a living either by agriculture or working in critical sectors. Agriculture has a unique role within the concept of sustainable rural development since it represents the most common activity of the rural economy. Sustainable development leads to innovation of new product so that the demands of the customers are satisfied with optimum utilization of resources. By conservation of energy, use of solar and wind power, water conservation through effluent treatment plants, rainwater harvesting so that the customer gets the same product at a lower cost. Employment of rural people is another aspect of sustainable development. It has advantages in two folds. Firstly, rural people get a job. There is overall economic growth. Standard of living increases. Per capita income increases. Secondly, they influence society to purchase the organization's product. They help to create awareness about the product. They affect culture about the utility of the offering. Climate change is another factor taken into consideration for any organisation to be sustainable. Due to greenhouse gas, global warming, ozone layer depletion, pollution caused by these industries is hazardous for the people working in the organisation and society. Thus, organizations undertake various sustainability measures to protect people from the poisonous gases which cause respiratory diseases, heart problems etc. released by these industries. They recycle, reduce, reuse the waste and form a new product. Sustainability measures even help in reducing the cost of the product. Sustainable development helps in saving the ecosystem, improves financial performance differentiates the business, sales increment, profit increment, insights about product awareness, employment generation, overall economic growth, goodwill enhancement. Government agencies and socially motivated organization should put effort to create opportunities for sustainable development. Entrepreneurs are motivated to introduce new business models to capture the future market.

LITERATURE REVIEW

Corporate Social Responsibility (CSR)

CSR had evolved since the post-independence period when Mahatma gave the concept of Trusteeship and Sarvodaya. According to the Indian, trust act, where prominent industrialist like Tata, Birla was inspired to take part in the construction of Dharamshala and place of worship. After the World War II when everything got devastated, Bowen (1953) in his book “Corporate Responsibility of the Businessman” said that the countries could only survive when prominent industrialist spend money in CSR activities. In 1971, Johnson said that the companies have some extra fiduciary responsibilities for social upliftment of the society and it should be a part of the company’s objectives. Milton Friedman gave the stockholder theory. Stockholders are the persons who invest their money in business. Therefore, the organization looks only after the interest of his shareholders and it is the responsibility of the government to look after the rest. Carroll (1979) gave us the CSR approach. He talked about the ethical responsibility of the business. He stated a four-layer pyramid in which the bottom layer is economical, legal, and moral and philanthropy. After the stockholder theory, Milton Freeman gave the concept of stakeholder theory. Then the idea of corporate citizenship came into existence. It involves the social responsibility of business to the extent to which they meet ethical, legal, and economic responsibility as established by shareholders. The goal is to provide a high standard of living, quality of life to communities that surround them and still maintain profitability for shareholders. Its core values are safety, quality, integrity, innovation, and sustainability. In 1987, the Brundtland commission presented a new concept: Sustainable Development. It defines sustainable developments as “Development which meets the need of current generation without compromising the ability of the future generation to meet their own needs” (WECD, 1987) In 1995 John Ellington defined the triple bottom line in his books “Cannibals with forks.” He said sustainability is the integration between people profit and planet. Fair salaries, good working condition, healthcare, insurance etc. ensures employees to work with motivation, attract investment that helps in attaining organisational goals. Protection of environment by the reduction in greenhouse emission, reduce, reuse and recycle, waste management, eco-efficiency, sustainable technology

helps to reduce cost, optimum utilization of resources thus leading to increase in revenue and earn profits. Moon in 2002, said employees, and internal stakeholders to be one of the essential elements of CSR.

The main areas of CSR appear to be leadership, vision and values, marketplace activities, workforce activities, supply chain activities, stakeholder engagement, community activities and environmental activities (Blowfield & Murray, 2008). At the enterprise level, (Harjoto & Jo, 2011) suggested four motives as to why firms might engage with CSR. Firstly, management wants to build its reputation as a good global citizen (Barnea & Rubin, 2010). Secondly, it can be a strategic choice by CEOs to generate support from stakeholders to reduce the probability of CEO turnover in a future period (Cespa & Cestone, 2007). Thirdly, via CSR, the firm can signify quality in the broadest sense of the word (Fisman, Heal, & Nair, 2005; Siegel & Vitaliano, 2007). Lastly, firms use CSR to reduce conflicts of interest between managers and stakeholders (Calton & Payne, 2003; Jensen, 2001; Scherer, Palazzo & Baumann, 2006). In 2010, Wayne Visser introduced CSR 2.0. It is a double helix model that takes into consideration environment, social, economic and human sustainability as well as moral, community, labour and financial responsibility. More recently, Shepherd and Patzelt (2011) offered the following definition: “sustainable entrepreneurship focuses on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where gain is broadly construed to include economic and non-economic gains to individuals, the economy, and society.”

