



REVIEW ARTICLE

SUSTAINABLE DEVELOPMENT: A PARADIGM SHIFT WITH A VISION FOR FUTURE

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ABSTRACT

Sustainability is a paradigm for thinking about a future in which environmental, social and economic considerations are balanced in the pursuit of development and an improved quality of life. World population is projected to increase [by around 2 billion] by 2050. Practically all that growth will be in the developing countries of Asia and Africa. This will put increased strain on resources and systems that are already insufficient in many cases (Emerging Risks in the 21st Century: An Agenda for Action). The sustainability paradigm is a major change from the previous paradigm of economic development with its damaging social and environmental consequences. Until recently these consequences have been seen as inevitable and acceptable. However, we now realize that major damage or serious threats to the well-being of humans and the environment in pursuit of economic development have no place within the sustainability paradigm.

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INTRODUCTION

The root of the word "development" is the French word *développer* - to unroll or unwrap. It is an unfolding of human potentials for meaningful participation in economic, social, political and cultural process and institutions, so that people can improve their conditions. Development is intended to bring a positive change for human being and is the gradual growth of a situation that becomes more advanced and strong than previous one. Development may take place by bringing about a change in policy, projects and legislation. The word "sustain" is derived from the Latin word "sustinere" (*sus*, from *below* and *tinere*, to hold), to keep in existence or maintain, implies long term support or permanence.

Present scenario at global level: Planetary boundaries in terms of sustainable development can be understood in terms of ecological footprint which is suggestive of the pressure human activities put on ecosystems, which when compared to bio capacity (a measure of the capacity of ecosystems to

produce useful biological materials and to absorb waste materials generated by humans) tells us if we are running in surplus or deficit. Data shows that the world is living in a situation of ecological overshoot. In 2010, the global ecological footprint was 18.1 billion global hectares (gha), or 2.6 gha per capita, and the earth's total bio capacity was 12 billion gha, or 1.7 gha per capita, as per the Living Planet Report 2014. Bio capacity is not spread evenly around the world. Unfortunately the low-income countries have the smallest footprint but suffer the greatest ecosystem losses. Moderate UN scenarios suggest that if current population and consumption trends continue, by the 2030s we will need the equivalent of two earths to support us.

Present scenario at National level

For India, a large country both populated and poor, to develop in an environmentally sustainable development is not an option but a requirement. As per McKinsey report, India is at the threshold of an urban flare-up. The population of Indian cities will increase from 340 million in 2008 to 590 million by 2030. In the 2030s India's largest cities will be bigger than many major countries. As population increases, demand for every key service will increase five to sevenfold. These trends, combined with the current challenges of poverty eradication, food and energy security, urban waste management, and water

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scarcity, will put further pressure on our limited resources which will add to greater energy needs and lead to increase in emissions if further decoupling doesn't take place.

"We hold the future in our hands. Together, we must ensure that our grandchildren will not have to ask why we failed to do the right thing, and let them suffer the consequences." UN Secretary-General Ban Ki-moon, 2007

Sustainable Development: Defining a New Paradigm

Sustainability is a paradigm for thinking about a future in which environmental, social and economic considerations are balanced in the pursuit of development and an improved quality of life. There are many different definitions of sustainable development coming from various disciplines and with different assumptions about the basic relationship between society and nature. When the World Commission on Environment and Development presented their 1987 report, *Our Common Future*, they sought to address the problem of conflicts between environment and development goals by formulating a definition of sustainable development:

Sustainable development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable development is about integration: developing in a way that benefits the widest possible range of sectors, across borders and even between generations. In other words, our decisions should take into consideration potential impact on society; the environment and the economy, while keeping in mind that: our actions will have impacts elsewhere and our actions will have an impact on the future. It might be useful, then, to see the advent of sustainable development as a significant change in how people and governments perceive their activities, their roles and responsibilities: from primary emphasis on increasing material wealth to a more complex, interconnected model of the human development process. Sustainable development is therefore:

