

Social Impact Assessment Process for Sustainable Social Entrepreneurship

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Abstract

Sustainable social entrepreneurship (SSE) is a kind of entrepreneurship that meets the needs of the present without compromising the ability, efficiency and values of future generations to meet their own needs. SSE leads to sustainable development. Social entrepreneurs were developed through well-conceived and well directed training programmes around thrust areas, thus advancing the frontiers of theories and practice SSE. The concept of SSE challenges that fosters long-term protection of the society, environment and its habitants as the technological or engineering developments are guided by efficiency, productivity, profitability, health and environmental impacts, resource and energy conservation, waste management, and social impacts such as public convenience, unemployment and crime. The design of the study is cross sectional. SIA is defined as the systematic identification and evaluation of the potential social impacts of proposed projects, plans, programs, policies or legislative actions relative to the socio-economic components of the society and total environment. Social factor has been considered in project planning and decision-making process in order to arrive at action which should be socio-economically compatible. Environmental health impact assessment process has been conducted in order to mitigate the environmental health impacts. Socio-economic environment is a man-made environment related to a set of considerations such as demographical study including population trends and population distribution, population interaction and interrelation to the social problem and solution, economic indicators of human welfare services, educational systems, transportation systems, environmental protective infrastructural facilities such as water supply system, waste water treatment system, solid and hazardous waste management, resource conservation and recovery process, environmental public health services and medical facilities. Social impact assessment process should be enacted as social policy act in order to encourage the considerations of human society in project planning and decision making process. Extension learners were equipped with the knowledge, skills and motivation to set up their sustainable social enterprises and function dynamically and manage successfully. DPRs proposed by learners have been investigated as per guidelines provided by EDI. Entrepreneurial business planning assessment regimes (EBPARs) have been accomplished for their credibility and communicability. DEBM projects were screened for the seven fatal flaws viz., (i) Scientific feasibility, (ii) technical feasibility, (iii) economic feasibility, (iv) marketing feasibility, (v) environmental feasibility, (vi) social feasibility and (vii) fundamental legality. Social entrepreneur of an entrepreneurial team should need skills in ethics, accounting, law, finance, team creation and marketing aspects in order to avoid failures in the process. The result analysis of forty- three learners has been discussed. Based on comprehensive socio-economic analysis, a green socio-economic system model has been presented. A famous project case of a DPR-I has been presented on unsafe chromium pollution and contamination of about 18 000 to 30 000 mg/kg from Indian cotton roller ginneries and development of green design roller gin rollers for cotton gins duly investigated in a ginning factory. Such low-carbon and energy-efficient agricultural technologies of agricultural hi-tech industries have made important contributions to mitigating the impacts of economic growth on global warming. Hitherto state-of-the-art literatures, market effects have been considered. It is reported that non-market impacts such as social and environmental impact assessment should be considered for proposed projects, plans, programs, policies and legislative action. It is concluded that this action-based and extension learning field study on SSE shall promote sustainable socio-economic policies for sustainable development and poverty alleviation.

Keywords: action, efficient, entrepreneurship, project, social impact assessment (SIA) process, transformation

INTRODUCTION

Entrepreneurship is a process of setting up of new enterprises to pursue opportunities (Legg, 2004). An entrepreneur, who organizes, manages, assumes risks and enjoys profits of enterprise or business successfully (Iyer, 2014). Social entrepreneurship is introduced which is as a process of setting up of social enterprises

at considerable risk. Social entrepreneurship has been involved all the functions, activities, and actions associated with the perceiving of new sustainable social opportunities and the creation of sustainable social enterprises to pursue them. Social entrepreneurs perceive new social opportunities and create social enterprises to pursue it (Iyer, 2014). The concept of sustainable development challenges that fosters long-term protection of the environment and its habitants as the technological developments are guided by efficiency, productivity, profitability, health and environmental impacts, resource and energy conservation, waste management, and social impacts such as public convenience, unemployment and crime (Hendry, 2004). A sustainable social entrepreneur combines efficiently and effectively of six kinds of input resources can be referred to as "The six Ms" such as man-power, machinery, material, method, money and market in order to transform to output social goods, products or services (Iyer, 2013). Social entrepreneurs consider the human society in project planning and decision making and to arrive at actions which are more socially compatible plans. The concept of sustainability can become success when the resources do not get depleted due to business endeavors. The expert counselor and coordinator and author has got an autonomy to conduct one year Diploma in Entrepreneurship and Business Management (DEBM) duly awarded by Entrepreneurship Development Institute of India (EDI) to forty three DEBM extension learners during the research year (RY) 2007-2014. The proposed approach is called social impact assessment process and social entrepreneurship. DEBM counselor should provide the social extension learners for necessary academic support and guidance, conduct of course work, two contact sessions, evaluation of assignments and tutorials, guidance for detailed project reports (DPR) and conduction of term end examination (TEE). All DPRs have been formulated and appraised on social products and services. DEBM course is recognized by All India Council for Technical Education (AICTE), University Grants Commission (UGC) and Distance Education Council (DEC) as per reference <http://www.debm.ediindia.ac.in> ; reference agency code number 80410. Website: www.ediindia.org & <http://debmcourse.blogspot.in/>

