

Education for Sustainable Development in India: Problems and Prospects

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ABSTRACT

India is considered as a world leader amongst the developing countries in terms of economic sustainability and growth. India also has a growing number of literate populations due to rapid expansion of secondary and post-secondary education landscape. However, when it comes to Education for Sustainable Development (ESD), India stands more elitist to serve only privileged sections of population. A basic aim of Environmental Education (EE) is to succeed in making individuals and communities understand the complex nature of the natural and the built environments resulting from the interaction of their biological, physical, social, economic, and cultural aspects, and acquire the knowledge, values, attitudes, and practical skills to participate in a responsible and effective way in anticipating and solving environmental problems, and in the management of the quality of the environment. Education is the single most important means for empowerment and sustained improvement in all well being. Sustainable development is a basic Human Right and unless this target is reached with the potent tool of Education the purpose of Education would remain unfulfilled. Education for Sustainable development is a dynamic undertaking where every person has a chance to benefit from Educational opportunities and learn the life style, behavior and values necessary to create a sustainable future. The present paper aims at identifying the role of education in attaining sustainable development, identifying the problems and future prospects of Education for Sustainable development in India. An attempt is made to recognize the challenges faced by India as regards its education system at various levels in attaining sustainability. Necessary strategies, guidelines and recommendations are provided for Higher Education Institutions in India.

Key Words: *Environmental Education, HEIs, Sustainable Development, Strategies,*

INTRODUCTION:

In the 1990s there have been many attempts to evaluate the impact of economic growth on environment quality. Economic growth results in ever increasing use of energy and materials and hence more environmental degradation. Recent hazards such as severe Earthquake and Tsunami in Japan are the indications of increasing rate of environmental degradation.

Education remains as one of the greatest concerns facing the developing world where despite enormous progress in primary schooling facilities and enrolment, fight against illiteracy continues. Efforts to improve quality of education remain a challenge right from school, college to university levels catering to different clientele from diverse socio-economic groups

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to rural and remote rural areas to towns, big cities and mega cities. Planning and policy formulation of education and literacy beyond the teaching-learning transactions within the four walls of a classroom to make the people more aware of their surroundings while expanding the spectrum of their learning is therefore a biggest challenge facing the global world, including India. There is every need to make them understand where they stand, what needs to be done to bring improvements in the quality of their lives.

Now it is felt all over the world and India in particular that literacy and education is one such reinforcing agent which addresses the fundamental issue of human suffering – thereby straddling all variables—technical, political, social, economic, geographic, racial, ethnic and many others. Alternatively literacy for all, adult literacy in particular could be thought of as the engine to spearhead a revolutionary movement, which will address some of the fundamental issues affecting and shaping the world for our children of the coming generation. There is every need to tap this class of rich human resource who will bring changes in the future in the ‘*real*’ sense, and therefore this special class needs to be made more aware of the implications of their ignorance and the need for empowering them otherwise the entire generations will recede into the darkness of unawareness as it had been for the past many decades.

The primary purpose of the paper is to outline the concept of **Education for Sustainable Development (ESD)** as a framework to refocus the education system to achieve the goal of a better future so that the present generation is engaged adequately for achieving its own well-being while ensuring even better quality of life for the successive generations. Following a treatment of the philosophical and intellectual foundations of technological, organizational, social, and pedagogical innovation necessary for sustainable transformations of existing institutions and mindsets, principal aim of this study is to establish how higher education can optimize contributions to sustainable development.

OBJECTIVES:

The major objectives of this study are stated below:

- To identify the role of education in achieving sustainable development.
- To establish the linkages between Higher Education (HE), Environmental Education (EE) and Education for Sustainable development (ESD).
- To develop visions of higher education and to optimize its contribution to sustainable development.
- To look at areas where policy solutions may be needed and strategies can be formulated to support higher education’s contribution to sustainable development.
- To identify major challenges faced by Higher Education system of India in attaining Sustainable development.
- To suggest various Policy measures, guiding principles and recommendations for Higher Education Institutions (HEIs) in this regards.

PARADIGMS OF EDUCATION:

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A cursory glance at the literature of education points out the fact that three kinds of phrases are common in the field. These phrases are:

- (1) Education,
- (2) Adjectival education, and
- (3) Education for Sustainable Development (ESD).

These phrases are dealt with under the three different paradigms:

- 1) **Social Development Paradigm**: When we all say the word “education”, it means the mainstream education, which is under the banner of the “Social Development Paradigm”, where the parts (such as mountain, hills, rivers, forests, plains, snow, etc.) are studied to understand the whole (the Earth). It assumes that the sum of the parts is equal to the “whole”. Education takes place within the framework such as market philosophy, management culture, replicating modernists, or even entrenched modernists. Under this Paradigm, education carries on its traditional role of replicating a modernist society. Knowledge is transmitted in specialist and atomistic ways so that learners can be prepared for their role in the machine – to learn how to control and be controlled, to produce and to consume. The red/green and the deep green thinking seek to counter alternatives to this thinking.
- 2) **New Environmental Paradigm (NEP)**: The paradigm supports the idea that “*matter is not mechanistic but contains aspects of wholeness and fundamental interconnectedness*”. Ecological insights including Gaia theory support the idea of interconnectedness of life and physical systems. According to this paradigm, “*society too is seen as a web of shared meanings than a collection of individual consumers. Things are coming together; becoming more dependent*”. In education, there has been the revival and extension of the old idea that learning is a dialogue, communication and creation of new meanings in a safe and cooperative environment. Under this paradigm, there are many movements, which are libertarian, and community education, progressive education, adjectival educations and socially critical and holistic Environmental Education (EE) and Development Education (DE).
- 3) **Education for Sustainable Development Paradigm**: In order to fill up the vacuum created by this thinking, it is necessary and required to find new model and approach which builds a new model, while retaining continuity with existing good practices. A model is required to continue to distil many contributory elements from these paradigms. The new model looks at the whole to be more than the sum of its parts. The new model holds this potential and has shown some interesting convergences in recent years. Both DE and EE share “*increasingly common aims, objectives, goal, vocabulary and approach*”. And their defining elements should be “*woven into a core framework utilizing the concept of sustainability to produce an accessible, balanced and empowering education for sustainable development*”. This is what is to be called education for sustainable development (ESD). It differs from the other educations because it is radical in nature, and it does not subscribe to technocratic interpretation of sustainability.

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Approaches and intentions of these paradigms are different. The contexts under which they emerged vary greatly. Their pedagogies differ from each other. Yet, their ultimate goal remains the same i.e. to develop the full potential of an individual so that he/she become competent in promoting sustainability in the society.