Sustainable Development

The Stockholm Declaration of 1972 discussed the doctrine of “Sustainable Development”. In 1987, the Brundtland Commission defined sustainable developments as “Development which meets the need of current generation without compromising the ability of the future generation to meet their own needs”. In 1992, when risk such as that of ozone layer depletion, greenhouse effect, global warming, acid rain etc. led an imbalance in nature, then United Nations Conference on Environment and Development (UNCED) in Rio De Janeiro (The Earth Summit) took place. The primary documents were to protect endangered species, reduction in greenhouse gases such as carbon dioxide, methane (UNCED, 1992). In 2002, 8 goals and 21 targets Millennium Declaration Goals (MDG’S) were set consisting of Economic and health indicators to measure CSR. In 2012, United

Nation Conference on Sustainable development in Rio de Janeiro took place. It laid down the guidelines for green economic policies, strengthen the United Nations Environment programme, high-level political forum. In Jan 2016, UNDP developed 17 Sustainability development goals with 169 targets. The 2030 agenda for sustainable development includes not only people, planet but also peace, prosperity and partnership.

“Rural development is defined as a process of sustainable development leading to significant improvement in the quality of life for the total population in the region, and especially the poor” (Meyer & François, 2016). According to the World Bank (1997), rural development is “a process leading to sustainable improvement in the quality of life of rural people, especially the poor.” According to Anriquez and Stamoulis (2007), rural development is a development that benefits the rural population and leads to the sustained improvement of the standards of living. Rural development can make a powerful contribution to the four critical goals of poverty reduction, namely broader shared growth and development within a specific rural region; access to basic needs; food security improvement; and sustainable natural resource management. A thriving rural development strategy should make people less miserable rather than comfortable in their poverty. Rural development aims at improving the countryside or peripheral areas, with a mostly agrarian character (The Presidency, 2000).

SUSTAINABILITY MEASURES UNDERTAKEN BY INDUSTRIES IN JHARKHAND

Jharkhand is a mineral-rich state. It is the largest producer of coal, mica, copper. The growth rate of GSDP between 2005-2006 and 2015-16 is 10.39% (Department of Industry, the Government of Jharkhand, CSO, and SEZ India). The average growth rate of NSDP is 11.44%, Per capita income is 1104 US\$, NSDP growth rate in between 2005-2006 and 2015-2016 is 10.90% (Directorates of economics and statistics of Jharkhand, central statistic office). There is 36% of rock sulphate, 29% of coal, 26% iron ore, 30% apatite, 18% copper ore, 5% silver. The above statistics reveal that Jharkhand has 40% of the mineral resources of India. (Department of mines and geology, Government of Jharkhand, Jharkhand and state mineral development corporation, department of atomic energy, the government of India). Jharkhand produces 1.58 million tones of minerals

(Department of Mines and Geology, Department of Industry and Cement manufacturing association, the Government of Jharkhand).

Iron and Steel Industries: There are two big giants of iron and steel in Jharkhand- Tata Steel, and BOKARO steel plant. We use Iron and steel in the construction of railway tracks, heavy pieces of equipment, infrastructure like construction of buildings, bridges, shipbuilding, pipelines, appliances etc. CSR activities undertaken are education, health, community welfare, Women empowerment. “Tata Steel engages with the community through the public hearing, meeting with the tribal leader. There were a health camp and a plantation drive organized at Bhelgarha village, Ramgarh. It also takes initiatives to revive the tribal sport Sekkor for tribal children. They work for tribal culture, music and looks in towards the promotion and preservation of tribal culture in the state of Jharkhand” (TATA Steel, 2017). It is taking in efforts to rehabilitate and relocate people in nearby areas. “NAVJEEVAN” is a scheme launched by him to provide exclusive services like health, education, women empowerment. There are societies made by them, namely Tata Steel Rural Development Society, TATA Cultural Society, and TATA Skill Development Society to promote tribal people and to develop skills in them. They conduct a tribal conclave named “SAMVAAD” to discuss tribal live hood culture and its promotion. Jharkhand tribal people earn their living by agriculture. Market yard helps to see that farmers get the products at a fair price. “MANSI” is a project undertaken by them for health care, infants. They have also installed solar lights in villages of Jharkhand. USHA MARTIN has established KGVK to promote people in tribal Jharkhand. Primary education is essential for children. It has constructed two primary schools for nearby villages. It serves 190 communities of Jharkhand (USHA MARTIN, Annual Report 2017).