RATIONALE AND BACKGROUND

Education coupled with entrepreneurship is an intricate sustainable social educational process that is focused on sustainable development and poverty eradication alleviation from the emerging enterprise spirit (Iyer, 2014). The poverty is a result of inefficient use of resources (Iyer, 2014). If it aids for sustenance then that can be eradicated. About 88% of socio-economic

growth is created by innovation (Iyer, 2013). To achieve this degree of excellence, resources must be utilized at optimum and sustainable levels at maximize efficiency as per the results analysis of optimum competitive and social markets (Iyer, 2014). The referred "A.K" economic model for an optimum output level of economic growth is the product of engineering or technical factor level (A) and the capital (K) (Iyer, 2014). The solution is the creation of new social enterprises by innovation. The social entrepreneurial idea generation is based on the concept of social entrepreneurship and innovation management. The economic growth development is explained by three factors which are given below:-

The natural increase in the accumulation of labor potential, Capital accumulation or money with which a business is being started and run, and Technological momentum can be referred as total factor productivity (TFP) or efficiency in industrial processes.

The fundamental socio-economic momentum keeps the capital development dynamic which comes from the new social enterprise creation process, new social products or service requirement from customers, the new methods of production and processes, new transportation, and new social markets and new forms of industrial organization as well as corporate social responsiveness.

Standard Production Function (SPF) is expressed as

$$Y = f(C, L)$$

Where Y=Output, C=Capital, and L=Labor

As knowledge is an important factor for the economic growth,

Standard Production Function (SPF) is modified as

$$Y = A(C, L) f(C, L)$$

'A' represents Knowledge on engineering or technical extension

Y= Output, C= Capital, L= Labor, f = Standard production function

As per the given standard production function, knowledge is a decisive production variation, innovation is required for socio-economic growth and transformation.

METHODS AND PROCEDURES

"Social impact assessment" (SIA) has been employed as the systematic identification, evaluation and mitigation of the potential social effects of proposed projects, plans, programs, policies or legislative actions relative to the socio-economic components of the society and total environment. Prior to the enactment of Environmental Impact Assessment (EIA) process in USA during the year 1970, only technical and economic factors dominant the project planning and decision making process (Canter, 1996). Hence the proposed

approach was SIA process for the socio-economic problem.

One year DEBM course is offered by EDI and sponsored by Friedrich-Naumann-Stiftung (FNSt)-A foundation of International repute from Germany (Entrepreneurship Development Institute of India, 2011). Professional expert counselor and the author has conducted DEBM course independently to forty- three extension learners during the research year (RY) 2007-2014 in eleven batches as per EDI guidelines. EDI has provided guidelines to conduct the course as per the website reference <http://www.debm.ediindia.ac.in>.

Social entrepreneurship was the targeted research area. The methodology of the DEBM course to extension learners included self-instructional study material, assignment and tutorial study, personal counseling through professional expert counselors and contact sessions during the course. The award of the diploma is based on assessment of assignments and tutorials, DPRs submitted by the learners and performance during the final (TEE) examination. Forty three projects were submitted by DEBM learners under research guidance. List of forty-three extension learners and their academic records have been uploaded in URL

<http://www.debm.ediindia.ac.in/counsellors/studentrecord/candidates.jsp>, and counselor code number (User ID) 80410.

Website: www.ediindia.org & <http://debmcourse.blogspot.in/>

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Figure 1 represents the innovation track that contains a map of the sustainable social enterprise creation process

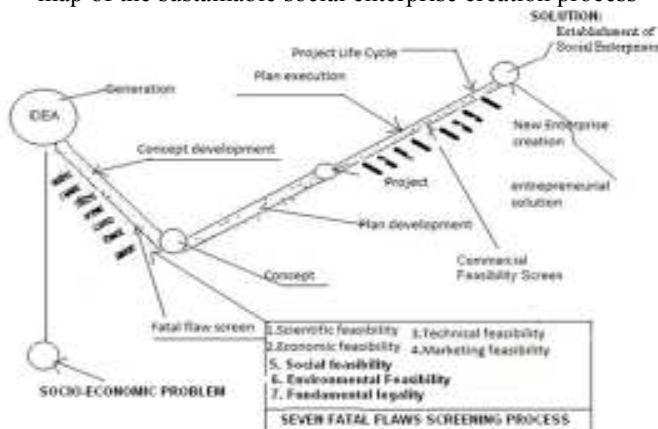


FIGURE-1, INNOVATION TRACK AND SCHEMATIC MAP OF SUSTAINABLE SOCIAL ENTERPRISE CREATION PROCESS

All DEBM projects were screened for the seven integrated fatal flaws, namely, (i) acientific feasibility, (ii) economic feasibility, (iii) technical feasibility, (iv)

marketing feasibility, (v) environmental feasibility, (vi) social feasibility and (vii) fundamental legality. A social entrepreneur or a trusted member of an entrepreneurial team should need skills in ethics, accounting, law, finance, team creation and marketing aspects in order to avoid failures in the process.

The projects were screened for socio-economic feasibility. Socio-economic absurdity for project has been tested that was whether a selling price lower than the minimum cost of its components. Therefore, a project may be technically and economically viable, but it has been formulated and appraised upon socio-economic viability as well environment sustainability (Iyer, 2014). Hence, SIA process has been conducted. Quality of Life (QOL) is described as the overall man-made environmental characteristics with respect to socio-economic environment (Canter, 1996). Information has been sought with reference to prediction and assessment (P & A) of QOL which is a part of SIA study being conducted for all DPRs through a questionnaire based on indexing system namely, (i) basic needs such as income, housing, food, clothing, (ii) well being needs such as employment, health and safety aspects, (iii) opportunity needs such as education coupled with entrepreneurial process and (iv) amenity needs such as pleasant environmental and aesthetic factors (Iyer, 2014). Social analysis of development projects has been combined with three factors of Human Development Index (HDI) for developing countries, such as income, literacy, and life expectancy (Asian Development Bank, 1991).

