

## SUSTAINABILITY: IMPLICATIONS FOR ECONOMICS AND THE ENVIRONMENT

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### ABSTRACT

The twentieth century was one in which the social, economic and political debate on environmental sustainability became a world concern. The issues surrounding sustainability were canvassed at local, regional and international fora. The United Nations became a rallying point and an umpire regulating the terms for engaging interest in world summits on sustainability. The debate on sustainability resonated with the world at the precipice of climate change at the turn of the century. The debate has centred on whether there could be economic growth without compromising environmental sustainability. This is the key issue examined in this paper.

**Keywords:** Sustainability, Economic growth, Sustainable development, Environmental mainstreaming.

### INTRODUCTION

Speaking about the mutuality, interdependence, inseparability, and interconnectedness of human existence with the rest of creation, Pope John Paul II echoed the principle of sustainability when he said that “respect for life and for the dignity of the human person extends also to the rest of creation, which is called to join man in praising God”. This papal authorial commentary speaks volumes about the importance of ecological sustainability for human survival.

Economic science recognizes the critical role of environment and ecology in managing economic systems. Dating back to the days of Aristotle, human needs were met by partly satisfying their preferences at a particular time. It was also necessary for successive generations to leave behind sufficient resources so that future generations are not constrained in their preferences. This invariably followed that future set of meaningful choices should be at least as good as the set available to the current generation (Rao, 2000). According to Rao, the means for achieving this objective originate either explicitly or implicitly in the fundamental approaches of econcentrism and anthropocentrism. Ecocentrism is an environmental philosophy which views human activities in terms of their implications for the ecological ingredients, their relative effects, and balances. The alternative approach, which is anthropocentrism, is based on the view that any and all human activities must be in the primary interests of the humans for achieving the desired objectives and goals of the society, irrespective of whether some of the features of the environment and ecology are kept intact or disturbed.

Sustainability is most often defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. It has three pillars: economic, environmental and social. These three pillars are informally referred to as people, planet and profits. Economic sustainability is an integral part of sustainability and means that we must

use, safeguard and sustain resources (human and material) to create long-term sustainable values by optimal use, recovery and recycling.

The links between the economy and the environment are manifold: the environment provides resources to the economy and acts as a sink for emissions and waste. Conversely, poor environmental quality in turn effects economic growth and wellbeing by lowering the quantity and quality of resources or due to health impacts, etc. Environmental sustainability is concerned with whether environmental resources will be protected and maintained for future generations. Sustainable economic growth therefore refers to growing strong economics, without undermining the environment, job creation, people's health and livelihoods.

The U.S. environmental Protection Agency, EPA (1997) sees strong sustainability as treating natural capital separately – on the assumption that man-made capital cannot be substituted for it. Put differently, strong sustainability rejects the idea that built infrastructure adequately compensates future generations for ecological losses. It affirms that man-made capital cannot, regardless of price, replace the services and amenities provided by nature especially life-support services such as protection from UV radiation, climate regulation, the food chain, the balance between alkalinity and acidity, the storage, movement and purification of water etc. It also maintains that nature's viability must be protected. This is because the unique services of ecological systems have no substitute, and if impaired, irreversible harm or collapse can ensue.

Markulev and Long (2013) indicate that within economic frameworks, sustainability is said to be achieved if the wellbeing of society is maintained over time. Wellbeing is broadly defined, in addition to consumption of market goods and services, made possible by economic production (income) which includes household and environmental services and other non-market outcomes such as social connectedness. Some economics have interpreted sustainability in various ways. Citing Dasgupta and Heal (1974), Solow (1974) and Stiglitz (1974), Markulev and Long (2013) show that their models of economic theory of economic sustainability represented wellbeing over time in terms of welfare maximization. Their models also show that "utility can be either constant or declining over time depending on what is assumed about the capital stock, technological progress, and the rate at which future utility is discounted" Implicit in this interpretation is the assumption that sustainability can be attained where wellbeing is maintained over time, by preserving the total stock of capital.

Pettinger (2018) maintains that classical economists such as Adam Smith and David Ricardo placed emphasis on short-term goals. This reflected societies' belief that the environment was there to be utilized for mankind's benefits. However, following economic movements in the twentieth century, ecological or nature economics emerged which seeks to go beyond putting a commercial value on environmental resources but treat it as something more important than part of market forces. In this context, natural services and the environment are of equal value to physical capital. Based on this premise, it can be proffered that whilst it is impossible to stop economic growth, it is possible to change economic growth by focusing on environmentally sustainable types of economic growth.