- a conceptual framework: a way of changing the predominant world view to one that is more holistic and balanced;
- a process: a way of applying the principles of integration – across space and time – to all decisions; and
- an end goal: identifying and fixing the specific problems of resource depletion, health care, social exclusion, poverty, unemployment, etc

Evolution of SD Concept: Rio to Johannesburg

Stockholm Declaration

The United Nations Conference on the Human Environment, was first held in Stockholm, Sweden, in June 1972, and marked the emergence of international environmental law. The Declaration on the Human Environment also known as the Stockholm Declaration set out the principles for various international environmental issues, including human rights, natural resource management, pollution prevention and the relationship between the environment and development.

The term 'Sustainable development' gained the real inputs during this conference. The main thrust of this concept is integration of development and environmental imperatives. The conference also led to the creation of the United Nations Environment Programme.

The World Commission on Environment and Development: The Brundtland Report

The term sustainable development began to gain wide acceptance in the late 1980s, after its appearance in *Our Common Future*, also known as *The Brundtland Report*, after its chair, the then Prime Minister of Norway, Gro Harlem Brundtland. In 1983, the United Nations (UNEP) established an independent group of 22 people drawn from member states of both the developing and developed worlds, and charged them with identifying the long-term environmental strategies for the international community.

The result of UN-convened commission created to propose "a *global agenda for change*" in the concept and practices of development, the Brundtland report signaled the urgency of re-thinking our ways of living and governing. To "responsibly meet humanity's goals and aspirations" would require new ways of considering old problems as well as international co-operation and co-ordination. The World Commission on Environment and Development, as it was formally called, sought to draw the world's attention to "the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development." In establishing the commission, the UN General Assembly explicitly called attention to two important ideas:

- The well-being of the environment, of economies and of people is inextricably linked.
- Sustainable development involves co-operation on a global scale.

The report gave a comprehensive definition to the term 'sustainable development' in the following words:

'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. The report is said to have put sustainable development firmly into the political arena of international development thinking. Certainly, it has been translated into more than 24 languages (Finger, 1994) and its definition of the term continues to be that which is most widely used.

The Rio Earth Summit and Agenda 21

In 1992, the United Nations Conference on Environment and Development, the 'Earth Summit', took place in Rio de Janeiro, Brazil. At the time, it was the largest ever international conference held, with over 170 governments represented and a further 2,500 NGOs and 8,000 accredited journalists attending. By this time, the term 'sustainable development' had also 'gained a currency well beyond the confines of global environmental organizations. Certainly in the developed world, the substantial media attention given to the serious

environmental disturbances surrounding forest fires in Indonesia, flooding in the Americas, China and Bangladesh, and typhoons in South-East Asia, for example, brought questions of conservation and ideas of sustainability into the public vocabulary. In the fields of development and the environment, an evident consensus was emerging that sustainable development was an important rallying point for research and action and a desirable policy objective which should be striven for

One of the major agreements signed during this meeting was a programme of action called Agenda 21. The 900-page document describes first steps towards initiating Sustainable Development across local, national and international levels as the world moved into the 21st century. Signatories promised to pursue action in four domains:

- Social and Economic Dimension, such as combating poverty and promoting sustainable urban planning;
- Conservation and Management of Resources, such as safeguarding the oceans' fisheries and combating deforestation;
- Strengthening the Role of Major Groups, such as women, local governments and NGO's; and
- Means of Implementation, such as transfer of environmentally-sound technology.

The UN established the Commission on Sustainable Development (CSD) in December 1992 to ensure an effective follow-up of UNCED and to monitor and report on the implementation of the Earth Summit agreements at the local, national, regional, and international levels.

Rio+5

A (Rio+5) Special Session of the General Assembly, held in June 1997, adopted a comprehensive programme for further implementation of Agenda 21 as well as the work programme of the CSD for 1997-2002.