DEFINING SUSTAINABLE DEVELOPMENT:

The term “*Sustainable Development*” became prominent after the Rio Earth Summit in 1992 which prioritized global environmental discussions and improved upon the initial framework introduced at the United Nations Conference on the Human Environment, Stockholm in 1972. The resulting Rio Declaration on Environment and Development, however, advocated the role of education in preventing ecological degradation (Cleveland & Kubiszewski, 2007). There are many definitions of the term “*Sustainable Development*”, but the most widely accepted is the one used in the publication “Our Common Future”, sometimes referred to as the Brundtland definition:

“Development which meets the needs of the current generation without compromising the ability of future generations to meet their needs” (UN, 1989).

This definition has the advantage of describing a future that all countries could engage with, but the disadvantage of vagueness and contestability. Sustainability is understood as the end state and sustainable development is understood as the process of getting there.

Conceptualizations of Sustainable Development:

It makes quite a difference whether one looks at sustainable development as just an environmental issue, or alternatively as a multidimensional challenge in the three dimensions: economic, environmental, and social. The competitiveness, environment, and employment are the operationally-important dimensions of sustainability – and these three dimensions together drive sustainable development along different pathways and go to different places than environmentally-driven concerns alone, which may otherwise require tradeoffs, for example, between environmental improvements and jobs. The inter-relatedness of competitiveness, environment, and employment is depicted in the **Table:1** below:

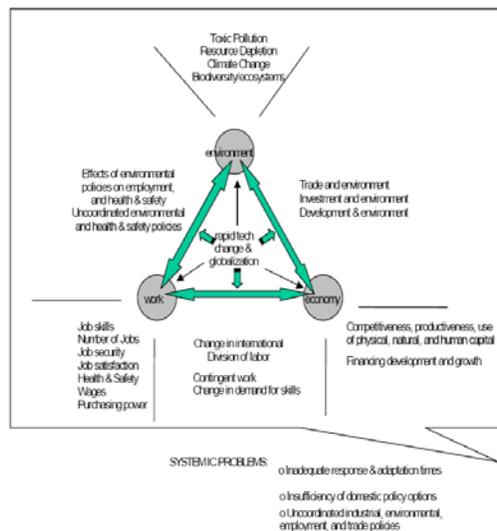
Table:1 Interrelatedness of Competitiveness, Environment and Employment

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AGENDA	Competitiveness	Environment	Employment
Current	Improve Performance/Cut Costs	Control pollution/make simple substitutions or changes Conserve energy and resources	Ensure supply of adequately trained people; dialogue with workers Provide safe workplaces
Sustainable	Change nature of meeting market needs through radical or disrupting innovation (a systems change)	Prevent pollution through system changes Change resource and energy dependence	Radical improvement in human-technology interfaces (a systems change)

A *sustainable development* agenda is, almost by definition, one of systems change. This is not to be confused with an *environmental policy* agenda, which is – or should be – explicitly effect-based, and derived from that, a program of policies and legislation directed towards environmental improvements, relying on specific goals and conditions. The sustainable development policy agenda focuses at least on processes (e.g., related to manufacturing, transport, energy, construction, etc.), and may extend to more cross cutting technological and social systems changes. The *current strategy agendas*, even those that go beyond environmental goals, are defined as those that are focused on those policies that (1) improve profit and market share by improving performance in current technologies or cutting costs, (2) controlling pollution/making simple substitutions and changes, and conserving energy and resources, and (3) ensuring an adequate supply of appropriately skilled labor, and safe and healthy workplaces. These strategies can be described as ‘reactive’ vis-à-vis technological change, rather than proactive. Major dimensions of sustainability and their interrelations are shown in **Figure: 1** below:

Figure: 1 Dimensions of Sustainability



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Source: Nicholas A. Ashford (2004)

The kind of innovation likely to be managed successfully by industrial corporations is relevant to the differences between current and sustainable technology agendas. One can argue that the needed major product, process, and system transformations may be beyond those that the dominant industries and firms are capable of developing easily, at least by themselves. Further, industry and other sectors may not have the intellectual capacity and trained human resources to do what is necessary.

Sustainable development and ESD:

Education is our bridge from the past to the present and from the present to the future. ESD is considerably broader in scope and complements the adjectival educations. In other words, ESD encompasses many aspects of these respected and established fields of study. The explanation of the phrase ESD, its concept, composition and intentions can be found in Bhandari & Abe (2003).

Sustainable development or sustainability is not a new idea; it is deeply embedded into the cultures of the Asia-Pacific region under different forms and names. It means caring not only for ourselves but also our children and their children. The world we live in, should be a better place (at least, not worse off), when we leave it for our children. So in a nutshell, sustainable development means "*living well within the means of nature*".

But the greatest challenge we are facing today are the growing population, absolute poverty, environmental problems, conflict, violence, terrorism and inappropriate development, which are clashing together to weaken the ecological system on which we depend and live. Not only these forces, but also other forces (natural calamities, human actions and their combined effects) are in the loom. It is for these reasons that a huge shift in our thinking, values and action is required.

Meaning and scope of ESD:

“ESD is an emerging but dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future.”

Many scholars agree at the point that ESD is an extension of environmental education that would promote a sense of responsibility and active learner's participation in resolving environmental problems (Tilbury 1995); a successor of environmental education (Hesselink *et al.*, 2002); a basic understanding of the interrelationships among environmental, economic and social equity issues (PCSD, 1996); a dynamic extended environmental education, emphasizing critical thinking, problem solving skills and sensitivity (Huckle and Streling, 1997); a trick because it is a way of thinking as much as what we are thinking about (Wheeler and Bijur, 2000); and the recent version of environmental education (Bhandari, 2003 a & b). According to UNESCO,

“ESD means a lifelong learning process that leads to an informed and involved citizenry having the creative problem solving skill, scientific and social literacy, and commitment to

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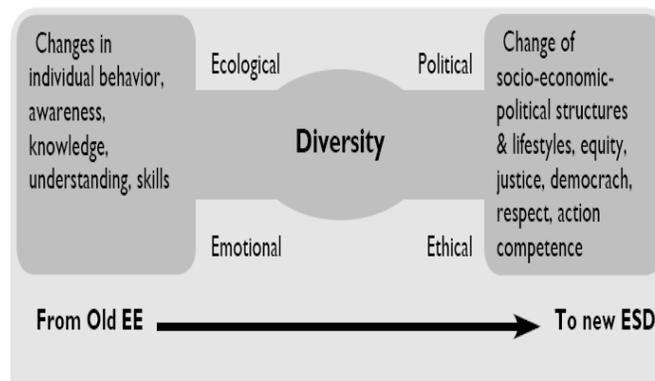
engage in responsible individual and cooperative actions. These actions will help ensure an environmentally sound and economically prosperous future. “ESD is an approach to teaching and learning that meets the challenge of balancing the three “E’s” and intergenerational equity. It is a lifelong process of gaining the knowledge, skills and values needed to create lasting economic prosperity, environmental health, and social justice.”