### **The Importance of Sustainability**

To understand sustainability either as a concept or principle, it is important to trace the beginning of world concern for environmental damage and ecosystem damage. It marked the beginning of concerted efforts by the world community to address environmental issues with varying international repercussions. Mason (2020) avers that:

By the late twentieth century, the science of climate change was firmly established. We knew by the 1980s about the problems of the greenhouse effect and the destruction of the ozone layer and coming very late in the century, an awareness of the notion that some of our resources – particularly fossil fuels – were finite and that we should make efforts to move to renewable methods of power. It was then that we saw the social, economic and scientific birth of the environmental movement.

The world thereafter became more coordinated in its efforts in search for a sustainable future. In the same vein, Basiago (1999) while highlighting the economic, social, and environmental sustainability in development theory and urban planning practice, states that environmental sustainability requires maintaining natural capital as both a provider of economic inputs (sources) and an absorber (Sinks) of economic outputs (wastes). The further explains that at the ‘source site’, harvest rates of resources must be kept within regeneration rates. At the ‘sink site’, wastes emissions from industrial production must be controlled so as not to exceed the capacity of the environment to assimilate them without impairment.

Environmental sustainability applied to development theory correlates with economic, social and environmental sustainability. More importantly, the protection of natural systems represents not an overarching panacea for achieving economic vitality and social justice, but an integral part of an entire system for achieving economic, social and environmental sustainability, in which economic and social reforms are an essential part. The ecological definition of sustainability originated with the Brundtland Report in 1987, aptly described sustainable development as one that satisfies the needs of the present without adversely affecting the conditions for future generations. The avoidance of depletion of natural resources in order to maintain an ecological balance as conveyed in the Brundtland Report is expressed by EPA (2013) in this definition of sustainability thus:

Everything that we need for survival and well-being depends either directly or indirectly on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, [condition] that permit fulfilling the social, economic and other requirements of present and future generations.

The notion of balance is explicit in the interpretation of sustainability by the office of sustainability, University of Maine (2017) which maintains that sustainability is not just about renewable energy and energy efficiency. A necessary precondition for realizing a sustainable future requires an understanding of the connection between the environment, society and the economy. It also requires developing a sustainable state of mind that permeates all aspects of day-to-day living at local, national and international levels. It is articulated that the environment is of primary importance because a healthy ecosystem is required to nourish a robust society. While society and social responsibility are of secondary importance, economic sustainability is third because a prosperous economy cannot evolve in isolation from a healthy and just society.

Consequently, the 16 sustainability principles of the Earth Charter were predicated on the above interpretations as provided in this excerpt by Waas et al (2011):

i. **Respect and Care for the Community of Life**

1. Respect Earth and life in all its diversity.
2. Care for the community of life with understanding, compassion, and love.
3. Build democratic societies that are just, participatory, sustainable, and peaceful.

4. Secure Earth's bounty and beauty for present and future generations.
- ii. **Ecological Integrity**
  5. Protect and restore the integrity of Earth's ecological systems with special concern for biological diversity and the natural processes that sustain life
  6. Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach.
  7. Adopt patterns of production, consumption, and reproduction that safeguard Earth's regenerative capacities, human rights, and community well-being.
  8. Advance the study of ecological sustainability and promote the open exchange and wide application of the knowledge acquired.
- iii. **Social and Economic Justice**
  9. Eradicate poverty as an ethical, social, and environmental imperative.
  10. Ensure that economic activities and institutions at all levels promote human development in an equitable and sustainable manner.
  11. Affirm gender equality and equity as prerequisites to sustainable development and ensure universal access to education, health care, and economic opportunity.
  12. Uphold the right of all, without discrimination, to a natural and social environment supportive of human dignity, bodily health and spiritual well-being, with special attention to the rights of indigenous peoples and minorities.
- iv. **Democracy, Nonviolence, and Peace**
  13. Strengthen democratic institutions at all levels, and provide transparency and accountability in governance, inclusive participation in decision making, and access to justice.
  14. Integrate into formal education and life-long learning the knowledge, values, and skills needed for a sustainable way of life.
  15. Treat all living beings with respect and consideration.
  16. Promote a culture of tolerance, nonviolence, and peace.