The importance of the conduct of SIA process is to consider social factor in an organizational planning and decision making process which will arrive at actions consistent to society and the total environment. Therefore project planning and decision-making process has been included the combined factors of technical or engineering, economical, environmental and social factors including other made-made environmental circumstances. These combined factors mathematically expressed as 'socio-economic process approach production function (SEPAPF) for an efficient socio-economic transformation theory .

$$Y = f(X_1, X_2, X_3, X_4, \dots, X_n)$$

Where, Y= Socio-economic output element and

X₁= Socio-economic input element -1

X₂= Socio-economic input element -2

X₃= Socio-economic input element -3

X₄= Socio-economic input element -4

X_n= Socio-economic input element-n



Figure-2; Schematic Diagram of Socio-Economic Process Approach

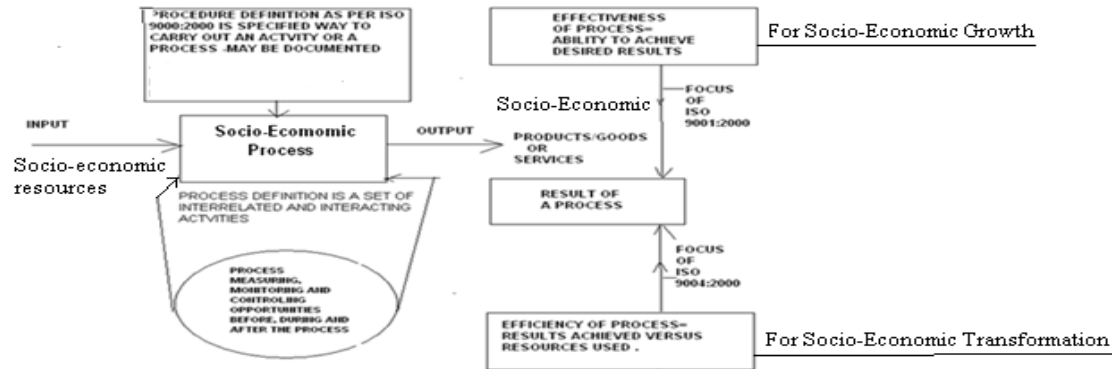


Figure-3; Schematic Representation of Socio-Economic Process With Important Elements

Project formulation and appraisal of preliminary project reports (PPRs) and detailed projects reports (DPRs) have been assessed as per the EDI guidelines during the RY 2007-2014. Socio-economic input elements have included the human society including its organizations integrated with economics. Socio-economic efficiency is defined as a ratio of socio-economic output element to socio-economic input element (Iyer, 2014). Socio-economic effectiveness is defined as the ability to achieve desired socio-economic results (Iyer, 2014). Figure 4 shows important elements of social impact assessment to predict and assess socio-economic effects.

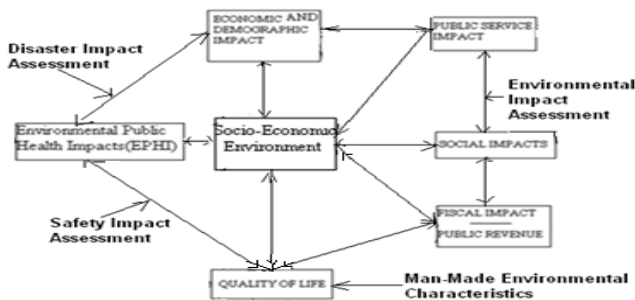


Figure-4: Important Elements of Social Impact Assessment to Predict and Assess socio Economic Impacts

SIA process has been applied to all projects, plans, programs, policies, legislative actions which were subjected to potential social effects. Integrative technical, economical, environmental and social alternative solution have been identified and evaluated during the preliminary project reports (PPRs). Social impact statement (SIS) describes only affected socio-economic environment (Canter, 1996). SIS has been

Figure 2 depicts schematic diagram of socio-economic process approach. Figure-3 represents socio-economic process approach with important elements.

written as a social document for concluding an efficient policy decision. SIA has included public participation in all steps resulting an efficient socio-economic transformation.

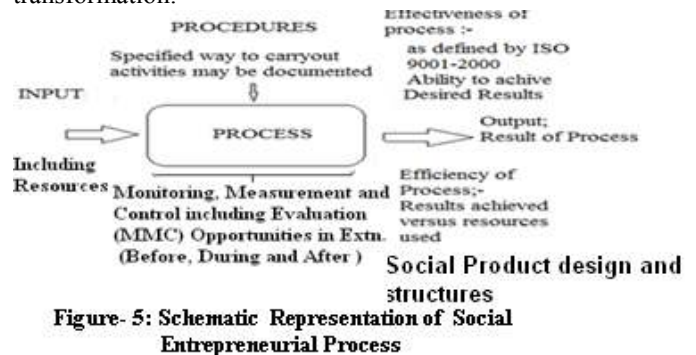


Figure-5: Schematic Representation of Social Entrepreneurial Process

Figure 5 shows schematic representation of social entrepreneurial process. It has been performed through measurement, monitoring and control opportunities for an efficient socio-economic transformation process employing socio-economic process documents and procedures. Social Assessments (SA) were documented as mentioned in socio-economic process approach. SA describes detailed project information concerned to SIS (Canter, 1996). SIS has provided statement about the affected society. Socio-economic cost benefit analysis of proposed projects, plans, policies, programs, and legislative action have been identified and evaluated assessed by using Break-Even Analysis (BEA) and Cost-Volume- Profit (CVP) analysis as well P/V graph, cash flow diagrams. Project evaluation methods have been employed.