Sustainability Measures: Top gas pressure Recovery Turbines (TRT) using Waste Pressure of Top Gas technology generates power.

These industries generate steam generation from the Coal Dry Quenching. Waste Sulphur Recovery Unit recovers sulphur from Coke Oven gas, which is a by-product of the coking process, and hence reduces Sox emission into the atmosphere. They use the Common Effluent Treatment Plant to conserve water. They recharge the groundwater through rainwater harvesting. Bag filters and the suction mechanism helps in sucking the fume and collects the dust in a silo. They utilize the powder obtained in iron making. Gas-based energy is being used to store coal (fossil fuel). Five J's (Jal, Jameen, Jungle, Janwar & Jan) are being

integrated to solve the problem of natural resource management. KGVK has renovated and new 61 ponds, 33 dove, 49 irrigation wells, and eight dams to conserve water (USHA MARTIN Annual Report, 2017). These industries are giving a lot of training to farmers on agriculture, paddy cultivation, as rice is the main crop of Jharkhand. The industry undertakes safety measures for its employees. They incorporate whistleblowing policy. Their employees participate in decision-making.

Innovativeness: They are using technologies to produce byproducts across the value chain (coal rejects from wateriest, slag scrap from steel making and rolling mills, coal tar). These are being used to build rail ballast, road, cement manufacturing etc. They use non-Metallic products, which are sources of Lime and Magnesium Oxide (MgO), in the Sinter Plant and Blast Furnace. Metallic by-products go to the Sinter Plant while they use the scrap to produce steel along with pooled iron. They have Carbon friendly pellet making facility. They generate power through Waste Heat Recovery from flue gases of Hot Stoves at “I” Blast Furnace. They are also Biomass briquette technology to supply hot water to furnaces.

Cement Industry: Cement helps in binding when mixed with other materials. It helps in the construction of beams, stairs, pillars, precast pipe manufacturing, piles, fencing etc. It also helps in filling of cracks in structures. CSR programmes in areas of - education, healthcare, agriculture, animal husbandry, skill development, rural infrastructure development, and disaster relief program. Aditya Birla Chemical Industry did free medicine, free cataract surgery of the rural people in Palamu. Post-surgery measures were also undertaken. They also maintain hand pumps, recharging ponds, water-harvesting structures to provide safe drinking water to rural people in Jharkhand. They have constructed toilets in rural areas near the plant at Patratu. In winter, they distribute Blankets to local people (Burnpur cement Annual Report 2016-2017). They have constructed roads in rural areas for the benefit of rural people. Burnpur cement in Jharkhand has initiated a slogan named “Sarve Janah Sukhino Bhavantu” to help the rural people suffering from cataract blindness, thalassemia detection in the society.

They monitor online Sox and Nox in all kilns to protect the climate. They use alternative fuel and raw material- clean development Mechanism and thermal electricity. They use Portland Pozzolana cement to reduce clinker in cement. Clinkers substitution (helped in the conservation of limestone). Production of grey cement through waste heat recovery. Use of latest flue gas technology, desulphurization unit and pollution control

equipment restricts emission from the processes. The application of low-grade limestone is conserving resources. Fly ash is recycled to manufacture bricks, in blending cement, agriculture, asbestos manufacturing, concreting work, construction etc. Concrete recycling system separates solid material from the water through a unique system rotating inside the inclined drum. They utilize the waste material such as chemical and marine gypsum as an additive in thermal power plant and steel plant blending. These industries dispose of the unutilized waste to CPCB authorized recycler. Rainwater harvesting is done at all units. The sewage treatment plant uses the domestic wastewater generated by the houses and supplies it back to the factories. Industries use the water further for plantation and dust suppression. They use automated water measurement systems to reduce water wastage — installation of RO plant, as well as installation of Air, cooled condenser. It also uses biodegradable chemicals like dust ban for dust suppression. There is transparency in policies of the organizations, learning and importance of cultural diversity. It takes into account stakeholder engagement, economies of the supply chain as well as whistleblowing policy.