The 16 sustainability principles highlighted above are the cardinal rules that should guide our moral, spiritual, physical and intellectual perspectives and relationship with the natural world. These should provide the rules of engagement between humanity and nature – thereby making sustainability an axiom for economic growth and development.

### **Economic Definitions and Approaches to Sustainability**

A number of economic definitions are offered in the literature that define economic approaches to the theme of sustainable development. The definition by the Brundtland Report, WCED (1987) contributed to much of the ongoing concern for sustainable development:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of "needs," in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

Mitlin and Satterthwaite (1990) assert that to make development sustainable at the level of countries – or at the global level – requires that societies, in seeking to achieve development objectives, also seek to maintain a constant stock of environmental asset. According to Rao (2000) this approach suggests an attempt to balance ecological and economic considerations.

However, the specification of avoiding an irreversible damage may not be good enough when considered against the backdrop of the interdependencies of ecological features when thresholds are crossed. It is desirable to focus on the latter, in addition to the economic criteria.

A second economic definition is one which described sustainable development as “a pattern of social and structural transformation which optimizes the economic and other social benefits available in the future” (Gilbert and Braat, 1991: 261). This approach follows the precept of the Brundtland Report, but falls short of providing requisite precision. These features arise from the perceived and interpreted potential for future benefits; and specifications for optimization of resource use and of corresponding benefits. The recognition of these features helps to improve the formulation of sustainable development models.

The third economic definition is an all-inclusive set of social, economic, and institutional aspects as incorporated in the concept of sustainable development in the approach advocated by Gladwin et al (1995:874) who defined the concept as “a process of achieving human development... in an inclusive, connected, equitable, prudent, and secure manner”. Here the inclusiveness implies human development over time and space; connectivity entails an embrace of ecological, social, and economic interdependence; equity refers to both intergenerational and intragenerational, and also to interspecies fairness. Prudence concerns care and prevention – technologically, scientifically, and politically; security demands safety from chronic threats and protection from harmful disruptions. This definition appears quite encompassing, but rather infeasible in its specifications.

Rao (2000) admits that a number of broad policy measures are prescribed under the Rio Declaration of the Earth Summit of 1992. The economic principles included among others:

1. The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations (Principle 3).
2. All states and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world (Principle 5).
3. To achieve sustainable and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies (Principle 8).

The above principles as set forth in the Earth Charter emphasize economic development in addition to sustainability. The concept of sustainability admits varying notions and definitions. Development is fundamentally a broad-based specification of economic progress. The concept of sustainability accommodates a broad spectrum of Safe Minimum Standard (SMS) in resource use, including preservation of environmental quality and its assets.

### **Economic Growth and Sustainability**

The relationship between economic growth and the environment is undoubtedly clear. In view of this fact, the World Bank Institute (2000) in its report on Economic Development and Environmental Sustainability – Policies for a Durable Equilibrium, indicates that it is important for the world to pursue development while at the same time attempting to eliminate differences between the rich and the poor. As a matter of deliberate policy, distribution of wealth must remain a top priority. Again, economic development must be achieved in an environmentally sustainable manner. In this case, it is up to the countries to determine a durable equilibrium between their economy and their ecology. The two cases are closely interrelated, for if any is



neglected, it will inevitably affect the other. It is therefore essential that priority is given to reduction in environmental degradation, pollution, as well as protecting biodiversity.

The World Bank Report further elucidated that most countries have pursued economic development without taking environmental issues into account. Consequently, they are now facing the problems which include water and air pollution, pesticides in the food supply, ultraviolet rays penetrating the thinning ozone layer, increased global temperatures caused by greenhouse gases, etc. What is noteworthy in these problems is that they have provided a lesson in terms of mistakes made that should be avoided in the future. Similarly, the adverse effect of the headlong pursuit of economic development that countries must consider is the irreversibility particularly in the context of environmental degradation and loss of biodiversity. It is important to note that once biodiversity loss has escalated to the point of no return, it is impossible to reverse the situation. Under such circumstances societies will have to adapt to and cope with environmental changes and hope that the loss of biodiversity will not have too negative impact on peoples' livelihoods.

Given the various environmental challenges confronting man, several steps need to be taken to curb their occurrence. In particular, steps need to be taken by governments, stakeholders, civil societies, NGOs in collaborative efforts to reduce pollution, improve the quality of the ambient environment, and reduce poverty.