ESD is an empowering process in which the individual and community learn the connectivity among the three “E’s” together with three “R’s” (reading, writing and doing arithmetic skills) and use this knowledge to improve the quality of life of humans. The core strands of ESD embrace the following:

- ESD is considerably broader in scope and complements the adjectival educations.
- ESD is a new model of education that builds on the existing good practices.
- ESD puts emphasis on practical skills that are good for self-employment and are increasingly sought by employers.
- ESD involves learner until their behaviors are changed and new values and ethics, formed.
- ESD goes beyond knowledge, skills and attitudes and blends them together.
- ESD is context-oriented and puts emphasis on learning, action, reflection and action research to respond to the local issues.
- ESD is student-centered and activity-based.

Figure: 4 shows how the focal point of Environmental Education (EE) is shifting towards ESD and how it is becoming broader and more inclusive in content. ESD is a stage in the evolution of environmental education and has a strong link with social, political and development educations (Hesselink *et. al*, 2002).

Figure:4 Environmental Education in Transition: broadening the scope or a new Paradigm?



Source: Hesselink *et. al*. (2000:4)

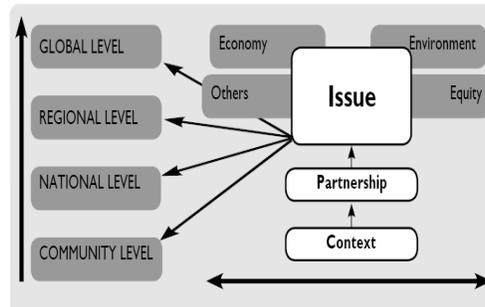
From **Figure:5** below, some of the distinctive features of ESD can be drawn:

- ESD is context and issue-based, and locally relevant.

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- ESD seeks partnership across the society.
- ESD adopts an inter-disciplinary or trans-disciplinary approach. The issue comes before the discipline.
- ESD explores links between students' personal lives and wider environment and development concerns (both horizontally and vertically).
- The pedagogy combines the best practices of content integration (the economy, the environment and equity), inquiry-based learning; and authentic assessment. It takes the deep ecology approach.

Figure: 5 Horizontal and Vertical Linkages of ESD



Contrasts from Environmental Education (EE):

Some educationists argue that if ESD is the extension of EE, then why do not we call it EE? Why do we need this new vocabulary? If it differs from EE, then what is the main difference? The main differences can be identified as: Firstly, EE belongs to the category of the adjectival educations. It is argued that the adjectival educations are not broad enough to include concerns other than the ones designated by their adjectives because they tend to meet the concerns of some selected interest groups only. In this regard EE is no exception. Secondly, EE views the environment within the context of human influences i.e., in terms of economics, social equity, culture, political structures, etc. In other words, EE is environment-based and attaches its values on the environment. Thirdly, these principles focus on values related to “*environmental sensitivity*” and demands the active involvement of learners in “*planning their learning process*”. Participation and equity values are meant only for students, but not for society or community in general. The three E’s are presented as a series of necessary trades off, i.e. one can be had at the loss of other. On the contrary ESD demands that the three “E’s” are considered a whole and should be promoted together, never one at the cost of other. Thus, ESD goes beyond EE to grapple the more complex issue of how to promote all three “E’s” together. This is how the phrase ESD was coined differently from EE.

Conceptually, no significant difference exists between EE and ESD. However, at the operational level, there are some differences, especially in their approach and methodology as in **Table: 2**

Table: 2 Differences between EE and ESD

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Description	EE	ESD
1. Content	Knowledge and understanding of the natural environment and impact of social and political systems	Environment in the context of social, political, economic. Focus on local to global issues and their solutions. Add more content equity and technology.
2. Context	Formal and non formal mode	Lifelong learning process (any time, any where)
3. Method	Interdisciplinary, learner-centered, experiential and inquiry-based.	Interdisciplinary, learner-centered, experiential and inquiry-based. Stresses on partnership and systemic thinking.
4. Action	Environmentally sound skills and behaviors for decision making and citizen action.	Focus on citizen action skills
5. Values	Environmental protection in social and economic context	Environmental sensitivity. Inseparability of three E's.

Source: Wheeler et al. (2002)

The Focus of Education for Sustainable Development (ESD):

ESD gets beyond the reduction and analysis approach to the synthesis and integration approach of what we know and can know. In other words, the understanding of interconnections between environmental, economic and social systems is core to ESD. ESD develops in learners the critical thinking skills, political knowledge and values required to analyze the complex interdependence of social, cultural, economic and political aspects of sustainable development. In other words, ESD cultivates in learners the habit of system thinking, interconnections and multiple perspectives (Wheeler *et al*, 2000). Sterling suggests five indicators of ESD which cut across the themes of environment, the economy and social quality of life of all. These indicators are:

- **Sustainability values:** Values that need to be reflected in education are intergenerational equity, conserving biodiversity and ecological integrity, qualitative development, community development, etc.
- **Personal and community values:** Values such as a sense of responsibility to the environment and other people, abilities to translate this responsibility into action in both personal and public life, the ability to respond positively to change and uncertainty; the capacity to see the links between individual and group actions, external events and other factors; an interdisciplinary and holistic outlook; and a sense of self-worth combined with a respect for other individuals and cultures.
- **Pedagogy:** Pedagogy should be based on meaningful, rather than token, empowerment, participation and ownership. Action research and experiential and cooperative learning should be part of pedagogy. And it should aim at developing eco-literacy and political literacy for full and active citizenship. Methodology includes experiential learning.
- **Curriculum:** Values that should be reflected in the curriculum are vertical progression and horizontal integration (inter and trans-disciplinary); development of process, not content; establishing relation between areas more important than the de-contextualized studies.
- **Structures:** The structure and organization focus on democratic decision making process; greening the physical and management of institutions; using institutions as

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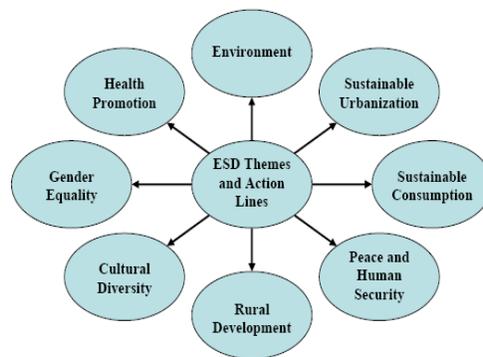
learning center for the whole community; establishing networks and links; teachers and leaders being facilitators rather than authorities and education for life.