Innovativeness: Use of the clean development mechanism and thermal electric energy. Fly ash is being recycled, which helps in asbestos manufacturing concrete work and agriculture. Use of latest flue gas technology to restrict emission of gas to control pollution.

Chemical Industry: Chemical industry helps in the manufacture of those products, which are useful in daily life by use of raw material like gas, air, mineral; water etc. The chemical industry is helpful in various other sectors like agriculture, food, toiletries etc. It helps the food industry by making of preservatives. These preservatives help in enhancing taste and increases shelf life. It helps in the manufacturing of polymers and plastics, which is useful in many aspects. Chemical industries produce fertilizers and pesticides for the agricultural sector so that the crop yield is enhanced as well as protect the crop from being destroyed. It also helps in increasing exports of the country by exporting grains and prepared food, thus increasing the GDP of the country. It even saves the lives of people by producing drugs. It helps in making products of daily use like soaps, perfumes, detergents etc. CSR activities are education, health, community welfare, Women empowerment. Pillars of sustainability are responsible stewardship, stakeholder's engagement, and future-proofing. Chemical industries use solar energy, biological fuels, and hydrogen to conserve energy. It even supplies its by-product hydrogen to power industries.

Conservation of energy is done by installing VFD's. Water is being conserved, reduced and reused by rainwater harvesting, effluent treatment plant, and reuse wastewater. Reverse osmosis technique is being used to limit effluents and waste from the chemical complex and helps in the conservation of resources. Replacement of mercury and sulphate by Membrane technology has helped to protect the environment. By using this technology, pollution caused by these industries is deteriorating day by day. These industries convert Waste heat to steam and then generates a process from flue gas in manufacturing a maximum of 32 TPD of steam which is equivalent to a reduction of 4600 MT of CO₂/year or 4600 carbon credits, besides saving water Soda ash. Stream stripping system, deep hydrolyser activated carbon filter, neutralization, equalization, ionization process for condensate, natural oxidation based sewage treatment system and gas flaring systems are being used to control emission. Water is being saved by reusing drained water in ETP with the help of vacuum systems. Innovativeness: They use Reverse osmosis technique to conserve water. They use Membrane technology to protect the environment from pollution.

Engineering Industry: Engineering industries helps in optimization of man, machine, money, material, energy etc. It helps us to save time and make the product readily available. It even helps to use resources efficiently and effectively. CSR activities undertaken by industries in Jharkhand are as follows: HEC gives free medical treatment to villages nearby. It owns a training institute wherein they provide industrial training to develop skill in youths leading to employment generation. They conduct Blind relief campaign for BPL families in which 150 out of 225 were operated (Annual Report, HEC). They do training programmes related to the safety of workers. They carry out tree plantation programmes regularly in nearby places. They do free physiotherapy camp in association with Ayush foundation. They conducted a community health awareness program -Hospital at your doorstep in which a team of nursing staff gave health tips to fourteen nearby villages.

MECON has constructed a dormitory for blind girls in Ranchi. It has also built a boy's hostel in an orphanage at Sungri, and Khunti. In Simdega, they have created a drinking water system. They conducted a skill development program at Ispat Mahila Vikas Sahyog for pottery and ceramic work. They did Cleft lip and palate operation for BPL section of the society. They organized tribal folk and traditional painting camp in nearby villages. They have also constructed a tribal high school in Khunti to uplift the tribal people. They have built seven centres to train and

enrich women. MECON has provided three ambulances for rural people in Jharkhand.

MECON has constructed 53 toilets in MHRD schools for girls. Real-time ozone concentration is being measured and monitored in and around the industrial area. They have designed a coke oven battery to conserve the depleting fossil fuels and increase the efficiency and productivity of the plant. Pellet plant has been designed to reduce price and to have an optimum yield (MECON, Annual Report 2016-2017). Moreover, they use solar energy. To conserve power, they modify the operating system of the compressor. They plan for the optimal load to save energy. They are using decentralized air compressors instead of centralized compressor unit to reduce pressure. They have constructed rooftop production shops to utilize sunlight from illumination. They manage solid waste by installing waste converter station. They reduce the consumption of power by adopting a variable frequency drive. They conduct training on sustainable development and safety at the workplace. These industries in Jharkhand use employee stewardship and whistleblowing policy. They plant trees in nearby areas. Innovativeness: They have constructed a nuclear waste converter station for solid waste management — design optimization of NEST IN roof structure with coal formed steel section. The steel produced can be recycled and is dry. Neither does it waste the resource nor does it pollute the environment.

