Updates on the project

The project has entered an interesting phase as the integration work is now on. Spatial integration of the output of various workpackages and modelling work is under way. The analysis of data for North Goa district (representative of the tourism driver) is complete. A multi-stakeholder workshop to develop scenarios for tourism was held during this period to (1) sensitize tourism planners/managers to the other stakeholders (the outside world), (2) develop 'out of the box' thinking, (3) develop a better understanding of today by imagining a tomorrow that involves others, (4) identify key threats and opportunities, (5) spot changes early, and (6) develop partnerships for more sustainable tourism.

The meeting was successful in identifying stakeholder concerns and driving factors that would shape tourism in our study location over the next decade.

Major tasks accomplished during the last 6 months include

- socio-economic analyses of the other two locations;
- assessment of coastal vegetation cover and change using geographical information system and remote sensing;
- groundwater vulnerability mapping and mathematical groundwater flow and optimization modelling of the Goa study location, geographical groundwater protection zoning; and
- bacteriological analysis of water quality in the Goa study location.

Equity, human security, and environment: key elements of sustainable development*

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In this paper I advocate the idea that equity,[1] security, and the environment are key elements of the definition of sustainable development. Arguing, like Ignacy Sachs, that the concept of sustainable development must be based on a society-oriented definition of problems, I will try to present some aspects of the complex and conflicting interaction between social equity, human security, and environmental sustainability within the social process of shaping and building development for present and future generations.

In accordance with the research proposal mapped out by COASTIN, I will argue that sustainable development demands an integrated and interactive approach that allows for the understanding of the complex relationship between society and nature in respect of human rights, assuming that the environment is a vital dimension of humanity's future.

What is sustainable development?

In the years immediately following the WW-II (World War II), economists and policy-makers in the developed countries viewed technologically-based and consumer-oriented economic growth as the path to a global future of prosperity and security for all. To be fair, some did conceive a difference between economic growth and development. However, only a few considered whether this concept could be reconciled with environmental realities.

In 1972, the Club of Rome released a report, 'Limits of Growth', in which it was suggested that if current economic patterns continued, the world would soon experience an ecological disaster. People were realizing and perceiving that the limits of environmental tolerance for human interference were being reached and if the model of economic growth and development was not changed, the future of the world would be in question. Another significant conclusion was that the problem was no longer local, national or even regional—resource depletion and environment degradation were global problems.

In 1983, the United Nations called for a high-level commission, the WCED (World Commission on Environment and Development), commonly known as the Brundtland Commission. In 1987, its final report, 'Our Common Future', stressed the need for economic growth and development strategies in all countries that recognized the limits of the ecosystem's ability to regenerate itself and absorb waste products (World Commission on Sustainable Development. 1987).

* A longer version of this paper was released at Fondazione ENI Enrico Matei Conference, Venice, 10 April 2001.

[1] It is important to note that inequity is not the same as or synonymous with inequality. Social inequalities count as inequities only when they are avoidable, unnecessary, and unfair. Adapted from Daniels, Kennedy, Kawachi, Boston Review.

While adding little that was conceptually new to the development and environment debate, the Brundtland Commission popularized the term sustainable development and recognized an accelerating ecological interdependence among nations. The WCED emphasized the link between economic development and environmental issues, and identified poverty eradication as a necessary and fundamental requirement for environmentally sustainable development.

Many environmentalists, like Paelke (1999, p. 243) see sustainable development as 'an oxymoron, little more than a political cover for otherwise unacceptable corporate environmental practices.' In contrast, others see sustainable development as the basis for a genuine balance between economic growth and environmental values, and even Paelke (1999, p. 244) recognizes that sustainable development was positively introduced as a 'rebuttal to the common 1970s assertion that zero economic growth was desirable and even inevitable, especially in the long run, given environmental and resource constraints', and show the evidence that economic restraint, in some contexts at least, could increase rather than reduce environmental damage. In fact, economic growth provides both environmental opportunities and environmental costs.

Becker, Jahn, Stiess, et al. (1997, p. 9) point out that the concept of sustainable development is based on a society-oriented definition of problems, including not only the issue of economic efficiency, but also those of social justice and political regulation. For Becker et al., sustainable development may be conceived as a conceptual counter-position to modernization, a paradigm that dominated the social and economic sciences from the end of WW-II, but was increasingly called into question from the seventies onwards.

In contrast to the modernization theory, the idea of sustainable development 'emphasizes the diversity of societal paths of development, depending on their particular cultural or political as well as their ecological starting points' Becker, Jahn, Stiess, et al. (1997, p. 10). In any case, the concept of sustainable development cannot avoid the inherent ambiguity of the term development that means a model of society, i.e., the generalization of the patterns of societies built by western countries.

