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SUSTAINABLE DEVELOPMENT & ENVIRONMENTAL ISSUES

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ABSTRACT

Great ideas are simple while the specific analysis of any topic makes it complex. Those ideas which affect the policies of nations and lives of millions of people must be accessible to all and not just to an elite class. Only then, these ideas can permeate from local to global and become a part of human landscape. This is the concept of development. World Commission on Environment and Development (1987) defined sustainable development as development which meets the needs of the present without compromising the ability of future generations to meet their own needs. There are three aspects of sustainable development: Economic, Environmental and social. It raises the issue of how to balance these three aspects and judge the success or failure. These three aspects have resonance at a common sense level. Thus, there is need to examine the problem from different disciplinary perspective and the goal require the insights of multiple disciplines. The concept of sustainable development must address the social inequalities and environmental degradation along with economic growth. Natural capital must be conserved through integration of ecosystem and maintaining the diversity of species,

social equity, the fulfilment of basic health and educational needs, participatory democracy are integrated elements of development and are related with environmental sustainability. Thus, there is need to establish a reasonable balance between the desired goals and the available means and resources.

KEYWORDS: Sustainable development, Environment.

INTRODUCTION:

Economic growth is the indicator of progress, development and modernisation among the developed countries, however, little emphasis

has been given to social justice & equity. This concept of development faced two major criticisms:

- Fruits of development reached the rich people widening the gap between rich & poor people.
- Development caused major negative impact on the environment disturbing the ecological imbalance. This adverse impact on environment may endanger the existence of humanity & biosphere.

World Bank President James Wolfensohn and chief economist Josef Stiglitz acknowledged in 1999 that these issues are crucial to address if global development is to succeed. Norgaard (1994) have given the following comments:

Modernism, and its more recent manifestation, have



betrayed progress..... while a few have attached material abundance, resource depletion and environmental degradation now endanger many and threaten the hopes of all to come..... Modernism betrayed progress by leading us into, preventing us from seeing and keeping us from addressing interwoven environmental, organisational and cultural problems.

This lop-sided development has forced us to review the definition of development and coined another term known as sustainable development. This development protects the environment, caters to social justice and maintains the balance among different sub-systems or welfare of humanity.

Sustainable Development: Defining a new paradigm

World commission on Environment and development has defined sustainable development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

Holmberg (1992) and Reed (1997) have recognised three aspects of sustainable development as

- **Economic:** An economically sustainable development must be able to produce goods and services on a continuing basis so that manageable levels could be maintained for government and external debt. It will help to avoid extreme sectoral imbalances that may cause agricultural or industrial production.
- **Environmental:** Natural resources must be maintained through environmentally sustainable system. This avoids over-exploitation of renewable resource system on environmental sink functions, and save the depleting non-renewable resources to the extent that investment is made in adequate substitutes. It promotes the maintenance of biodiversity, atmospheric stability, and other ecosystem functions not ordinarily classed as economic resources.
- **Social:** Social equity is the hallmark of sustainable development which promotes distributional equity, adequate provision of social services like breadth and education, gender equity, and political accountability and participation.

Balancing these economic, environmental & social aspects

These three elements of sustainable development are at loggerhead with each other. It raises the issues of maintaining balance among these three elements. For instance, scarcity of food requires the change of land, disturbing the biodiversity, damaging the environment through the use of machines and chemicals and widening the gap between rich and poor. Use of non-polluting energy is more expensive and may put burden on poor, which goal will-take precedence? Richard Norgaard points out, we can "maximise "only one objective at a time. Norgaard concludes that "It is impossible to define sustainable development in an operational manner in the detail and with the level of control presumed in the logic of modernity, Despite this, the three principles of sustainable development do have resonance. This can be achieved by moving closer to tripartite goal which will make the world a safer place to live. It is easy to identify unsuitability as compared to sustainability which motivates us to take necessary policy action.

Each of the three systems has their own logic and must be analysed separately. Balata Group's report on sustainability indicators emphasised seperate analysis as:

The total system of which human society is a part, and on which it depends for support, is made up of a large number of components systems, The whole cannot function properly and is not viable and sustainable if individual component systems cannot function properly.... sustainable development is possible only if component systems as well as the total systems are viable. Despite the uncertainty of the direction of sustainable development, it is necessary to identify the essential component systems and to define indicators that can be provide essential and reliable information about the viability of each and of the total system. (Bossell. H., 1999).