Handloom Industries: Handloom industries constitutes of activities like weaving, knitting, weaving etc. According to a report by IBEF, it stands in the second position concerning employing agriculture. It helps in the economic growth of the country because these industries employ rural people to earn a living. It even uses women, thus helps in women empowerment. Jharkhand is recognized for Tussar silk. It also provides a ready market for agricultural products. JHARCRAFT is an organization here undertaken by the government to promote sericulture, farmers, weaver's artisans etc. It employs and trains tribal people and enhances their skill relating to dhokra art, tribal artwork, leather products, jute products, cane and bamboo products etc. They teach the villagers in Jharkhand to earn a living. They even give them raw materials and buy back their products to uplift them. Hence, it helps in income generation of poor and deprived sections of the society earn a living. It even helps in eradicating poverty from the state. It also provides training concerning entrepreneurial development to the local artisans. It has given training to 1370 rural people in different crafts (JHARCRAFT, CSR).

Mineral Industry: Jharkhand has abundant mineral resources, namely coal, copper, iron ore, bauxite etc. coal industries: The state of Jharkhand has a massive reservoir of fuel. It constitutes 27.3% (IBEF, 2017) of coal reserves in India. Coal helps in producing electricity and heat. They liquefy coal to produce gas and diesel. CSR program undertaken by industries is health, water, and sanitation. These industries are doing a lot to reallocate and rehabilitate the people living nearby. Health and safety of the workers are of prime concern for these industries. CCL has distributed blankets in many villages to BPL people. Health camp at Gandhinagar colony was conducted. 38 students from BPL society are selected and are enrolled in class XI of D.A.V Gandhinagar School along with free boarding and lodging.

Moreover, they fund the tribal students to get coaching for admission in any reputed technical institute. CCL also mainstreams school for dropouts in Jharkhand. Health check-up camps for diseases relating to hypertension, cardiac, etc. are also undertaken. They provide free medical service through CSR dispensary to remote areas in Jharkhand. They have constructed toilets in schools for sanitation. It organizes skill enhancement training program like motor driving, computer training, tailoring to generate employment to the unemployed. They provide training to promote entrepreneurship. These industries fund to promote sports in rural villages of Jharkhand. They have fitted solar streetlights for rural villages in and around Ranchi. They construct roads, community halls etc. Extensive tree plantation program is undertaken every year by these industries. They help in the preservation and reuse of topsoil. They assist powerhouses with equipment for disposal of fly ash in mine voids. Regular water sprinkling reduces spontaneous fire in raw coal stocks/reject dumps. They promote alternative energy usage, i.e. Windmill driven by return air of UG mine (WCL). Innovativeness: These industries follow a standardized method of environmental monitoring in all the mines. They have fixed air stations, water stations, noise stations and vibration monitoring stations.

Copper and Zinc Industries: Jharkhand contributes to 8% (IBEF, 2017) of the national production of copper. It is a conductor of heat and electricity. The best part of copper is it does not have to extract from any ore. Copper helps in the wiring of electrical equipment as Copper when combined with zinc is used to form brass and then mixed with other metals helps in the production of automobiles, electrical components and household fixtures because of the characteristic of flexibility. It even helps

in roofing and plumbing because it is weather resistant and corrosion-resistant. It also helps in the manufacturing of knobs, handrails due to its antimicrobial properties. Sustainability Measure: CSR activities of copper industries are drinking water, health sanitation, sericulture etc. Hindustan copper limited in Jharkhand is undertaking many CSR activities. It has constructed a fine drinking structure for providing water to rural people — distribution of water filters in Ghatsila village for safe drinking water. It offers vocational training to rural people for skill development like tailoring, driving etc. to develop entrepreneurial skill in them. It organizes eye campaigns for poor and backward class people. It educates farmers in Ghatsila and nearby towns on sericulture, vermin composting etc. Handloom weaving units have been set at Ghatsila to develop skill. It has constructed toilets under Swachh Bharat Abhiyaan Annual Report Hindustan Copper Limited (2017-2018).