To formulate focused action plans and implementation strategies, UNESCO divides ESD domain in eight areas or themes. These are:

- Sustainable Urbanization.
- Sustainable Consumption.
- Peace and Human Security.
- Rural Development.
- Cultural Diversity.
- Gender Equality.
- Health Promotion.
- Environment.

Figure: 6 depict a pictorial representation ESD and its focal themes. These themes are supplementing each other in order to achieve overall human development in all countries. Among these focal themes, some themes are already promoted in India. There is strong presence of advocacy, campaign, lobbying and outreach activities in India for the themes like environment education, health promotion, gender equality, rural development and sustainable urbanization. Other themes such as sustainable consumption, peace and human security and cultural diversity, are relatively new to the country thus need more concerted efforts to promote them with activities like policy formulation, standardization, outreach, sensitization and awareness rising.

Figure: 6 Education for Sustainable Development (ESD) and its Focal Themes



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The State of Art: Global and Indian

Amartya Sen observes “*The first - and perhaps the most basic issue (is) the fact that illiteracy and innumeracy are forms of insecurity in themselves. Not to be able to read or write or count or communicate is a tremendous deprivation*”.

This is the age in which literacy has gone beyond pedagogy and comprehension to technological power, where on the one hand the notion of global village is no longer an abstraction with transactions taking place electronically through cyber space and in India with best of intentions for IT introduction is struggling to provide minimum facilities to the formal schools, four walls with a roof to non-formal and alternative education centers and teaching relevant vocational skills at Jan Shikshan Sansthan or providing meaningful continuing education in the Continuing Education Centers as well as quality material production in State Resource Centers for Adult Education.

Current scenario: A cursory look

- Today, the rich one-fifth of the world’s people consumes some 75-80 percent of world resources and generate the most pollution, both absolute and in relative terms.
- If all people alive to-day were to have rich world’s per capita oil consumption, the world oil production would have to be about 5 times more. If this increases exponentially with the increase in population, oil reserves will run out by 2050.
- It is estimated that up to 100 species become extinct every day. One estimate indicates that about 40,000 species were lost by the year 2000 (a rate far exceeding any in the last several centuries).
- In one example using the ‘footprint’ analysis, “it has been estimated that to provide one person living in Sydney with water, settlement area, energy and food requires at least 4 to 5 hectares of productive land. Therefore, if 9 billion people were to live as they do in Sydney, we would need about 40 billion hectares of productive land. However, this is approximately 6 times all the productive land area of the planet.”
- Another estimate suggests that, if the world pushes ahead to the consumption levels reached in the US today, we would need about 5 or 6 more earths. Though certainly not exhaustive, the figures cited above are indicative of the direction human society is moving. The essential elements of the current scenario is that, despite substantial progress in various areas, (a) population continues to grow, (b) poverty has not diminished, but increasing, (c) inequalities between the rich and the poor are widening, and (d) the environment is being pushed beyond its limits. This situation becomes even more pronounced with the rising tide of globalization. It also indicates that the consumption and production patterns of the present generation are endangering the survival of future generations, both human and non-human life forms. Such a situation has created much concern locally, nationally and globally.

Need for New Ethical Education:**Education for Sustainable Development in India:
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New values and ethical standards never arrive in abstract. They arise in view of new realities and new understanding of the world. We should realize that our society has become an accumulation of self-centered desires that threaten the life-support system of Mother Earth. We should also realize that our lifestyles based on ever increasing materialistic consumption could be changed gradually by inculcating or embracing new values and ethics. As education is basic to recognizing new values, acquiring and clarifying new concepts and relieving these in our individual and social behavior, our response to the need for sustainable development must be based on new kind of education. Thus new values and ethics should be ingrained in our educational system; thinking and acting for sustainable development must stem from mass education. In short, our educational systems will need to reform, innovate and focus towards sustainability. Conventional methods of teaching and learning will not meet the needs for sustainable development. Only through re-orienting towards new ethical education will human society be able to achieve sustainable development. The following **Table: 3** give the Sustainability Appraisal Grid for HEIs as regards their usage of various resources.

Table: 3

Sustainability appraisal grid illustrating what a higher education institution might do to contribute to sustainable development

What can the university (or activity) do to enhance the "stock" of the following resources or "capitals"?	Three ways in which a university manifests itself		
	As a business	As a place of learning and research	As a key member of the community
NATURAL The resources and services provided by the natural world	1. Use resources efficiently - Reduce energy and raw material use - Drive waste out of the system	2. Develop the new economy - Exploit teaching, research, business development opportunities in low-carbon, high human creativity economy	3. Conserve, enhance the environment - Subscribe to low-impact travel schemes - Increase biological mass and diversity (on campus and locally)
HUMAN The energy, motivation, capacity for relationships and intelligence of individuals	4. Attract and keep good staff - Create community of purpose for staff, students, other stakeholders - Be a values led organisation - Ensure healthy working culture and physical environment - Be active on diversity	5. Provide good student experience - Be a values led organisation - Ensure healthy working culture and environment - Enhance employability of graduates - Ensure sustainability literacy for all	6. Promote Lifelong learning - Mix on/off campus learning experiences for both students and community (work-based learning) - Clear learned paths in and out of higher education – from school, further education, work, non-working
SOCIAL The social groupings that add value to individuals (e.g. families, communities, parliaments, universities)	7. Provide good governance, management - Ensure clarity and coherence in strategic planning and well trained managers - Modernise charters, decision-making systems to ensure transparency and democracy	8. Anticipate future markets for graduates - Articulate and meet 21 st century challenges through teaching, research, knowledge transfer - Promote a vision of future that engages new generations - Prepare graduates for multi-	9. Respond to other policy agendas - Ensure equal opportunities/access, and other human rights - Understand employer demand in context of future needs - Renew purpose of HEI - Provide leadership for society in

		disciplinary approaches to problem solving	complex, rapidly changing times - Higher education to set as well as respond to agendas
MANUFACTURED The "stuff" that exists already – buildings, railways, etc. Can it be used in a way that requires fewer resources and more human creativity?	10. Demonstrate best value in use of estates - Ensure building design, refurbish, all estate management is best practice and for environment - Forge local partnerships (e.g. renewable energy generation)	11. Excellence in research and teaching - Integrate student learning with campus improvement, and community experience - Sustainability research/consultancy - Encourage innovation for sustainable design solutions	12. Promote community relations, outreach - Share sports, library, other facilities - Build portfolio of joint ventures for student, staff and local residents - Sustainable transport partnerships
FINANCIAL The money and stocks that enable us to put a value on, and buy and sell, the above resources. Are there ways that financial value can more accurately represent the real "cost" of using these resources?	13. Save money/be efficient - Use whole life costing - Invest ethically (e.g. pensions) - Provide incentives for adding value to physical resources	14. Compete internationally/regionally - Structure internally and make relationships to facilitate ideas-innovation-implementation process - Export models and programmes	15. Modernise risk management - Report on environment and social impacts as well as financial - Use procurement strategies to support local markets and ethical trade

Source: Higher Education Partnership for Sustainability and Forum for the Future (2003) *Reporting for Sustainability: Guidance for Higher Education Institutions*.