It can be concluded that different indicators can be used to test different dimensions of sustainability. Let us now examine the different disciplinary areas in this regard.

The Economic Perspective

Neo classic economic theorists defines sustainability in terms of the maximisation of welfare over time (only human and not ecological or non-human). Most economist states that maximisation of welfare means maximisation of utility derived from consumption. It includes several important elements of human welfare i.e. clothing, housing, transportation, health and education services etc. It has the potential of reducing the problem to measurable single-dimensional indicators. The economic analysis infers that sustainability is efficient resource allocation. Thus much resource depletion and environmental damage is acceptable and optimal, according to the criterion of economic efficiency, The problem is that in accepting the use of a discount rate, we have implicitly imposed a specific choice regarding the relative welfare of present and future generations (Harris, 2000), Howarth and Norgaard (1993) have shown that the choice of a discount rate is equivalent to a choice of allocations among generations, The concept of current market discount rate emphasises only on current consumers without any concern for future generations. Thus, the problems of soil erosion or increase in greenhouse gases are not addressed. The impact of this environmental damage will be felt by future generations. Thus, to achieve intergenerational equity, we must either impose a low discount rate (William, 1992) or some kind of sustainability rules should be framed for resource use and environmental impact.

We must be equally concerned with natural capital like soil and atmospheric functions. Daly (2004) suggested that sustainable development can be operationalised in terms of the conservation of natural capital. It leads to the judicious use of renewable and non-renewable resources. For non-renewable, the rule is to limit resource consumption to sustainable yield levels; for renewable the rule is to re-invest the proceeds from non-renewable resource exploitation into investment in renewable natural capital (Harris, 2000). Implementation of these two rules will provide a constant stock of natural capital. To maintain a constant per capita stock of natural capital also requires a stable level of human population, a factor which Daly has also emphasised (Daly, 1994). Daly argues that "man-made and natural capital are fundamentally complements and only marginally substituted" Michael Toman (1992) has suggested that the issue may be resolved by recognising that some issues can be appropriately dealt with through neo-classical market efficiency, while others require the application of a "safe minimum standard" approach to protect essential resources and environmental functions. He suggests that the criteria of possible severity and irreversibility of ecological damages should be used to decide which theoretical framework is most appropriate:

The concept of a Safe Minimum Standard can be applied to concerns about intergenerational fairness, resource constraints and human impact. The safe minimum standard posits a socially determined, albeit "fuzzy" dividing line between moral imperatives to preserve and enhance natural resource systems and the free play of resource trade-off. Following a safe minimum standard, society would rule out actions that could result in natural impact beyond a certain threshold of cost and irreversibility. Central to the safe minimum standards approach are the role of the public decision making and the formation of societal values. The safe minimum standard will be defined differently by ecologists and economists, depending on moral judgement about moral imperatives and the value of discounting (Toman, 1992).

Thus Toman has asserted the importance of sustainability that requires an explicitly normative and socially determined process of decision-making. This shows the basic shift in the economic paradigm. Toman has suggested that an economist must work with social and natural scientists.

There is great scope for interdisciplinary work to address some key issues related to sustainability, including defining objectives, identifying constraints, and resolving the relevant disagreements. Economists could make greater use of ecological information and the implications of physical resource limits in an analysis of resource values. Social scientists can contribute to an understanding of how future generations might have different attributes of natural environment. Ecologists should provide ecological information in a manner that can be used in economic valuation. They should also take into account the role of economic incentives in ecological impact analysis (Toman, 1992),

The Ecological Perspective

Whereas economist work for economic growth, the physical scientists and ecologist argues for limited

use of resources, An ecologist C. S. Holling (1994) put it :

Two of the fundamental axioms of ecological and evolutionary biology are that organisms are exuberantly over productive, and that limits set by time, space and energy are inevitably encountered. The foundations for all modern ecology and evolutionary biology rest in part upon the consequences of these two axioms”

Ecological perspective put limits on population and consumption level. Human welfare is expanding at the expense of other animals and plants. Thus, they must understand the limited resources on this planet, Ecologist Paul Ehrlich et al.(1986) have estimated that humans are now "consuming, co-opting, or eliminating some 40% of the basic energy supply for all terrestrial animals, clearly, a doubling of this demand, as might well be implied by a 33% growth in population (to 8 billion) and a 50% growth in per capita consumption by 2050, would leave little room for any other species on the planet (Harris, 1992).