It monitors the CO₂, NO and SO_x gases online by electrostatic precipitators. It uses bag Filters, and a water spray system to suppress dust and has developed a green belt. It uses a Closed-Circuit Air cooling system to conserve raw water. ETP and STP water treatment plant and construction of ash pond are being done to save water. Fly ash utilization IT will be disposed of in an ash pond in the form of a high concentrated lined slurry. It is stored in a silo and supplied to the cement industry. Bottom ash is also collected in a lined ash pond and is disposed of off to cement production. Companies sell their scrap through e-auction. Solid waste like granulated slag, waste brick, boiler ash is sold where tailing and waste rock are stored and are recycled and reused. Innovativeness: Back filters and water spray system are being used to control dust. These industries use synthetic liquid to reduce the consumption of water.

Aluminum Industry: Aluminum is an alloy with different characteristics like corrosion-resistant, high thermal conductivity, non-toxic, easily blended, durable, and heavy. It is a good conductor of heat. Its weight does not deteriorate as other alloys. It is useful in making papers, toys, utensils, telescope mirror, beer kegs, aeroplane parts, foils etc. CSR practices undertaken by these industries are education, health, women empowerment, agriculture, rural infrastructure development, live hood enhancement etc. HINDALCO is the most significant aluminum industry in Jharkhand. It has built-in balwadis, anganwadis, crèches in the district of Daltunganj, Gumla, Lohardaga. It is encouraging female education in schools. It is even providing mid-day meal to rural students. It also conducts cultural events to increase the quality of education. Steps are being taken by these

industries to impart vocational training to create entrepreneurial skill in areas of Ranchi, Lohardaga and Gumla. It provides microfinance to these rural people. The primary source of income is agriculture. They are taking steps to make the farmers learn about new agricultural techniques, storage of grains with a new pest management system. They are distributing high yield seeds in rural areas of Jharkhand like Latehar, Gumla, Hazaribagh. Aluminium industries provide school training on Multi cropping system to farmers - horticulture, vermin composition method etc. to increase their income, as agriculture is the primary source of income for rural people in Jharkhand. They have built new schools and toilets for girls.

These industries impart education and vocational training so that the self-help group can make a sustainable living. They promote entrepreneurial talent like tailoring, beautician, driving to provide a source of life. They are taking steps to educate rural people on widow remarriages, dowerless marriages. They have provided microfinance to women self-help group in Palamu, Daltonganj, Hazaribagh. Sustainability measures: It has taken steps to conserve water by recycling it to produce sheets and coils. These industries use wastewater for gardening and toilet flushing. HINDALCO has constructed two wells in their premises for rainwater harvesting, and water is collected from rooftop of the township building. They built a green belt near their campus to protect the environment.

Plantation of local species will help in to reduce dust and noise pollution, soil erosion. Zero harm culture is prevalent in these industries. Safety of employees and workers is of prime concern. They are using solar energy to conserve energy. The biogas support program is saving natural gas. They retain coal by dust suspension and dry fog system. As we have known, rural people of Jharkhand earn their living by agriculture. They use red mud filtration technique to conserve soil. Gabion wall protect is being used to prevent soil from being eroded. They are using tri flue stalks for broader dispersion of pollutants so that the environment is not damaged in one place. Stakeholder engagement in making a decision is prevalent. These industries also follow Product stewardship and whistleblowing policy.

Automobile Industries: CSR activities undertaken by these industries are education, sanitation, safe drinking water. TATA MOTORS has initiated a large number of programmes for the upliftment of rural people in tribal Jharkhand. It has started a program named “vidyadhanam” which provided scholarship to 2300 students (TATA MOTORS annual report

2017). They use of E-learning technology to teach the rural students of Jharkhand. They develop school infrastructure by constructing toilets for girls in schools and rural areas. These companies organize mobile health clinic camps for malnutrition children in tribal Jharkhand. TATA has developed a malnutrition centre wherein, they keep the infants for 3 weeks and give proper supplements as per WHO protocols to make them healthy. It uses a reverse osmosis technique and rainwater harvesting to save water. It also uses the low flow faucet technique helps in reducing water consumption. Wastewater is being reused to have a zero liquid discharge position. These industries are using Renewable source of energy like solar, wind maximally. They use an infrared sensor to control fans, pumps etc. These industries have set up LED lights in rural villages of Jharkhand.

CSR expenditure (2015-2016) and CSR budget (2016-2017) of these critical industries in Jharkhand.