For this reason, and without rejecting the concept of sustainable development, some authors suggest the use of 'sustainability', which, as a concept, travels with rather less 'political baggage' (Paelke 1999, p. 243). Ignacy Sachs (1995) presents a remarkable approach to the debate on sustainability. His approach distinguishes between environmental and social sustainability in terms of 'outer' and 'inner' limits of society. To Sachs, whilst environmental sustainability is concerned with the biophysical limits of social activities, social sustainability is related to the internal organization of individual societies as well as of the world community as a whole.

Fourteen years after being publicly propounded by the Brundtland Commission, it is now generally agreed that the idea of sustainable development represents a positive and unarguable theoretical and conceptual leap and a valuable contribution to the analysis of economic growth and development, insofar as it

- introduces the idea of a strong link between economic growth and natural resources/the environment;
- introduces the idea of a complex relationship between growth and the environment, drawing attention to the need to bear in mind the ideas of environmental sustainability, economic sustainability, and social sustainability, and the need for conciliation in conflicts between these different dimensions;
- asserts that 'zero' economic growth can be as harmful to the environment as uncontrolled economic growth (unlike the Rome Declaration);
- introduces the idea that the fight against poverty, for social justice and quality of life are essential aims in order to ensure sustainability in environmental, economic, and social terms; and
- asserts the idea, contrary to that defended by classical theories of development, that sustainability is not a linear process and cannot be gauged against a single and universal development model.

Equity and the environment

There is a considerable corpus of literature based on empirical evidence showing that the degradation or depletion of the environment affects people in societies and among countries in different ways, creating and reinforcing new forms of social and economic discrimination.

Many studies show that economically and socially underprivileged regions with higher unemployment rates are more welcoming to polluting industries. In these regions, ecological movements are weaker and the motto is any job is better than no job!

The poverty–health–environment triangle can also help to illustrate how the environment can be associated with social discrimination and inequity. To the WHO (World Health Organisation), a prerequisite for good health is access to clean water, food, clothes, housing, and sanitation. Under a certain level, health is impossible to maintain. This is the issue relevant to a large part of the population of the world.

The consequences of poverty are enormous and inequitable. In developing countries, environmental health problems in the developed world seem trifling. For the developing world, the traditional hazards that produce infectious diseases related to environmental factors remain the most pressing health problem. The control of these

diseases depends to a large extent on traditional environmental factors such as[2]

- supplies of safe drinking water,
- provision of basic sanitation and waste-handling,
- proper shelter or housing,
- improved availability and safe handling of food
- measures against disease vectors and other hazards in agriculture, and
- access to safe and effective drugs and vaccines.

It is also a fact that dramatic environmental events such as floods place a particular burden on the poor. Some believe that weather is the only thing that treats all people equally. No matter whether you are rich or poor, everybody gets wet when it rains.

This we all know. But what is becoming increasingly clear is that the poor are also bearing the main burden of the long-term climatic changes to our environment. Recent assessments by health scientists working within the Intergovernmental Panel on Climate Change have confirmed that poor populations tend to be the most vulnerable to the health impacts of climatic variation and climate change.

Human security

It seems necessary to look deeper into the links between environment, economy, and society in order to have a clearer and precise idea of the links between environmental change and conflict, environmental degradation and violent conflict or the contributions of the scarcity of renewable resources to violent conflict in developing countries.

In 1987, the WCED emphasized that environmental stress could be a cause as well as a result of conflict, and the US National Academy of Science (1991) has recognized that global climate change may well be an important contributor to political instability in the future.

The Working Committee on Environment Security and Sustainable Development of the International Human Dimension Programme (Lonergan 1996) suggests that focusing on violent conflict is too narrow to encompass the broad range of impact on humans resulting from degradation of the natural environment or from the scarcity of resources. They defend the idea that it is important to broaden the discussion to include various aspects of human security as defined by the UNDP (United Nations Development Programme), in which political security and personal security are two components.

The UNDP proposes an integrative concept of human security. Initially, human security was interpreted as threats to the physical security of the person (see the Universal Declaration of Human Rights), but the concept now encompasses economic, health, and environmental concerns, and includes seven categories of threats.

- Economic threats (assured basic incomes)
- Food security
- Health security
- Environmental security (access to sanitary water supply, clean air and a non-degraded land system)
- Personal security (security from physical violence and threats)
- Community security (security from ethnic cleansing)
- Political security (protection of basic human rights and freedom).

The human security concept proposed by the UNDP appeals to and recognizes the links between the environment and society and the complexity of these relations. This broad perspective also avoids the error of falling into a definition of causal links between environmental change and degradation, or scarcity of resources and conflict.