However, this simple assertion of Holling is not sufficient to maintain sustainability. He has identified a third axiom that has more significant implications. The third axiom "concerns processes that generate variability and novelty" - the generation of genetic diversity and the resultant processes of evolution and change in species and ecosystems. Harris (2000) remarked as:

Genetic diversity gives rise to resilience in ecosystems, Resilience is a "bounce back" capacity which enables a system to respond to disturbances or damage. For example, a forest ecosystem may recover from a pest infestation through an increase in the population of predators which control the pest, an expansion of species unaffected by the belt, and possibly a development of pest resistance in affected species. The pattern of response will be widely variable, but the essential integrity of the ecosystem will be preserved. The key to resilience is the existence of a wide variety of species, interacting with each other and providing a reservoir of genetic forms which provide the potential to adapt to changing conditions".

Then ecologist may define sustainability in terms of maintenance of ecosystem resilience. Therefore, the views of sustainability are different from the human. centred conceptions proposed by the World commission on Environment and Development and the consumption-based principles proposed by economic theorists. This concept has been explored by Common and Perrings (1992), who distinguish between "Solow-sustainability" derived from the economic model of stable or increasing consumption, and Holling-sustainability are largely disjoint. This implies that there may be no close relationship between economic efficiency and ecological sustainability.

All over the world, several instances of failure of ecological resilience has forced us to think about ecological perspective of sustainability. Then ever expanding consumerism due to economic growth has led to generate environmental hazards like creation of dead zones" in coastal waters, sudden climate change, decreasing polar ice cap, increased climate volatility and resurgence of disease due to antibiotic resistance species, As Holling (1994) puts it:

Increasing human populations in the South, and the planetary expansion of their influence, combined with exploitative management in both North and South, reduces functional diversity and increases spatial homogeneity not only in regions but on the whole planet. Functional diversity of the structuring processes and spatial heterogeneity are the two most critical determinants of ecological robustness and resilience, the attributes that provide the reserve of ecological services and of time that have allowed people to adapt and learn in the past. And now these critical attributes are being compromised at the level of planet.

Therefore, sustainability is more than putting limits on population and level of consumption. Thus, there is needed to be oriented towards eco-system integrity and biodiversity. Common and Parrings (1992) suggests that:

An ecological economic approach requires that resources be allocated in such a fashion that they threaten neither the system as a whole nor the key components of the system. For the system to be sustainable, it must serve consumption and production objectives that are themselves sustainable. If existing preferences and technologies, as perpetuated and sanctified in the concept of consumer sovereignty, are not sustainable, then the system as a whole will be unstable. The appropriate policy instruments to address these concerns are varied and complex.... What is important is that an ecological economics of sustainable privileges the needs of

the system over those of individuals.

Thus, there is a need to integrate economics with ecology. This integration can be achieved in an appropriate social context. We can not harp on unregulated market but must turn to conscious social action.

CONCLUSION

The original idea of development was based on a straight line progression from traditional to modern mass-consumption society. Thus, there was a tension between promotion of economic growth and the equitable distribution of wealth. Development has created inequality and exerted negative impact on environment and eco-system. Thus, the concept of sustainable development emerged. Therefore, sustainable development must

- remedy social inequality and environmental hazards along with sound economic base
- conserve the natural capital for future generations. Market mechanism damages the natural capital.
- take the concrete steps to limit the population and consumption level. We must maintain the integrity of ecosystems and diversity of species.
- ensure the social equity and fulfil the basic health and educational needs of the masses. Participatory democracy and environmental sustainability must be interrelated with economic development.

There is a need to develop a new model of development which will address both the original problems of development-limited productive capacity, inadequate nutrition and pervasive poverty. Therefore, new model of sustainable development will also address the problem of resource limitations, environmental stress, and unresolved or growing inequity.

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