Name of Companies	CSR Expenditure (in Lakhs) (2015-2016)	CSR Budget (in Lakhs)
BCCL	50.07	50.09
Bokaro Steel	7.92	1.92
CCL	212.79	42.89
CMPDI	.70	.78
DVC	25.16	41.03
ECL	24.67	10.10
Hindustan Copper	2.85	1.53
HUDCO	.00	0.60
Mecon	2.00	.00
NTPL	263.49	263.65
NTPL (Coal Mine)	14.54	13.36
Power Grid	0.81	3.88
SAIL	5.47	3.58
UCIL	1.85	1.85
ACC (Sindri)	1.30	1.00
ACC (Chaibasa)	1.56	1.50
Aditya Birla Chemical	.35	.55
Adhunik Powder and Natural Resources	.19	.00
Dalmia Cement	.20	.84
Elctrosteel Steel	.73	.93

Name of Companies	CSR Expenditure (in Lakhs) (2015-2016)	CSR Budget (in Lakhs)
ESSAR Power	.48	.58
HINDALCO	5.2	5.06
ISWP	.37	.29
Jindal Steel	10.58	2.99
Lafarge India	.69	.79
Maithon Power	1.87	4.06
Ramakrishna Forgings	.75	3.60
Rungta Mines	5.10	6.98
Tata Chemicals	1.02	.80
Tata Steel	106.84	106.00
Usha Martin	4.52	4.51
Total	754.78	605.74

Source: Jharkhand CSR council, Executive committee meeting, 15 December 2016

A SUSTAINABLE MODEL FOR JHARKHAND

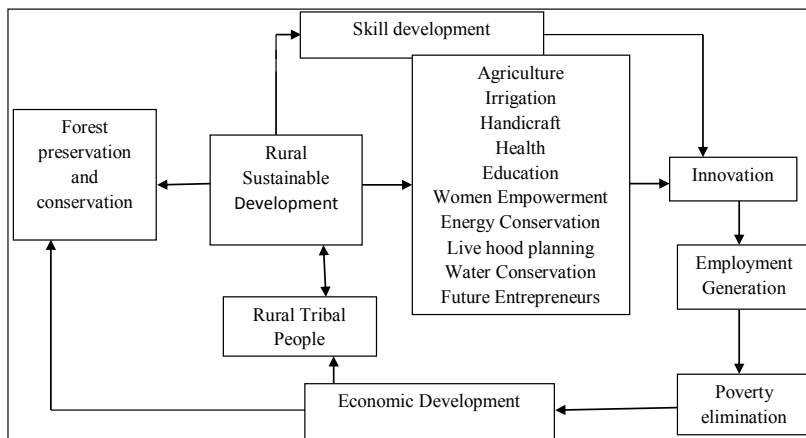


Fig. 1: A Sustainable Model for Jharkhand

Jharkhand is a tribal state where rural tribal people earn their living by Agriculture, irrigation, handicraft etc. Introduction of new technologies, training rural people to develop skill leads to employment generation, thus eradicating poverty. Per capita income increases, the standard of living increases. Therefore, it leads to the economic development of the state and

the country. Protection and conservation of forest are essential. Firstly, it helps to maintain ecological balance. Secondly, it helps rural people to earn their living by having food, fodder etc. One can conserve forest by bamboo plantation, aided natural regeneration, artificial regeneration, mixed farm etc. Jharkhand has extensive forestland through which one can set up herbal-based industries.

CONCLUSION

Sustainable development is an integration of people, profit, and planet. The mission and vision of every organization consist of Sustainable development goals (SDG's) to be successful. It not only looks after profit maximization but also wealth maximization. Along with maximization of profit, it looks after the needs of stakeholders. Sustainable development is how the enterprise manages to produce its product to create a positive impact on society. It also takes into consideration the problems of the economy as a whole like employment, malnutrition, education, women empowerment etc. It also helps in managing supply chain management and value chain of the organization. From, the suppliers to the ultimate customers, a product passes through various channels and people. From the person employed in manufacturing to sales and individual customers, each one is satisfied if the organization undertakes to achieve sustainable goals in mission and vision. Thus, it helps in eradicating societal problems. Two fundamental aspects of any business are the risk and return. Higher the risk higher the return of any investment made. There should be a trade-off between the two for any organization to succeed. Entrepreneur identifies opportunities, and each opening is associated with some risk. To reduce the risk, the entrepreneur makes innovation in a product by making modification in the product or inventing/adopting new technologies for earning profit and smoothening of business. It creates an original image of the organisation. The critical element of sustainable development is innovation. It encourages corporate leaders to solve environmental and societal problems. Thus, sustainable development helps in differentiating the entrepreneur's product from others leading to an excellent corporate reputation. The organization that undertakes sustainability practices gets a project. Thus, sales increase leading to a reduction in operational cost — marketability of the firm increases. Therefore, it leads to a rise in profit and goodwill of the company.