Kyoto Protocol

The Kyoto Protocol adopted in December 1997 and the Conferences of the Parties (COPs), held over the years, have made some advances relating to clarification of various aspects of financing and implementing sustainable development globally.

Rio+10

The World Summit on Sustainable Development or ONG Earth Summit 2002 took place in Johannesburg, South Africa, from 26 August to 4 September 2002. It was convened to discuss sustainable development by the United Nations. WSSD gathered a number of leaders from business and non-governmental organizations, 10 years after the first Earth Summit in Rio de Janeiro. (It was therefore also informally nicknamed "Rio+10".) The Johannesburg Declaration was the main outcome of the Summit; however, there were several other international agreements. It laid out the Johannesburg Plan of Implementation as an action plan

Rio+20

The thirty-member Open Working Group mandated by the Outcome Document—"The Future We Want"—of the UN Conference on Sustainable Development (Rio+20) held in June 2012 at Rio came out with a set of 17 SDGs in July 2014.

"The loss of key elements of an ecosystem can alter the balance between its components and lead to long-term or permanent changes." - *Preserving Biodiversity and Promoting Biosafety (an OECD Policy Brief)*

The three pillars of sustainable development

The 2005 World Summit Outcome Document refers at the core of sustainable development is the need to consider "three pillars" *together*: society, the economy and the environment. No matter the context, the basic idea remains the same – people, habitats and economic systems are inter-related. We may be able to ignore that interdependence for a few years or decades, but history has shown that before long we are reminded of it by some type of alarm or crisis. The fact of the matter is that we depend on ecosystems and the services they provide in order to do what we do: run businesses, build communities, feed our populations and much more. Whether we consider the more obvious, immediately vital examples – the need for soil that can grow food or for clean water to drink – or the less obvious but equally significant things like oxygen production during photosynthesis or waste processing by bacterial decomposers, we cannot avoid the conclusion that we depend on the environment for our existence. If we damage or destroy the capacity of the environment to provide these services we may face consequences for which we are completely unprepared.

In the extensive discussion and use of the concept since then, there has generally been recognition of three pillars of sustainable development:

- **Economic:** An economically sustainable system must be able to produce goods and services on a continuing basis, to maintain manageable levels of government and external debt, and to avoid extreme sectoral imbalances which damage agricultural or industrial production.
- **Environmental:** An environmentally sustainable system must maintain a stable resource base, avoiding over-exploitation of renewable resource systems or environmental sink functions, and depleting non-renewable resources only to the extent that investment is made in adequate substitutes. This includes maintenance of biodiversity, atmospheric stability, and other ecosystem functions not ordinarily classed as economic resources.
- **Social:** A socially sustainable system must achieve distributional equity, adequate provision of social services including health and education, gender equity, and political accountability and participation

The sustainability paradigm is a major change from the previous paradigm of economic development with its damaging social and environmental consequences.

Until recently these consequences have been seen as inevitable and acceptable. However, we now realize that major damage or serious threats to the well-being of humans and the environment in pursuit of economic development have no place within the sustainability paradigm. We might then ask, what is the difference between sustainable development and sustainability? Sustainability is often thought of as a long-term goal (i.e. a more sustainable world), while sustainable development refers to the many processes and pathways to achieve it (e.g. sustainable agriculture and forestry, sustainable production and consumption, good government, research and technology transfer, education and training, etc.).

“Unsustainable development has degraded and polluted the environment in such a way that it acts now as the major constraint followed by social inequity that limits the implementation of perpetual growth.”- Emil Salim, Institutionalising Sustainable Development

Threats and challenges to SD

It is widely accepted that meeting the needs of the future depends on how well India and the rest of the World balances their social, economic and environmental goals when making decisions today. The challenge in making development compatible with environment is to restructure the economic system in a way that will not destroy the environment as economic progress continues. Broadly speaking, the challenges facing us today are Population, Literacy, Poverty, Urbanization and Transportation, Water scarcity, Agriculture industry domestic pollution, Air pollution, Limited resources and Wastages.