SIA process has been proposed as Social Policy Act (SPA) to encourage the considerations of the society in planning and decision making process. A famous project case study on airport generated municipal solid waste (MSW) reveals that only 5 % to 10% of waste is recycled or composted and remaining 90 % to 95 % discharged in to unsustainable landfills (Iyer, 2014) . An another project case study indicates that about 60 % to 65% percent of airport generated solid and hazardous waste is recycled by intensive recycling or composting programs and thus saving is about fourfold. Carbon credit revenue of one-third is saved. Implementation of SIA and EIA processes have eliminated most of airport generated MSW and building up of solid and hazardous

waste to an extent of two-third in to environment (Iyer, 2014) . In order to make the venture a dynamic and growing social enterprise, the entrepreneurs have to skillfully bring about and manage resources efficiently to do dedicated social entrepreneurial process. A process approach has been developed in order to bring labor, capital, technology, management, market, machineries, land and information together in new ways and to establish a new mechanism for socio-economic development and eradicating poverty. A famous project case on eco-friendly rubberized cotton fabric roller development for cotton roller gins elaborates in WSEAS. (Iyer, 2014).

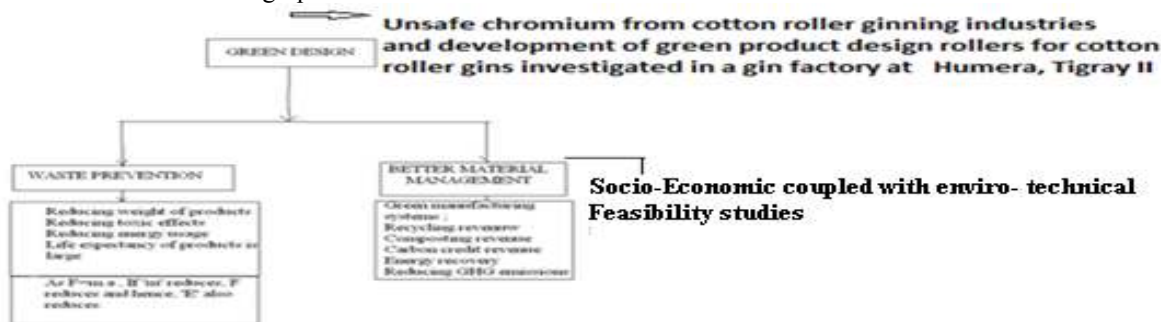


Figure-8: Green Design for Socio-Economical Benefits Waste Prevention and Better Material Management

All projects have been scrutinized for the fatal flaws. A former project case study of a DPR-I on unsafe chromium contamination and pollution of 18 000 to 30 000 mg/kg from Indian cotton roller ginneries and development of green design roller gin rollers for cotton gins duly investigated in a ginning factory (Iyer, 2014). This study realizes the hazards of chromium contamination and pollution caused in the use of chrome composite leather-clad (CCLC) rollers commonly employed in Indian cotton roller ginning industries and attempts to eliminate the chromium contamination and pollution during the complete process (Iyer, 2007). The cotton roller ginning process is the mechanical separation of cotton fibres from their seeds by means of one or more rollers to which fibres adhere while the seeds are impeded and struck off or pulled loose (Gillum, 1974). Most of the cotton ginning operations are done using roller gins. The CCLC roller coverings contain about 18 000 to 30 000 mg/kg (ppm) as total chromium of trivalent and hexavalent forms which are toxic to human health (Iyer, 2007). When the seed-cotton is ginned, due to the persistent rubbing of CCLC rollers over the fixed knives, the cotton and its products get contaminated with the total chromium of trivalent and hexavalent forms (Iyer, 2007). Hexavalent

chromium leaks threat to cotton mill workers and to those who wear cotton garments(Iyer, 2014). Cotton garments contaminated and polluted with toxic hexavalent chromium. Consumers of cotton garments and ginning mill workers were exposed to chromium pollution and are susceptible to health hazards. Toxic effects are produced by prolonged contact with airborne or solid or liquid chromium compounds even in small quantities. There are many chromium based diseases that come out of the case industries (Iyer, 2014). To avert the problem in Indian cotton roller ginning factories, an eco-friendly rubberized cotton fabric roller has been designed and developed. Figure-9 shows green design gin rollers of a double roller ginning machine. Eco-friendly rollers have been successfully demonstrated for its performance (Figure-9). The objectives of DPR-I were; (1) To identify and study the environmental and health related problems existing with the present CCLC rollers employed in cotton roller ginning industries and 2)To design and develop green design cotton roller gin rollers for cotton roller gins and evaluate its performance with a particular reference to technical, economic, environmental and social aspects in cotton ginning industries (Iyer, 2014). The design of study is cross sectional .