Jharkhand has a massive reservoir of resources. All the principal industries are undertaking a lot of initiative to be sustainable. They are protecting the environment by tree plantation, installation of chimneys, and utilizing fossil fuels optimally. Various efforts are being undertaken by these industries to reduce the release of their Sox and Nox gases. Safety, health, hygiene of workers and hearing and implementing corrective actions to resolve workers' grievances is of the prime importance of these industries. Jharkhand is a labour intensive state; therefore, these industries are taking many initiatives for skill development in Jharkhand by imparting vocational training for skill development to generate employment or to promote entrepreneurship. They are even helping and funding Start-Ups in Jharkhand to enrich the start-up ecosystem. These industries fund Start-Ups to encourage innovation and offer enhanced services to rural people. Startups will also help in creating a linkage between rural and urban Jharkhand. Jharkhand has vast forestland. These industries are undertaking measures to protect the forest. Agriculture is the prime occupation of rural people of Jharkhand. These industries give vocational training to farmers about it. They even provide fertilizers, edible yielding seeds to enrich their crops. They supply pesticides to protect their crops. These industries are working on all the variables of sustainability, i.e. they are taking all the initiatives to protect the planet, people as well as earn profit. Government of Jharkhand is also supporting these industries to innovate and promote rural areas.

Rural Impact

- These industries employ rural people, thus eradicating poverty.
- Per capita income increases the purchasing power of rural people increases.
- Enhancement of quality of life of rural people — Standard of living of people increases.
- Women empowerment is a crucial CSR activity undertaken by these industries. They are training them, giving preference, quotas for women to enhance their skill and make them independent. Thus, they bridge the equality gap between men and women.
- Provide education/literacy to children (future generation) to attain sustainability.
- Skill development: They impart vocational training is to develop the skill.

- They save the environment by plantation of trees, flora and fauna, and installation of chimneys, water and soil conservation, conservation of energy by using solar energy protects the environment. They are also working on the rehabilitation and relocation of rural people. Thus, it protects the rural people from various respiratory diseases.
- They are developing infrastructure in rural areas to connect them with urban areas.
- These industries look after the health, hygiene of all their employees, thus motivating them to fulfil individual as well as organizational goals.
- These industries increase the Gross Domestic Product of the country. National Income of the nation rises, leading to the economic growth of the country.
- Future Entrepreneurs: These industries help in skill development and help them to be self-dependent. These industries are funding startups in Jharkhand to promote start-up ecosystem.

RECOMMENDATION

Jharkhand is a tribal state where tribal people are living at the bottom of the pyramid. Jharkhand government and the startups should make certain policy level and strategic level implications.

Policy Level Implication

Jharkhand Government: Government should make policies for employment generation, industrial development, regional balance, and rural development. The government should make policies to increase the farmer's income. Formulation of plans to give accessible bank credits to them. The government should develop systems to promote agro-based industries in Jharkhand. The government should introduce a new mechanism to formulate, control, coordinate, and implement plans for rural development. India has a labour-intensive economy, so they should develop systems and strategies to promote sectors such as tourism, retail, agro-based for Jharkhand for rural development.

Start-Ups/Industries: Incorporation of startups to promote agro-based industries, as the primary income earned by rural people is agriculture. Enterprises should make a policy of reservation and quota system for rural people to uplift them, give them employment.

Strategy Level Implication

Jharkhand Government: They should inform and educate farmers about the price development of agricultural commodities through radio, and television. They should educate rural people about the land policies, tax policies and other policies made by the government to prevent them from being cheated. Promote business advisors to farmers who want to diversify their business into non-farming activities like organic production.

Start-Ups/Industries: Start-Ups should make strategies to develop rural places and to uplift rural people. CSR is one of the strategy for rural development. Develop policies like reservations, quotas to the rural people for employment in startups.

The CSR expenditure incurred in the previous year and the allocated budget amount this year has decreased; instead, it should increase. The government and these industries should look into the matter and make strategies and policies accordingly. There is poverty in Jharkhand state, but the diversified ecosystem provides opportunities for rural development.

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