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Millennium Development Goals (MDGs):

During United Nations Millennium Summit in 2000, 189 world leaders made historic promise to meet the Millennium Development Goals (MDGs), which are international development goals for improving social and economic conditions in the world's poorest countries. MDGs are placed in actions in collaboration with all UN agencies, several international NGOs, national legislators, policymakers and development practitioners in various countries having below average human development index. The eight MDGs are:

1. Eradicate Extreme Poverty and Hunger.
2. Achieve Universal Primary Education.
3. Promote Gender Equality and Empower Women.
4. Reduce Child Mortality.
5. Improve Maternal Health.
6. Combat HIV/AIDS, Malaria and other Diseases.
7. Ensure Environmental Sustainability.
8. Develop a Global Partnership for Development.

Solution Exchange activities are specifically designed for intervening and achieving MDGs across states of India as well as in South Asia. Solution Exchange is divided into 13 communities or e-mail based discussion forums as shown in **Table: 4** below. Each community serves at least one MDG. On the other hand, one MDG can have one or more Solution Exchange communities, as indicated in **Table: 4**, for the achievement of specific goal by year 2015. **Table: 4** also show that Solution Exchange Communities in India serve several ESD themes in order to achieve thematic priorities of each theme.

India has witnessed a height of advocacy, lobbying, campaign, and even judiciary activism in the areas of inclusive education, right to education and Education for Sustainable Development (ESD) before these are being formally adopted in different legislative forms. The *Right of Children to Free and Compulsory Education Act* or **Right to Education Act (RTE)** was passed by the Indian parliament on 4th August 2009 and it came into force on 1st April 2010. India became one of 135 countries to make education a fundamental right of every child at the time of its introduction. The Act describes the modalities of the provision of free and compulsory education for children between 6 and 14 in India. This is one such Acts that is associated with a long social movement with a rigorous process of lobbying, campaign and advocacy by the groups of activists, social workers, practitioners and other stakeholders. To supplement mandates of right to education, Government of India initiated a flagship programme named 'Sarva Shiksha Abhiyan' (SSA) for achievement of Universalization of Elementary Education (UEE) in making free and compulsory education to the children of 6-14 years age group. This is a national programme interlinked with UNESCO's Education for All programme at the global level. SSA is targeted at expansion of inclusive and vocational education without compromising their quality. SSA reaches out to school dropouts, marginalized communities and nomads through a dedicated network of education providers across state and district level. SSA also utilizes facilities and

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infrastructure of existing schools in districts for achieving its targets. The RTE Act as well as SSA has made provision of 'No School without a Library' along with other basic infrastructures in a school. Universalization of primary education essentially will enhance social demand for universal access to information and knowledge. Thus this Act has paved way for another social movement 'every village a library', or 'every village a knowledge resource centre' in a refined form, for fostering universal access to information and knowledge.

Table: 4 Solution Exchange Communities in India

Sl. No.	Name of Community	Related MDG	Related ESD Theme	Facilitating Agency	Launched In
1	AIDS	Combat HIV/AIDS, malaria and other diseases	Health Promotion	UNAIDS	July 2005
2	Climate Change	Ensure environmental sustainability	Environment; Sustainable Urbanization; Sustainable Consumption	UNDP	October 2009
3	Decentralization	Eradicate extreme poverty & hunger	Peace and Human Security; Rural Development; Sustainable Urbanization	UNDP	July 2005
4	Disaster Management	Ensure environmental sustainability	Sustainable Urbanization; Environment	UNDP	April 2007
5	Education	Achieve universal primary education	All ESD themes	UNESCO & UNICEF	August 2005
6	Food & Nutrition Security	Eradicate extreme poverty & hunger	Rural Development; Sustainable Consumption	FAO and Nutrition Foundation of India (NFI)	June 2005
7	Gender	Promote gender equality and empower women	Gender Equality	UNIFEM and UNICEF	June 2005
8	ICT for Development	Develop a global partnership for development	All ESD themes	UNESCO and UNDP	November 2006
9	Maternal & Child Health	Reduce child mortality, improve maternal health	Health Promotion	WHO, UNICEF and UNFPA	April 2005
10	Microfinance	Eradicate extreme poverty & hunger; Promote gender equality and empower women	Peace and Human Security; Rural Development; Gender Equality	UNDP and ILO	October 2006
11	Water	Ensure environmental sustainability	Environment	UNICEF and UNDP	June 2005
12	Work and Employment	Eradicate extreme poverty & hunger	Peace and Human Security	ILO and UNDP	October 2005
13	Karnataka (Bilingual)	All MDGs	All ESD themes	UNICEF Hyderabad	November 2008

In addition to the possible dichotomy between sustainable development and social progress National Knowledge Commission recognizes importance of knowledge sharing platforms for diffusion of subject-based knowledge and information to the practitioners, grassroots workers, policymakers, legislators, academicians, students as well as common citizens.. These portals have become a collaborative platform on the respective subject in addressing development challenges and achieving the Millennium Development Goals (MDGs). The important knowledge portals, conceived by NKC and implemented by its partner organizations, are:

- India Biodiversity Portal
- Teachers of India Portal
- India Environment Portal
- India Energy Portal
- India Water Portal:

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- India Development Gateway (InDG)
- Sakshat

Strategies for Future Education:

Promoting a strategy for Education for Sustainable Development covers such areas as: poverty reduction, citizenship, peace, ethics, responsibility in local and global contexts, democracy and governance, justice, security, human rights, health, gender equity, cultural diversity, production and consumption patterns, corporate responsibility, environmental protection, natural resource management and biological and landscape diversity. The strategy requires that Member States look at education in schools and at further and higher level, the non formal sector, including youth work and adult and community based learning media awareness, training of business people and professionals, and education across the population generally, particularly for workers, farmers, and employers. Issues such as training of teachers, development of curriculum materials, research, awareness promotion, and policies and actions to promote sustainable development need to be examined. The objective of the Strategy is to incorporate the key themes of sustainable development in all education systems.