Figure-9: Green Design of Gin Rollers of Double Roller Cotton Ginning Machine

RESULTS AND DISCUSSIONS

Entrepreneurial process is a set of inter-acting and inter-relating social entrepreneurship activities in an organized manner (Iyer, 2014). Forty three DPRs were formulated and appraised. The study material of the DEBM course and help provided by EDI counselor succeed the extension learners to set up their own social enterprises. DEBM course targeted the learners to assess their entrepreneurial competencies and understand weakness and strength to start sustainable social business. Overall the extension course equipped learners to function dynamically and acquire the requisite knowledge and skill to plan and successfully launch their own ventures. The result analysis of all projects have been uploaded in website reference <http://www.debm.ediindia.ac.in/counselors/studentrecord/candidates.jsp>, and counselor code number (User ID) 80410. Website: www.ediindia.org & <http://debmcourse.blogspot.in/>

Success of a good social entrepreneur is determined by a sustainable business plan development (Iyer, 2014). Business plan is an important document that provides critical aspects, basic assumptions, and financial projections regarding the business venture (Iyer, 2014). It is the basic document used to interest and attract financial support (Iyer, 2014). All entrepreneurial business planning assessment regimes (EBPARs) have been appraised for their credibility and communicability. A sustainable social entrepreneurial process includes four key ingredients:

- ❖ A talented lead sustainable social entrepreneur with a balanced and compatible team.
- ❖ A technically and environmentally sound and marketable idea for green products or service.
- ❖ A thorough venture analysis leading to a complete sustainable social business plan.
- ❖ A clear statement of the cash required, phased over the period until the venture becomes cash flow positive and an indication of the minimum equity component.

DEBM extension learners were focused to work on social products and services during the RY. Social enterprises have reduced social and environmental impacts associated with the manufacture, use and

disposal of products. The resultant output of green social products and services that are sustainable production, environmental advantages with good performance and price (Masters, 2008). A famous case study of a DPR on unsafe chromium contamination and pollution from Indian cotton roller ginning industries and development of green design rollers for cotton roller gins duly investigated and demonstrated in a cotton ginning factory. Such low-carbon and energy-efficient agricultural technologies of agricultural hi-tech industries have made important contributions to mitigate the impacts of economic growth on global warming. SSE has provided innovation to improve science and technology (S & T) and sustainable rural mechanization for mitigation of poverty (Iyer, 2014). All DEBM extension learners were equipped with the knowledge, skills and motivation to set up their sustainable enterprises and function dynamically and manage successfully. The DEBM programme has promoted the application of multidisciplinary technologies to industries and sustainable production and quality.

All DPRs are accessed from the reference website <http://www.debm.ediindia.ac.in>.

Website: www.ediindia.org & <http://debmcourse.blogspot.in/>

As per the characterization and assessment of DEBM extension learners, guidelines are presented with respect to entrepreneurial requirements to become a sustainable social entrepreneur and to set up sustainable enterprise (Iyer, 2013). Nevertheless step number 6 has been researched and proposed solution approach on SSE.

Step- 1: Decision to be self-employed to become a social entrepreneur and to set up a social Enterprise.

Step- 2 : Social product and innovative process selection including marketing feasibility .

Step -3 : Deciding on size of the unit

Step -4 : Location of the unit

Step- 5 : Technical and economical feasibility of the unit

Step- 6 : Environmental and social feasibility of the unit.

Step -7 : Awareness on statutory requirements including fundamental legality.

Step -8: Infrastructures for the unit

Step -9 : Working out project cost

Step -10: Provisional micro, small and medium scale industry (SSI/MSME) registration

Step- 11: Bio-data of the social entrepreneur

Step- 12: Preparation of sustainable social business plan

Step- 13: Project implementation schedule (PIS)

Step -14: Project report preparation –Bankable project report

(Preliminary project report and detailed project report)

Step- 15 : Financial assistance for setting up a social enterprise.

A project may be technically and economically feasible but has been implemented only if environmentally and socially feasible. Environmental impact assessment (EIA) is defined as the systematic identification and evaluation of the potential projects, plans, programs, or legislative actions relative to the physical-chemical, biological, cultural, and socio-economical components of the total environment (Canter, 1996). The purpose of the EIA process was to encourage the consideration of the environment in planning and decision making and to ultimately arrive at actions which are more environmentally compatible. Hitherto environmental and social factors are combined as an environmental impact assessment (EIA) process or National Environmental Policy Act (NEPA) process in USA (Canter, 1996). The unknown and contribution to the knowledge has been identified and evaluated that should separately consider social and environmental factors in a project planning and decision-making process. Hence, it is very important to conduct social impact assessment (SIA) separately for all projects.

This action-based research study on social entrepreneurship promoted policy recommendation to identify and evaluate social policies in order to transform an efficient socio-economic development. In SIA Process, such of those social assessments (SAs) which were involved considerable severity impacts (or effects) to the human society require to write Social Impact Statements (SIS). Such of those SAs which did not involve considerable severity of impacts to the human society have not been described SIS. SISs are prepared for land, air and water pollution (Iyer, 2011). Strategic social assessment (SSA) has been applied to the SIA process. Ten-step methodology for SIA study has been followed.