Rao (2000) asserts that economic growth is conventionally measured in terms of increases in income. Of paramount significance here is the dynamics of sustainable economic growth with the requirement that desirable environmental features are sustainable. The analytical models of economic growth acceptable that meet the sustainability requirement would be in the mould of social utility function which recognizes that humans do care for the benefits of environmental quality.

In Rao's (2000: 103) analysis of models of economic growth, systems models are relevant for exploring the linkages between the environment/ecology and the economy. Some can lead to greater insights into the complex relationships and optimal interventions, if properly formulated. As he puts it:

Models using different methods of optimization are useful when there is substantial clarity about various ingredients for their further formulation and processing. It is necessary to obtain a quantified assessment of options as well as their sensitivity to known influences or changes in the parameters identified, called structural equation and dynamics... These models can generate results like optimal levels of environmental abatement, pollution, and economic growth consistent with the maximization of the objective function over an infinite time period, subject to various specifications of constraints and a time-discount rate.

World Bank Institute Report (2000) establishes links among trade, economics, and the environment. According to the Report, complex links exist between trade and environment. Trade tends to affect both the structure and growth of a national economy. Although trade affects the economy in positive ways, such as increase in standards of living, it can also lead to irreversible environmental damage. Under this circumstance, trade neglects the environment the same way domestic markets fail to take environmental losses into account. This is because the use of environmental and natural resources is not properly priced in the market. The reason

for this is because the environment tends to be nonrival, nonexclusive good that eludes market prices. It also maintains that while it would appear that environmental problems intensify with increased trade, they are essentially due to trade-induced growth and general development. However, government policies that reduce market distortions, support strong property rights, promote law and regulations that govern the use of natural resources and the environment, and support the formation of a well-educated labour force are the most significant ways to promote sustainable development.

Again, the economy wide effects of trade and the environment are mixed. Rapid economic growth can also have negative effects on the environment. Increased economic activity can result in the rapid consumption of natural resources and increased environmental pollution. The policy implications of trade and the environment for developing countries as the World Bank Report indicates is that preemptive policy could take the form of strengthening property rights; educating people about sustainable production methods; and imposing environmental taxes on activities that will affect regional ecosystems. When increased economic activity occurs in the industrial sector, it will necessitate a policy shift to a mix of market-based instruments, local participation, and private-public sector partnerships.

Having established the complex links between increased economic activity and the environment, it is generally admitted that increased prosperity enhances the predisposition to protect the environment, yield more funds to pay for environmental damage, result in the use of cleaner technologies and more efficient production practices, and encourage the formation of stronger institutions focused on environmental protection. Blueprint for environmental management must be a matter of priority at the local, national and multilateral levels.

### **Mainstreaming Environmental Considerations**

The reasons for environmental mainstreaming are invaluable. UNDP-UNEP (2001) in a Guidance Note on Mainstreaming Environment into National Development Planning defined environmental mainstreaming thus:

Environmental mainstreaming is defined as integrating poverty-environment linkages into national development planning processes and their outputs, such as Poverty Reduction Strategy Papers (PRSPs) and Millennium Development Goal (MDG) strategies. It involves establishing the links between poverty and environment – including climate change – and identifying the policies and programmes to bring about better pro-poor environmental management. It is targeted at influencing national plans, budget processes, sector strategies and local level implementation – reflecting the need to integrate the valuable contribution of environmental management to improved livelihoods, increased economic security and income opportunities for the poor. The overall aim is to establish enduring institutional processes within government, from national to local levels, and within the wider stakeholder community, to bring about environmental mainstreaming that is focused on the government bodies responsible for poverty reduction and growth policies, and that strengthens the role of environmental agencies and non-governmental sectors.

The International Institute for Environment and Development, IIED (2009) defines environmental mainstreaming as “The informed inclusion of relevant environmental concerns

into the decisions of institutions that drive national, local and sectoral development policy, rules, plans, investment and action". According to IIED (2009), environmental mainstreaming results in a better understanding of the capabilities of environmental assets, the consequences of environmental hazards, and the real or potential impacts of development on the environment. Such understanding can consequently improve decisions, especially if there is a systematic institutional framework for making such decisions. In its emphasis on integrated approaches and informed tradeoffs, environmental mainstreaming is a major practical component of sustainable development. It can be assisted by a variety of technical and deliberative tools. In this approach, organizational and individual values and priorities need to change if environment and development are to be integrated, and the environment is not to be treated merely as a technical aspect.