Principles of Sustainable Development

The ideals and principles that underlie sustainability include broad concepts such as equity among generations, gender equity, peace, tolerance, poverty reduction, environmental preservation and restoration, natural resource conservation, and social justice. The Rio Declaration (The Rio Declaration emerged from the United Nations Conference on Environment and Development, also called the Earth Summit, which was held in Rio de Janeiro in 1992. A total of 172 governments participated, including 108 heads of state or government. Agenda 21 is the official document of the Earth Summit) contains 27 principles, including:

- People are entitled to a healthy and productive life in harmony with nature;
- The right to development must be fulfilled so as to meet developmental and environmental needs of present and future generations in an equitable way;
- Eradicating poverty and reducing disparities in living standards in different parts of the world are essential to sustainable development.
- Environmental protection is an integral part of the development process and cannot be considered in isolation from it.
- International actions in the fields of environment and development should also address the interests and needs of all countries.

- To achieve sustainable development and a higher quality of life for all people, countries should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.
- Women play a vital role in environmental management and development. Their full participation is therefore essential to achieving sustainable development.
- Warfare is inherently destructive to sustainable development. Peace, development and environmental protection are interdependent and indivisible.
- These principles can guide the efforts of governments, communities and organizations to define sustainability goals and create programmes to help achieve those goals.

Perspectives of Sustainable Development

Not all the concepts associated with sustainability are incorporated in the 27 principles of sustainable development in the Rio Declaration. Accompanying principles of sustainable development are perspectives that have become part of the global sustainability dialogue, such as:

- A systems thinking approach (*Systems thinking* is the process of understanding how elements of a system influence one another within the whole. Systems thinking, also called a whole-systems approach has been defined as an approach to problem solving, in which “problems” are viewed as parts of an overall system, rather than as isolated parts, outcomes or events), rather than an approach that looks at problems in isolation should be used. Sustainability issues are linked and part of a “whole.”
- Understanding local issues in a global context and recognizing that solutions to local problems can have global consequences.
- Realizing that individual consumer decisions affect and give rise to resource extraction and manufacturing in distant places.
- Considering differing views before reaching a decision or judgement.
- Recognizing that economic values, religious values, and societal values compete for importance as people with different interests and backgrounds interact.
- Seeing all humans as having universal attributes.
- Knowing that technology and science alone cannot solve all of our problems.
- Emphasizing the role of public participation in community and governmental decision-making. People whose lives will be affected by decisions must be involved in the process leading to the decisions.
- Calling for greater transparency and accountability in governmental decision-making.
- Employing the precautionary principle – taking action to avoid the possibility of serious or irreversible environmental or social harm even when scientific knowledge is incomplete or inconclusive.

It is important that educators, leaders, and citizens recognize that sustainable development is an evolving concept and that

the list of sustainability perspectives can therefore grow and change.

Sustainable Development Goals

Sustainable development continues to be the key idea around which environment and development are structured. In addition, sustainable development is now stated as a principal policy goal of many more institutions in development than at any previous time. But the last decade has also witnessed development reversals and accelerated environmental degradation in particular places. A conscious policy framework which takes into account both developments needs and environmental considerations could help in turning the challenges into opportunities. There has been a growing political drive towards the post 2015 development agenda due for agreement in September 2015. In this direction, the thirty-member Open Working Group mandated by the Outcome Document—"The Future We Want"—of the UN Conference on Sustainable Development (Rio+20) held in June 2012 at Rio came out with a set of 17 SDGs in July 2014.