Key elements in an ESD Strategy:

ESD demonstrates characteristics such as:

- Being **interdisciplinary and holistic**: learning for sustainable development embedded in the whole curriculum, not as a separate subject;
- Being **values-driven**: sharing the values and principles underpinning sustainable development;
- Requiring the skills for **critical thinking and problem solving**: leading to confidence in addressing the problems and challenges of sustainable development;
- **Involving multi-method approaches**: word, art, drama, debate, experience, and other different teaching methods which model the processes;
- Requiring **participatory decision-making**: learners participate in decisions on how they are to learn;
- Being **locally relevant**: addressing local as well as global issues and using the language that learner most commonly use.

The four priority areas of action for the Decade of Education for Sustainable Development aim to:

- Promote and improve basic education;
- Reorient and revise existing education programs;
- Develop public understanding and awareness of sustainability;
- Provide practical training.

Policy Measures:

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The strategies envisaged here are anticipated to improve competence in the education sector, enhance its impact in the target area, and explore the scope for its extension and consolidation through the following **policy measures**:

- **Sensitization:** Active advocacy at the mass level to increase public awareness on education-related issues and mobilization of resources through talks, seminars, and use of media and publication.
- **Enablement:** Efforts at capacity building of professionals and to increase human capital through courses, trainings, and workshops.
- **Entitlement:** Effective use of legislation, enforcement, and adjudication measures to implement laws, rules, policies, programs, and decisions made.
- **Empowerment:** Focusing on concrete and empirically measurable improvement in the professional competence of individuals, agencies, and organizations through the increased level of collaboration and solidarity building.
- **Mainstreaming:** Targeting and channelizing the new generations (children and youth) in an inclusive manner, and also women, disadvantaged groups, and minorities as well as communities at the local level.
- **Re-enforcement:** Strengthening the capacity building of the key educational agencies, organizations, and institutions by consolidating their policy, decision-making, and implementation mechanism focused on the promotion of a healthy self-through civic, security, and scientific education.
- **Networking and Synergizing:** Linking the stakeholders at the local, national, regional, and global levels in a coordinated framework of proactive communication, creative interaction, and productive collaboration for sustained flow of the resources and assistance needed in the education sector and integrating the educational policies. Also, development of programs and activities with other existing and upcoming initiatives in the field at home and abroad.
- **Environmental Mathematics and Ecological Economics:** Economic thinking ... is peculiarly unable to consider the long term and to appreciate man's dependence on the natural world.
- **Ecologically Inclusive Scientific Literacy:** Scientific literacy may likely determine whether or not democratic society will survive into the 21st century.
- **Environmental History:** The historians, even when articulating world history, deal not with the whole world but just with the human, as if the human were something separate from or an addendum to the story of the Earth and the universe.
- **Flexible Education: The Key to Learning- An Integrated and Sustainable Model**
 - **The Radicalization of Education:** The radicalization of education began with Distance Education which graduated from print technology to media technology. Subsequently, technology has been integrated with printed material and audio-video conferencing which came to play a vital role in education, where students sitting at a distance can interact with peer groups and teachers.

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- **Adult and “Continuing” Education:** This is not a myth today, but a vibrant reality. The world of work and the world of education have a very close and intimate connection.
- **Distance Education, Open Education and Flexible Learning:** The terms distance, open and flexible in the context of education can be used and are used synonymously and interchangeably.

Challenges to ESD & Enablers

Everyone, who has somehow shaped change at an HEI knows, change is possible, and it does happen. Because HEIs advance knowledge, they enable change. The academic freedom of HEIs allows critical discourse of current knowledge and practices. This freedom of discourse enables the changes necessary to reorient education to address sustainability. It allows faculty members to scrutinize curriculums, programs, practices, and policies of their institutions and the surrounding society and make small or sweeping changes. Two other enablers of change in HEIs are **time and funding**. Released time from traditional responsibilities – teaching, advising, supervising student teachers, and committee work – frees faculty to focus their attention on planning and implementing change. Funding also enables change. Funding for faculty-released time, allows them to concentrate their efforts on planning and implementing change. Funding also provides resources (e.g., publications, Web access, and materials) that make program development easier. The lists of challenges to implementing sustainable development in HEIs and HE were analyzed to identify common themes. The most frequently cited challenges can be summarized as:

- Lack of strategic leadership in HEIs and government.
- Low demand from most internal and external stakeholders, including students and employers.
- Academic and professional silos which inhibit cooperative efforts across disciplines and institutions.
- Poor communication within the HEI regarding the meaning and concept of sustainable development and how it applies.

Whereas the list of challenges seems to focus on what might be considered traditional challenges to organizational change (such as funding, time and capacity), the opportunities listed capture a range of innovative and creative opportunities for HE. These opportunities are a mixture of local connections and concerns and larger global issues such as the global significance of climate change. The opportunities include:

- Inter-disciplinary nature of research in sustainable development.
- Demand from internal and external stakeholders, including students and employers.
- Zeitgeist – primarily attributed to climate change, but also progressive awareness of other sustainability issues.
- Collaborations/partnerships to work together.
- Networks to learn from each other.

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- A proactive unit or an individual within the HEI driving sustainable development with a clear plan.

Challenges to Teacher Education Reorientation:

Some of the more prevalent challenges reported by members of the International Network for reorienting teacher education to address sustainability fell into the following categories:

Institutional Awareness, Support, and Resources

- ❖ Official national and provincial curriculum rarely mandate sustainability
- ❖ Teacher certification guidelines do not mention sustainability
- ❖ Lack of or inadequately trained professionals who are knowledgeable about ESD
- ❖ Lack of or inadequate funding and material resources
- ❖ Lack of or inadequate national, provincial, and local policy to support ESD
- ❖ Lack of or inadequate institutional climate that supports the creativity innovation, and risk-taking necessary to support transformative efforts to reorient education to address sustainability
- ❖ Lack of or inadequate reward for institutions or faculty members who undertake ESD programs

Prioritizing Sustainability in the Educational Community

- ❖ Lack of or inadequate awareness of importance of ESD
- ❖ Lack of knowledge of ESD complicated by the lack of access to in-service training related to ESD
- ❖ Lack of support from the ministries of education

Reforming Education Systems and Structures

- ❖ ESD is not part of ongoing educational reform
- ❖ Prevalence of traditional disciplinary curriculum frameworks makes incorporating sustainability, which is trans-disciplinary, arduous

Establishing and Sustaining

- ❖ ESD programs are often developed without local community participation or involvement of other stakeholders leaving the program without local context or relevance
- ❖ Lack of coordination of efforts between ministries of environment, education, health, agriculture, etc

In comparing the challenges and opportunities, the overlaps between them become apparent. Employer and student demand is seen as a potential opportunity to influence innovative teaching styles, course offerings and degree requirements, but is obviously not providing the drive needed for sustainable development as its absence is also cited as a challenge.