IIED (2009) explains that the basic reasons why environmental mainstreaming is important is that economic and social development and the environment are fundamentally interdependent. The way the economy and political and social intuitions are managed has critical impact on the environment. In the same way, environmental quality and sustainability are vital for the performance of the economy and social well-being. For this reason, the task of environmental integration and mainstreaming is therefore a major focus of development planning and policy formulation.

World Bank Institute (2000) indicates that incorporating environmental considerations into cost-benefit analyses essentially involves identifying impacts and imputing a value to them. Sustainability considerations are addressed when the project includes ways to deal with its negative environmental impacts. Mainstreaming environmental considerations means that environmental stewardship is not only in administrative structures, but also in institutional and human behaviour. The mainstreaming approach requires increased education and information about the environment so as to make the environment a central focus of decision-making across all levels of government, private sector activities, communities, and individuals.

IIED (2009) articulating the challenges of environmental mainstreaming, explains why environmental mainstreaming is needed, what it means, and who should be concerned. It maintains that the economy and society are intimately dependent upon the health of the environment. Environmental assets, for example, fertile soils, clean water, biomass and biodiversity etc yield income, offer safety nets for the poor, maintain public health and drive economic growth. Conversely, environmental hazards, for example, pollution, environmental damage, climate change etc all threaten livelihoods and development. Poor people particularly are dependent on environmental assets and are vulnerable to hazards. It is observed that environmental and developmental institutions and policy decisions tend to be separate, which results in environment being viewed as a set of problems rather than potentials.

IIED has identified the following benefits of environmental mainstreaming which include to:

- find integrated solutions that avoid development vs. environment's arguments, institutional tensions, and associated costs;
- enable more efficient planning of environmental assets and environmental hazard management;
- support technological innovation that is informed and inspired by nature;
- support informed policy debate and formulation on big issues;
- and, in these ways, improve the productivity, resilience and adaptability of local, sectoral, national and indeed global social and economic systems – reducing the risk of collapses and the need for short-term 'bail-outs'.



In order to achieve the above benefits, environmental mainstreaming requires collaboration – the integration of environment and development interests and ideas, and not just environment being formed into development. Environmental mainstreaming depends upon leadership and catalytic organizations to forge the necessary links and processes, and needs to be a continuing and long-term process, not a one-off project.

Barriers to mainstreaming have been identified by Price (2019) to include:

- **Political factors:** interests that align or conflict with adaptation goals, level of political commitment to adaptation, level of public awareness of or support for adaptation, policy inconsistency/consistency across policy levels, flexibility of legislative or policy context, and level of political stability;
- **Organizational factors:** factors within particular as well as inter-organizational factors;
- **Cognitive factors:** level of awareness, level of uncertainty, sense of urgency, and degree of social learning;
- **Resources:** available staff, financial resources, subsidies from higher levels of government, information and guidance, and availability of and access to knowledge and expertise;
- **Characteristics of the adaptation problem at issue:** the way in which the adaptation objectives are defined and compatibility of time scales;
- **Timing:** waiting and sustaining momentum for climate change adaptation, focusing events, and windows of opportunity such as urban renewal.

It is expected that more strict requirements for mainstreaming set at the national or international level will provide impetus for policy-makers and planners in non-climate policy sectors and at lower tiers of government to climate proof the sectors for which they bear responsibility.

## CONCLUSIONS

Sustainability has obvious implications for economics and the environment. In the light of the above considerations, it is to be noted that poor people rely on natural assets to earn incomes in sectors such as agriculture, fishing, and forestry. Natural assets also provide food and shelter for the poor. Environmental conditions account for twenty one percent of the overall burden of disease worldwide. Poor people are more vulnerable to natural disasters, effects of climate change, and environmental shocks that destroy livelihoods and undermine food security. Improving environmental management reduces vulnerability. Public goods such as watersheds, mangrove forests, and ecosystem services provided by protected areas are especially beneficial to the poor and improve quality of life.

The goal of achieving development that is sustainable and does not threaten the livelihoods and well-being of future generations has been universally acclaimed by scholars and development agencies. An important condition for achieving the goal of sustainable development is to realize that environmental quality and the general services performed by the natural environment play a more important role than development planners and economic managers had assumed in the past. The broad policy implications of sustainable development suggest that countries should focus on the role of the government and the market to compensate for environmental externalities, should mainstream environmental considerations into programme and project planning, and should modify their natural accounts to include environmental services.

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