- End poverty in all its forms everywhere
- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
- Ensure healthy lives and promote well-being for all at all ages
- Ensure inclusive and equitable quality education and promote life-long learning opportunities for all
- Achieve gender equality and empower all women and girls
- Ensure availability and sustainable management of water and sanitation for all
- Ensure access to affordable, reliable, sustainable, and modern energy for all
- Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all
- Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation
- Reduce inequality within and among countries
- Make cities and human settlements inclusive, safe, resilient, and sustainable
- Ensure sustainable consumption and production patterns
- Take urgent action to combat climate change and its impacts
- Conserve and sustainably use the oceans, seas, and marine resources for sustainable development
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels.
- Strengthen the means of implementation and revitalize the global partnership for sustainable development.

The SDGs cover a broad range of sustainable development issues and also focus on means of implementation as one of the overarching goals to achieve the SDGs. These are expected to be integrated into the UN's post-2015 Development Agenda. At present, the post-2015 agenda and SDG processes are moving rapidly towards their conclusion this year. Concerns have been raised for quite some time about non-sustainability of the present cropping pattern and use of water resources.

Sustainable Development Strategies

One of the today's challenges is to find ways of strengthening the scientific and socio-economic perspectives to help authorities make decisions and produce sustainable development strategies. The government has emphasized the need for a coordinated approach to sustainable development. Its efforts to advance sustainable development in India and around the world are also evidenced by its action on climate change, human health and the environment; its support and for the building and maintenance of green infrastructure in and its recognition of the unique relationship tribal people have with the natural environment. In addition, the Government has also recently made a commitment to regularly update strategies, which will ensure progress. Some of the common themes that have emerged in this regard include:

- Enhancing the capacity of Indians to act and make decisions in support of sustainable development; strengthening and improving the access to knowledge in support of integrated decision making.
- Raising the level of understanding/awareness of sustainable development issues; providing the necessary tools to policy makers to a better advanced sustainable development.
- Building on existing partnerships and creating new one; providing leadership in areas such as greening of operations; fostering innovation and technology and promoting the adoption of sustainable development policies and practices in India and abroad.
- A coordinated approach, which outlines best practices for departments to adopt in procurement, waste management, water conservation, energy efficiency, vehicle fleet management, land use management and human resource management, needs to be prepared.
- Eco- efficient business practices that conserve energy, eliminate use of toxic materials, and reduce or reuse resources, innovative eco-efficient practices, tools, technologies; ad products can increase productivity while improving environmental performances.

Conclusion

Since the Brundtland Commission published its landmark report in 1987, we have come a long way in our reflections on sustainable development. Few would dispute its fundamental principles: that our actions must take into account effects on the environment, economy and society, and that what we do today should not compromise the well-being of future generations. In the last 20 years, significant progress has been made. Most national governments have begun to incorporate sustainable development into their planning and policy. Pro-

active businesses across the globe have brought sustainability to their products and processes. Local initiatives have had success in informing citizens of the importance of participating in reducing waste, renewing urban spaces and other programs. In spite of these efforts, though, putting the principles of sustainable development into practice has proven to be anything but simple or straightforward. After all, both people and institutions have their habits, and changing them, even when the need is obvious, can be daunting.

A key question remains whether we have made enough progress, or taken the warnings seriously enough to allow us to grasp and confront our biggest, most pressing problems. We have solid evidence of climate change, with projections pointing to an increase in extreme environmental events with potentially devastating consequences for the systems that support human life and society. About half the world still lives on less than \$2.50 dollars a day, lacks access to clean water, sanitation, adequate health care and education – an unacceptably stark contrast to the much higher standards of living in developed countries. Some emerging economies, such as China and India, are undergoing rapid growth, resulting in more wealth, but also an increased demand for energy and greater pollution problems. Finding sustainable solutions for growth holds the potential to help reduce poverty, foster development and preserve the environment. Implementing them requires political will and co-operation on a global scale. It is impossible to know precisely what the consequences of unchecked or badly managed development will be, but we

have enough information to understand that they are potentially negative, costly and irreversible. Sustainable development gives us a new way of thinking through and managing human impact on the world – one that can generate long-lasting positive results for the greater benefit of human societies.

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