Having developed a number of institutions, which, more than at any other time in history, provide social and individual welfare and security, modern society has also developed an alarming capability for military destruction, perpetrating the greatest and most violent aggression against the environment ever witnessed, and generating greater inequality in access to wealth on a worldwide scale. The modern era differs from preceding periods because of its dynamism, the speed and intensity of social change, the erosion of traditional habits and customs and the growing links between these changes and individual lives.

Modern society may be characterized by the increasing complexity and global nature of social relations, leading to a new framework of global/local interdependence as well as changes in the paradigms of space and time. The research project designed for COASTIN seeks to ensure that this complexity is integrated in the analysis, so as to arrive at an understanding and to monitor the interaction between human systems and natural systems. We hope that the challenge of analysing such a complex and dynamic phenomenon as coastal regions, using such a varied range of scientific perspectives as those contained within the COASTIN research team, will carry us safely to harbour!

[2] However, we should not forget that the most dangerous epidemic today, the HIV/AIDS-epidemic is related to human behaviour, or to be more precise human sexual behaviour.

References

Becker E, Jahn T, Stiess I, and Wehling P. 1997
Sustainability: a cross-disciplinary concept for social transformations
Paris: UNESCO/MOST [Policy Paper No. 6]

Sachs I. 1995
Searching for new development strategies
The challenges of the Social Summit
Paris: UNESCO/MOST [Policy Paper No. 1]

Paelke R. 1999
Towards defining, measuring and achieving sustainability: tools and strategies for environmental valuation
In *Sustainability and Social Sciences: a cross-disciplinary approach to integrating environmental considerations into theoretical reorientation*, edited by Egon Becker and Thomas Jahn
London: Zed Books.

Lonergan S. 1996
Scoping report for the international human dimension of global change program
Victoria, BC: Global Environmental Change and Human Security

United Nations Division for Sustainable Development. 1999
Comprehensive assessment of the freshwater resources of the world
New York: United Nations Division for Sustainable Development

World Commission on Environment and Development. 1987
Our Common Future
UK: Oxford University Press.

Coastal management policy in India: a commentary

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Development activities generally target coastal areas for many reasons, port facilities being a major one. Other factors include availability of a high degree of infrastructure facilities, skilled and unskilled labour, and easy market access. But the actual development scenario is controlled by geographic conditions of the area since it would be unpractical to ignore the surroundings in any development plans. These geomorphic conditions possibly made the two Indian coasts, the East and the West, exhibit two subtly different patterns of settlement and anthropogenic activities. The West Coast, except for the area around the Gujarat coast, is mostly a narrow strip of hilly land (~50 km in width) between the Arabian Sea and the Western Ghats, the western range of the mountainous Deccan Plateau. It has rocky promontories interspersed with small rivers and estuaries. The industrial and commercial trades here were largely limited to port areas at a few places such as Kochi, Mumbai, and Surat in the past, Kandla, Mangalore, and Mormugao being additions in the last half century. The rest of the coast was characteristically rural in nature without much conflict between man and the environment. On the East Coast, with broader coastal planes and rich deltaic soil available at the mouths of the great Indian rivers such as the Ganges, the Godavari, the Mahanadi, and the Krishna, the local population had been traditionally practising agriculture on a large scale. The port and harbour activities were extensive too. Many townships with large populations grew up on the eastern side whereas on the West Coast population migration to the cities such as Mumbai resulted in a different pattern of urban dwelling—the big cities and the villages.

Coastal environment and development

India has regulatory agencies such as the CPCB (Central Pollution Control Board) with branch offices in all states for assistance, and on the marine side, the Coast Guard to take care of coastal oil spills and other marine matters. They are armed with laws such as the Environment Protection Act (1986), and various other legal environmental regulations such as the Air Act and the Water Act. But these organizations bear an inherent weakness. They are understaffed and receive funds that are barely sufficient to enable them to stay afloat. The Department of Industry, on the other hand, would rather not consider pollution as its mandate.

With the extensive, intensive, and haphazard industrialization as well as ineffective monitoring agencies, there is little surprise that the coastal environment was ignored till the late 1980s. However, environmental impact assessment reports and scientific monitoring exercises undertaken separately by the CPCB and the DOD (Department of Ocean Development), Government of India, made authorities sit up and take notice of the polluted coasts. The CPCB had in the 1980s surveyed the entire coastline of India with the help of discussions and interviews with stakeholders on the coasts, including scientists. The DOD, since 1988, has been conducting nationwide surveys of pollution of the Indian seas. Both have reported environmental degradation, especially in the creeks and estuaries in industrial areas.

A letter from the then Prime Minister, Mrs Indira Gandhi, in the early 1980s to all the coastal governments pressed a panic button for coastal stakeholders. The letter directed that 'a no-development zone' be declared up to 500 metres from the high tide line along the coastal stretches. There were several protests in the media and