SIA study has been involved based on the following activity-based management approach with public involvement in all steps;

1. Definition of a socio-economic problem
2. Identification of socio-economic effects
3. Evaluation of socio-economic effects
4. Prediction and assessment (P & A) of socio-economic environment
5. Statement of significant finding
6. Public Participation
7. Solution for the given socio-economic problem such mitigation strategy
8. Incorporation of mitigation measure
9. Reviewing action plan
10. Continuous project improvement.

Conduct of Social Impact Assessment (SIA) Study

After the Second World War, both the industrial and urban development are severely affected the society and total environment towards unsustainable development in terms of copious amount of building up of solid and hazardous waste (Iyer, 2011). This rapidly deteriorates land, air and water quality as well quantity including sanitation and quality of life (Canter, 1986). Hence it was an important to consider social factor in planning and decision making of proposed projects, plans, programs or legislative actions in order to alleviate or mitigate the social and environmental impacts. Socio-economic environment is a resultant of man-made environment (Canter, 1996). It was related to a wide range of considerations concerned to human society in the environment. The various considerations of the present study for an efficient transformation of socio-economic environment were concerned to demographical study including population trends and population distribution, population interaction and interrelation to the social problem and seeking solution, economic indicators of human welfare services such as quality of life, sustainability index, human development index, educational systems providing higher education and advancement in education and research, transportation systems, environmental protective infrastructural facilities such as water supply system, waste water treatment system, efficient solid and hazardous waste management, resource conservation and recovery (RCR) environmental public health services, medical facilities and qualified as well as experienced faculty in Higher Educational Institutions (HEIs).

It is reported that at present only minimum amount of industrial generated waste is being recycled or composted (Iyer, 2014). For most industrial waste about 60 % to 65 % could be recycled or composted and potentially saving of fourfold with intensive recycling or composting programs. This research experience has shown that about 65% percent of the solid and hazardous waste has been recycled and thus saving of four times in terms of socio-economical cost.

Design and Development of Green Economic System Modeling for an Efficient Social Economic Transformation

Based on the economic system model study, SIA and EIA processes, comprehensive and green socio-economic system models are discussed in self-explanatory figures 10 to 16. These economic system models have been designed and developed based on traditional, free market, social, and mixed economic system models which are in self-explanatory figures 10-16.

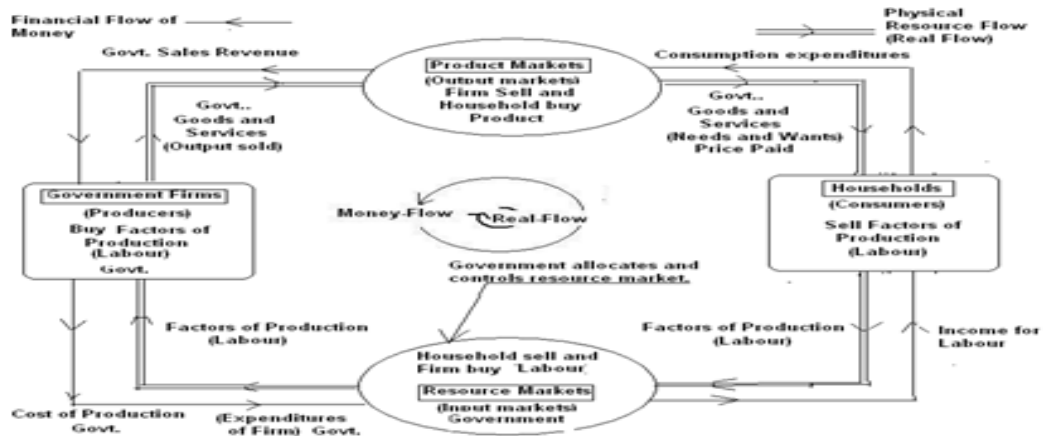


Figure -10; Circular Flow Economic Model of Command Economy for Exchange of Resources with Money

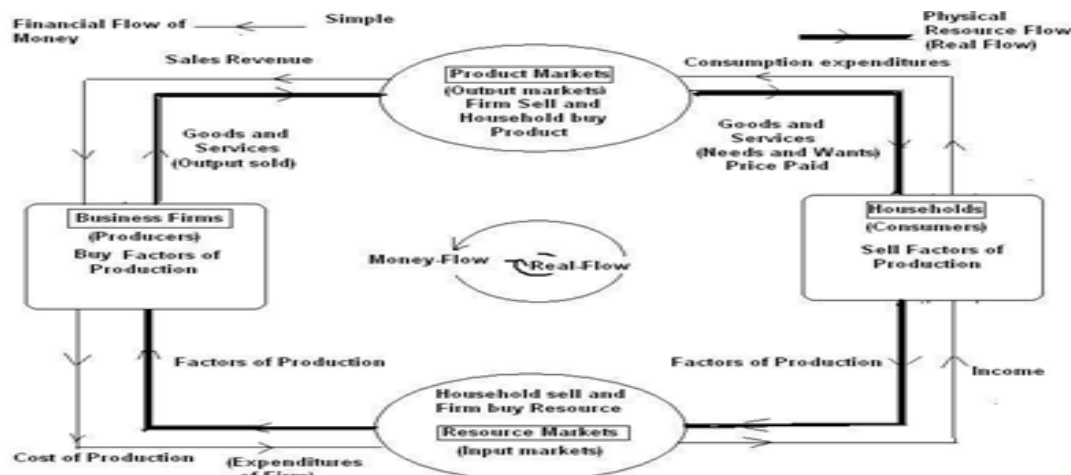


Figure-11: Circular Flow Economic System Model of a Free-Market Economy for Exchange of Resources with Money