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GUIDELINES AND RECOMMENDATIONS:

Recommendations on Ministerial and National Involvement

- Work with ministries of education to make ESD a mandatory part of elementary and secondary education at national and provincial levels.
- Work with ministries of education to revise teacher education and certification requirements to include ESD and to align these revisions to correspond to the ESD components of elementary and secondary education.
- Work with the ministries of education to create policy to support ESD.
- Work with the ministries of education to create professional development programs related to ESD for teacher educators.
- Engage teacher unions and national certification boards in the conceptual development and implementation of ESD.
- Develop a strong national coordination team for ESD that includes professional organizations and issue-related educational organizations (e.g., consumer education, environmental education, and equity education) to integrate their work with institutional ESD initiatives through cooperation, collaboration, and sharing of ideas.
- Work with national publishers and textbook committees to infuse sustainability into textbooks at all levels.

Recommendations on Community and Regional/Provincial Involvement:

- Make use of community resources (e.g., NGOs, institutions, clubs, religious organizations, government agencies, businesses, etc.) in the teacher education program, both within and outside the classroom, to teach about local sustainability issues, efforts to address these issues, sustainable practices, and sustainable businesses.
- Establish new models of professional development in ESD that draw together essential skills, cross-curricular approaches, and action-based learning models so that student teachers and in-service teachers can work on projects that are relevant and important to their communities' future well-being.
- Establish regional teacher-education groups to develop sustainability-related modules and relevant literature, which should be made available on a regional scale.
- Develop strong regional consortium teams that allow educators from a range of sustainability-sector groups outside your organization to come together to support teacher-education initiatives.
- Establish partnerships among universities to ensure ESD becomes the norm rather than an experiment or an isolated case and hence easily eradicated.

Recommendations on change within Institutions of Higher Education:

- **Recommendations on change across institutions of higher education:**
 - Promote reorienting education as a viable avenue for research and teaching in higher education institutions.

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- Gain support of upper administration in the forms of mandates and resources to assist those who are working in ESD at lower levels.
 - Involve faculty, support staff, researchers, and managers from across the institution to support interdisciplinary changes that reflect sustainability and reward participation in such efforts.
 - Allow interdisciplinary courses in sustainability to fulfill degree requirements across disciplinary faculties.
 - Create a sustainable-campus policy and conduct highly visible events that reinforce campus efforts to implement that policy
 - Engage student groups and organizations.
- **Recommendations on change within faculties of education:**
 - Make the administration and faculty leaders aware of the need for reorienting the teacher-education program.
 - Provide educational opportunities to ensure that every member of the faculty of education understands the need for ESD, how it is relevant to teacher education in both improving quality basic education and reorienting existing education, and how each faculty member can contribute to the overall effort.
 - Set up a participatory and democratic process involving every part of the faculty of education (i.e., faculty, staff, administration, research faculty, school liaisons, students, etc.) to reorient teacher education to address sustainability.
 - Move quickly to institutionalize new ESD projects, so the progress will continue in spite of frequent changes in faculty, administration, or funding that endanger new projects and innovative undertakings.
 - Lobby within the faculty for ESD at times of program review and renewal.
 - Recognize and reward academic effort and administrative leadership, especially when it is voluntary and above and beyond the regular requirements.
 - Describe for the teaching faculty the contribution that the reorienting process can make to their graduates.
 - **Recommendations on change related to engaging pre-service and in-service teachers:**
 - Require interdisciplinary coursework on sustainability for student teachers and make materials available for student teachers on local and global sustainability issues.
 - Demonstrate pedagogical techniques that foster higher-order thinking skills, support decision-making, involve participatory learning, and stimulate formulation of questions.
 - Emphasize to student teachers that citizenry in a sustainable community requires active participation and decision-making; challenge them to create ways to incorporate participation and decision making into their classroom procedure and curriculum.

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- Discuss social equity (e.g., gender, racial, ethnic, and generational) with student teachers and identify ways in which the local community exhibits social tolerance, societal intolerance, equity, and discrimination.
 - Request that student teachers analyze the mandated curriculum they will be teaching to identify topics and themes related to sustainability and those that are linked to local sustainability issues.
 - Provide student teachers with opportunities to explore their own values and attitudes towards local sustainability problems and those of the surrounding region.
 - Promote understanding of global sustainability in order to encourage critical thinking and decision making that influence personal lifestyle and economic choices.
 - Develop specialized ESD programs for student teachers (e.g., mini-courses) with certificates of completion, so that student teachers can include them in their resumes for seeking employment.
 - Promote graduates with ESD specializations, who are knowledgeable in ESD and its contribution to society.
 - Place graduates who have completed courses in ESD in key schools and ministerial positions to help influence and bring about change.
- **Recommendations at the individual faculty member level:**
 - Begin by working within your own sphere of influence; change the things within the areas that are under your individual authority.
 - Build partnerships; work closely with at least one colleague to ensure continuity and mutual support.
 - Document work for ongoing reflection and evaluation.
 - Attend ESD conferences with colleagues, student teachers, and graduate students to update knowledge and maintain enthusiasm for ESD projects.
 - Learn basic grant writing skills.
- **Recommendations on Funding and other Resources:**
 - Work with ministries of education to redirect existing funding to address ESD.
 - Seek new sources of funding through grants, contracts, and sponsored research.
 - Collaborate with NGOs and environmental and social foundations.
 - Seek assistance from institutional units that support grant and contract acquisition.
- **Recommendations on partnerships:**
 - Strengthen partnerships between teacher-education institutions and elementary and secondary schools, and such educational organizations as museums, outdoor education sites, and nature centers.
 - Strengthen local, regional, and international networks by sharing ideas, experiences, and materials and maintaining the vision of a sustainable world.