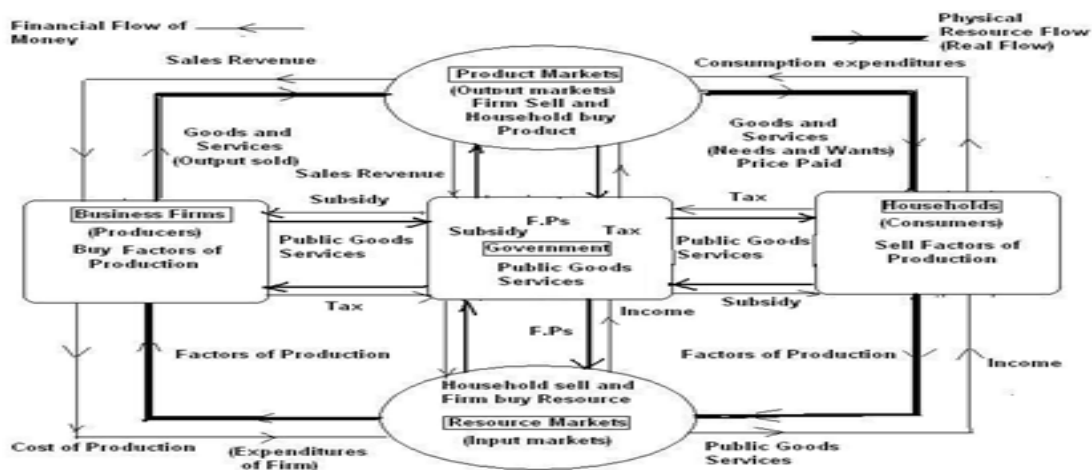


Figure- 12: Circular Flow Economical System Model of a Mixed Economy for Exchange of Goods and Services

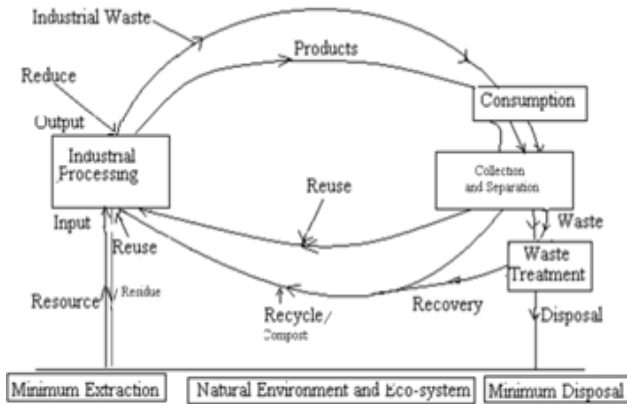


Figure-13: Closed -Loop Shaped Green Economical Model

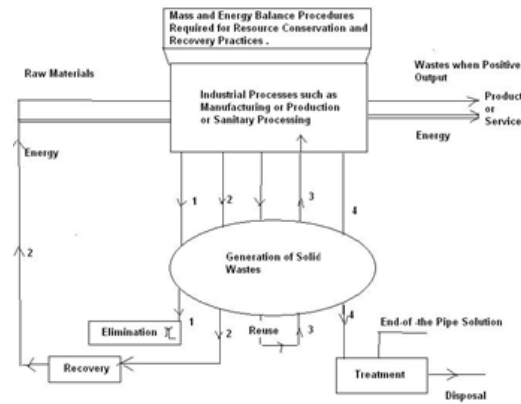


Figure-16: An Efficient Model of Industrial Process for Sustainable Socio-Economical System

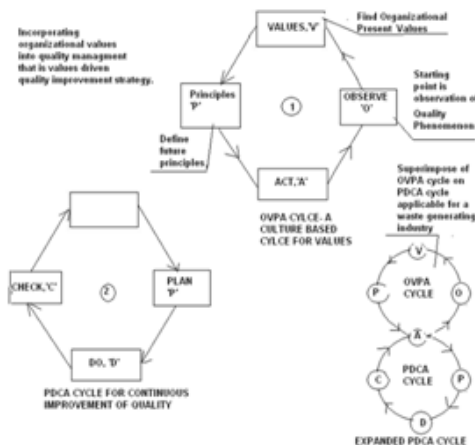


Figure-14: Expanded PDCA cycle for Resource Conservation and Recovery (RCR) for green economical system

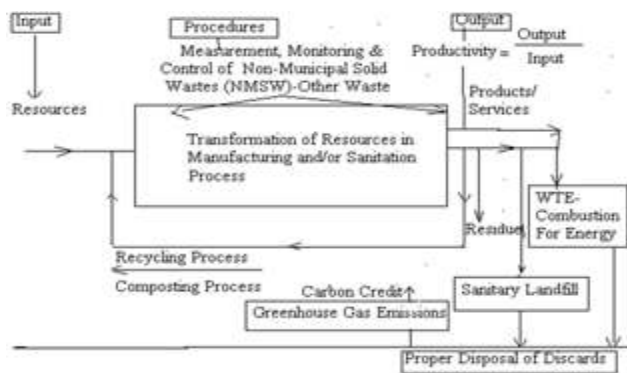


Figure 15 Process Model for Green Economy

CONCLUSIONS

Social impact assessment process has been proposed for sustainable social entrepreneurship which is defined as the systematic identification and evaluation of the potential effects of proposed projects, plans, programs, policies or legislative actions relative to the socio-economic components of the society and total environment. Prior to the implementation of environmental impact assessment (EIA) process, only technical and economic factors dominant in the project planning and decision making process. It is concluded that the project planning and decision making process should consider the integrated considerations of technical or engineering, economics, environment and social factors. It is necessary to consider separately the factor of human society in project planning and decision-making process of proposed projects, plans, programs, policies or legislative actions which is called Social impact assessment process or social policy act process. Environmental public health impact (EHIA) assessment as part of SIA process has been conducted in order to mitigate the environmental health impacts that were likely to occur in the socio-economic environment. A famous case study on airport generated MSW has been discussed.