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- Work within national and international networks to help overcome difficulties and barriers at institutional and governmental levels.
- Set up north-south and south-south cooperation and solidarity mechanisms around ESD to share experiences.
- **Recommendations on Research:**
 - Create a research agenda to address important questions, such as the effectiveness of faculty efforts to reorient education to address sustainability.
 - Review and revise the theoretical framework underpinning of ESD as society and the concept of sustainable development evolve.
 - Increase research on quality teaching and learning approaches for ESD to help learning become more transformative in nature.
 - Conduct research on assessment standards and measures of performance for ESD to increase importance and credibility within the institutional assessment system.
 - Develop strong research-based arguments – to present to academic boards to show that ESD is a crucial re-orienting framework for education for the future.
 - Conduct research on economic costs and benefits of reorienting pre-service teacher education to address sustainability as well as providing professional development for in-service educators.
 - Conduct research on economic costs and benefits of introducing ESD in elementary and secondary curriculum compared to the costs and benefits of other educational reforms.
 - Develop research designs, methods, and techniques that focus on student learning results and yield applicable and meaningful findings.
 - Conduct school-based longitudinal studies using student work samples to determine the impact of ESD curriculum on student learning results.
 - Conduct research to establish and strengthen an open-ended research agenda to inform and strengthen key areas of ESD practice in Teacher Education for example curriculum change; participatory action research; auditing of institutional resource management and sustainability practices, etc.
 - Conduct research to establish and strengthen a vibrant ‘community of practice’ in teacher education, which strengthens the teaching and research capabilities educators involved in ESD.
- **Recommendations on communications:**
 - Document successful ESD programs that have reoriented teacher education to address sustainability.
 - Publish and disseminate this work.
 - Develop a recognition system for institutions of teacher education and elementary and secondary schools involved with ESD.
 - Submit articles on education for sustainability to journals, which usually do not address sustainability.
 - Present research and project reports to disciplinary professional organizations and educational organizations at local, regional and national conferences.
 - Work with mass media to disseminate ESD successes and sustainable development concepts.

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- **Recommendations on Information Technology Opportunities:**
 - Develop guidelines for using information technology related to ESD.
 - Develop guidelines for incorporating ESD into online and distance learning courses.
 - Provide professional development opportunities for teacher educators to use information and communication technologies (ICT) to provide professional development about ESD to in-service teachers who work in locations distant from campus.
 - Study the use of ICT to match student preferred learning styles and modalities (e.g., especially students from oral-based cultures whose preferred learning modality is listening, not reading).

Concluding Remarks:

One could say for certain that no individual, community and nation can survive in isolation from rest of the world. The contemporary era demands everyone to come under one umbrella "GLOBALISATION" with incorporation of a wide range of educational, social and welfare programs, the purpose of which is improving quality of life and sharpening life skills for sustainable development, otherwise the entire race will recede into the darkness of ignorance.

Education and social responsibility have an inextricable linkage as education impacts directly upon society for social development. Today, if we are talking about a knowledge based economy, then it is one of the mandates of education to augment economic self reliance. Vocational education and partnerships and consortia between the Govt. and community based organizations is the right pointer towards such an objective. If education becomes solely utilitarian and profit oriented, then it is crassly sacrificed at the altar of expediency and mercenary motives. This, as educators, we must be aware of. Education and its sustainability is an exemplification of how education can touch the masses and not only the classes. The very fact that Corporate Houses are looking at education in more ways than one, in the form of establishing schools and in terms of vocational education; becomes a pointer to the Corporate Social Responsibility (CSR) dimensions of education. Education can have a sustainable model only when the entire gamut of society realizes its social responsibility aspect towards it.

India needs to develop its education system at various levels by adopting the strategies towards the sustainable development. We need new processes, less oriented to instruction and more oriented to action for sustainability – and why there needs to be more emphasis on working with adults here and now to change how we go about our lives. This entails assurance for economic and social development for mankind, leading to improved quality of

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life, also benefiting the generation to come, thus making teams to contribute for sustainable development of a nation and its future generation.... towards which India has already began its journey through small initiatives and efforts.

REFERENCES

- Abdul Kalam, A.P.J. and Rajan, Y.S. (2000). *India 2020: A Vision for the New Millennium*. New Delhi: Penguin Books India.
- Ashford, Nicholas (2000), "An Innovation-Based Strategy for a Sustainable Environment", in Innovation-Oriented Environmental Regulation: Theoretical Approach and Empirical Analysis, J. Hemmelskamp, K. Rennings, F. Leone (Eds.) ZEW Economic Studies. Springer Verlag, Heidelberg, New York, pp 67-107. Washington, DC: U.S. Government Printing Office. [ED 403 158].
- Ashford, Nicholas (2004), "Major challenges to engineering education for sustainable development: what has to change to make it creative, effective, and acceptable to the established disciplines" *The International Journal of Sustainability in Higher Education*, 2004.
- Bhandari, Bishnu B. and Osamu Abe.(2003), "The ABC of ESD". A paper presented in the International Seminar on Wise Use and Conservation of Mangrove in Southeast Asia, jointly organized by Forestry Department, Universitie Brunei Darussalam,
- Cleveland, C.J. and I. Kubiszewski (2007), United Nations Conference on Environment and Development (UNCED), Rio de Janiero, Brazil", *Encyclopedia of Earth*, Retrieved 16 March 2009
- Fien, John. 1993. *Education for the Environment: Critical Curriculum Theorising and Environmental Education*. Victoria: Deakin University Press.
- Hesselink, Frits; Pert Paul van Kempen and Arjen Wals. 2002. *ES Debate: International Debate on Education for Sustainable Development*. Gland: IUCN Commission on Education and Communication (CEC).
- Murthy, N.R. Narayana (2009). *A Better India, A Better World*. New Delhi: Penguin Books India. *Millennium*. New Delhi: Penguin Books India.
- Nilekani, Nandan (2009). *Imagining India: Ideas for the New Century*. New Delhi: Penguin Books India.
- PCSD. (1996). "Education for sustainability: An agenda for action." The Proceedings of the "National Forum on Partnerships Supporting Education about the Environment,". Washington, DC: U.S. Government Printing Office. [ED 403 158].
- Saul, D. (2000) 'Expanding Environmental Education: Thinking Critically, Thinking Culturally' *Journal of Environmental Education* Vol. 31 No.2 pp.5-7.
- Sitarz, D. (Ed.). (1993). "Agenda 21: The Earth Summit strategy to save our planet." Boulder, CO: EarthPress.
- Tilburry, Daniella, Robert B. Stevenson, John Fien and Danie Schreuder. 2002. *Education and Sustainability: Responding to the Global Challenge*. Gland: IUCN Commission on Education and Communication (CEC).
- Tilbury, D. (1995). "Environmental education for sustainability: Defining the new focus of environmental education in the 1990's." *Environmental Education Research*," 1(2), 195-212. [EJ 509 039]

Education for Sustainable Development in India: Problems and Prospects

United Nations. (1992) *Earth Summit: Agenda 21* (The United Nations Program of Actions From Rio). New York: United Nations Department of Public Information.

Wheeler, Keith A. and Anne Perraca Biju (editors).2000. *Education for a Sustainable Future: A Paradigm of Hope for the 21st Century*. New York: Kluwer Academic/Plenum Publishers.