Sustainable social entrepreneurs should be developed through well-conceived and well directed extension learning and training programmes around thrust areas, thus advancing the frontiers of theories and practice sustainable social entrepreneurship. This action-based research and extension learning field study shall provide an avenue for sustainable development and poverty alleviation through a proposed innovative process approach called an efficient socio-economic transformation process. Sustainable social entrepreneurship that challenges and prospects that fosters long-term protection of the society, total environment and its habitants as the technological

developments are guided by efficiency, productivity, profitability, health and environmental impacts, resource and energy conservation, waste management, and social impacts such as public convenience, unemployment and quality of life. The development of new knowledge is an important factor for the socio-economic growth. The standard production function has indicated that knowledge is a decisive production variation. About 88% of socio-economic growth is created by innovation. The most important of these considerations can be referred to as "The four Es" (engineering or technical, economics, environment and ethics) in planning and decision making process. A project or business plan may be technically and economically feasible but should be implemented only if socially and environmentally sustainable. A process approach has been proposed as a solution in order to bring labor, capital, technology, management, social market, machineries, land and information together in new ways and to establish a new mechanism for sustainable development and poverty alleviation. Monitoring, measurement and control opportunities before, during and after the process have been identified and evaluated in a socio-economic system by means of a process approach during the RY.

The objective of the DEBM course is "New Sustainable Social Enterprise Creation and Management". DEBM course have developed motivation to extension social learners and reinforces social entrepreneurial traits with the spirit of setting up sustainable social enterprises. Forty-three social projects have been proposed by DEBM extension learners attached with the counselor as well author during RY 2007-2014. Counselor has formulated and appraised all DPRs. Projects were screened for seven fatal flaws, viz., (i) scientific feasibility, (ii) technical or engineering feasibility (ii) economic absurdity and feasibility, (iii) marketing feasibility, (iv) social feasibility, (v) environmental feasibility and (v) fundamental legality. All EBPAs have been appraised for their credibility and communicability. All social entrepreneurial learners have set up their own sustainable social enterprises based on a sustainable social enterprise creation process under the research guidance of expert counselor as well author. Social enterprises were established to focus on social products and services that reduce social and environmental impacts associated with the manufacture, use, service and disposal of products. The results were socially and environmentally advantages with sustainable production, good performance and price. All extension learners have been duly awarded DEBM.

Education coupled with entrepreneurship is an intricate sustainable educational process that has been on an

efficient socio-economic transformation and poverty alleviation from the emerging enterprise spirit. Cleaner technologies have been investigated that shall produce more output than conventional technologies by causing less damages to the society and environment. Greener technologies as those that are less polluting, use resources in a sustainable manner, recycle more of their wastes and products and handle all residues in a more environmental and socially acceptable way. SIA process has been proposed as Social Policy Act (SPA) process to encourage the considerations of the society in planning and decision making process. A famous project case study on airport generated municipal solid waste (MSW) reveals that only 5 % to 10% of waste is recycled or composted and remaining 90 % to 95 % discharged in to unsustainable landfills. An another project case study indicates that about 60 % to 65% percent of an airport generated solid and hazardous waste is recycled by intensive recycling or composting programs and thus airport saving is about fourfold. Carbon credit revenue of one-third is saved. Implementation of SIA and EIA processes have eliminated most of airport generated MSW and building up of solid and hazardous waste to an extent of two-third in to environment. A pilot plant of a DPR-I on unsafe chromium of 18 000 to 30 000 mg/kg from Indian cotton roller ginneries and development of green design roller gin rollers for cotton gins duly investigated which has been demonstrated successfully in a ginning factory. A comprehensive and green socio-economic system model has been presented for sustainable development and poverty alleviation.

DEBM study material and help provided by the counselor succeed the learners to set up their own social enterprises. DEBM course has enabled the social entrepreneurs to assess their social entrepreneurial competencies and understand weakness and strength to set up their own sustainable social enterprises. The study shall promote social policy act process in order to efficiently transform socio-economic status of any country based on the entrepreneurial research conducted in India. Also, the programme promotes the application of multidisciplinary technologies to social industries. It is imperative that such a dynamic and pragmatic approach be implemented to create sustainable social entrepreneurs on a large scale. Hitherto state-of-the-art literatures, market effects have been considered. It is reported that non-market impacts such as environmental and social impact assessment process including environmental health impact assessment process should be conducted for proposed projects, plans, programs, policies and legislative action. It is concluded that this action-based and extension learning field study on SSE promotes social policy act (SPA) process for sustainable

development and poverty alleviation. For further reading <http://www.ediindia.org/doc/List of Institutions for website latest.pdf> serial number 68.

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