CHAPTER - II

SUSTAINABLE DEVELOPMENT:

Application and Relevance to Tourism Development
Development needs to be comprehensively defined and understood, not only in terms of economic growth but expansion of productivity capacity also. The crudest, and most familiar, indicator of development is gross national product (GNP) which as a measure of development has certain limitation. First, GNP measures ‘productive’ activity in a very narrow way. It is a measure of ‘formal’ sector activity, whether in the primary sector (such as agriculture) or in manufacturing and services. The ‘informal sector’, in which markets exist but are not fully reported statistically, and in which people produce for their own consumption, is not represented in GNP figures. The GNP is a very crude instrument for measuring economic development. All measurable production activity is considered the same, whether it is channelled towards arms expenditure or the maintenance of a primary health-care system.

From an environmental standpoint, the GNP is particularly inadequate guide to development since it treats sustainable and unsustainable production alike and compounds the error by including the costs of unsustainable economic activity on the credit side, while largely ignoring processes of recycling and energy conversion which do not lead to the production of goods or marketable services. Clearly a definition of sustainable development needs to take account of the wide variations in the industrial and productive structures of different countries. ‘Development’ in the United States, as its economy is currently organized, requires 370 times as much energy per capita as it does in Sri Lanka. Does this imply that United States cannot achieve sustainability, given its
economic structure? Or that Bangladesh cannot achieve ‘development’,
given its economic structure?

CONCEPT OF CARRYING CAPACITY

The most important feature of the dynamics of ecosystem is its
‘evolutionary adjustment’. The homeostatic controls that exist within
natural communities is only effective if these ecosystems are protected
from rapid change. Ecological succession typically culminates in a climax
system of high diversity, large biomass and high stability. Maximizing
agricultural production inevitably leads to the removal of mature
ecosystems or steps to prevent their developing, at the cost of confounding
nature’s strategy of maximum protection or adaptation. In essence
agricultural development implies a necessary threat to ecological
succession, in which costly energy subsidies replace natural processes.
Sustainability, in this primary sense, is not only endangered by ecologically
unwise agricultural practices, it is endangered by all agriculture. The
four properties of agro-ecosystems – productivity, stability, sustainability
and equitability are relatively easy to define, but must less easy to measure.
Productivity is the yield or net income per unit of resource. Stability is
‘the degree to which productivity is constant in the face’ of small
disturbances caused by the normal fluctuations of climate and other
environmental variables. Sustainability refers to the system’s ability to
maintain productivity in the face of a major disturbance. The loss of
sustainability is then expressed through declining productivity or a sudden

collapse in the system. The equitability expresses the distributive aspects of the agro-ecosystem.

These properties of an agro-ecosystem can also be regarded as indicators of the performance of that system. Thus, traditional agricultural systems, such as shifting cultivation (swidden), are generally low in productivity and stability, but high in equitability and sustainability. They are also relatively equitable. The introduction of new technology, such as the high yielding rice varieties associated with the Green Revolution, greatly increase the productivity of the system but exposes the system to other hazards, notably attack from pests and diseases. More recent improved varieties have served to improve the stability of the agro-ecosystem without losing its high productivity, but sustainability is still low, largely because of the extensive use of chemical inputs to the system.

The concept of sustainability received its greater boost from the publication of the World Conservation Strategy (IUCN 1980) and a series of related documents (UNEP 1981). In addition, the Strategy explicitly linked the maintenance of ecological processes and life-support systems.

The World Conservation Strategy identified, although it did not elaborate upon, the relationship between the productive capacities of natural resources and their human exploitation. The interest of human beings could not, ultimately, be divorced from that of the species which they utilized, since natural species were located in food chains and these food chains served the interest of human populations. In the view of the

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1. Ibid
World Conservation Strategy, subsistence communities needed to be better equipped to utilize resources in a sustainable way. In many respects, then, the publication of the World Conservation Strategy marked an important watershed in thinking about the environment and development. The problem of initiating sustainable development alternatives are frequently undermined by the pursuit of illusory and detrimental policies.

The search for more sustainable development necessarily involves two interrelated dimensions. First, we need to consider to what extent we use energy efficiently within agriculture at the present time, since the development of more sustainable options may depend critically upon making better use of the resources we already command. Second, we need to consider population together with ecological sustainability and energy efficiency, since the prospect of a decline in fertility in most parts of the South provides an incentive for more sustainable agricultural practices. The conversion process, through which energy finds its way into agricultural production, can be depicted in terms of alternative energy 'pathways'.

![Energy pathways in peasant agriculture](image)


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In those developed countries which have made the transition to a capital intensive agriculture, including countries like Spain, India, Pakistan and Korea, the conversion of energy has been the principal means through which food production has kept ahead of population, and the size of agricultural population has been reduced. Fossil fuels, both as requirements of mechanical traction and high-technology biochemical crop production, have been used to accelerate the production of agricultural goods. All this should cause us to question both the desirability and the inevitability of agricultural 'modernisation'. First, any increased reliance on energy-intensive modern agriculture would require a concomitant increase in oil imports and second, energy-intensive ‘modern’ agriculture uses inputs that are high-priced and beyond the reach of the vast majority of the rural population.

POPULATION GROWTH AND CARRYING CAPACITY:
The concept of ‘sustainability’ makes little sense, however, unless we also consider the impact of rapid population growth on physical resource base. Clearly the potential exists for more energy-saving technologies to feed more people, and for successful replacement of the natural resources we use without accompanying environmental degradation. To what extent is the net increase in population throughout the developing countries a major obstacle to the realization of sustainable objectives? Population trends for the developing world provide a bleak picture so far as ‘sustaining’ people at an acceptable quality of life is concerned. World population approached 4 billion in 1975; it is expected to double and reach 8 billion by 2025.1

In terms of sustainability what matters most is not so much the net increase in population at the global level, but the rate of change in population in the most critical regions. At the moment population growth rates tend to be highest where basic needs are not met, particularly in Africa and some Latin American and Asian regions.

### Projected changes in population, 1975-2000 (millions)

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<thead>
<tr>
<th></th>
<th>Total population</th>
<th>Net growth 1975-2000</th>
<th>Average annual rate of growth</th>
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<tr>
<td></td>
<td>1975</td>
<td>2000</td>
<td>(%)</td>
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<tr>
<td>Developed countries</td>
<td>1131</td>
<td>1323</td>
<td>17</td>
</tr>
<tr>
<td>Less developed countries</td>
<td>2959</td>
<td>5028</td>
<td>70</td>
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Certainly, the fastest population growth rates often occur in countries with low per capita income, poor social capital, heavy reliance on labour-intensive agriculture and weak institutional infrastructures. Under the low-input farming systems that dominate most areas of Africa, there is little likelihood that sustainable development can be achieved within the present context.


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<th>1975</th>
<th>2000</th>
<th>Change</th>
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<tr>
<td>Deserts</td>
<td>792</td>
<td>1284</td>
<td>+492</td>
<td>+62</td>
</tr>
<tr>
<td>Closed forests</td>
<td>2563</td>
<td>2117</td>
<td>-446</td>
<td>-17</td>
</tr>
<tr>
<td>Irrigated areas</td>
<td>223</td>
<td>273</td>
<td>+50</td>
<td>+22</td>
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<tr>
<td>Irrigated area damaged</td>
<td></td>
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<tr>
<td>by salinization and</td>
<td></td>
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<tr>
<td>related problems*</td>
<td>111.5</td>
<td>114.6</td>
<td>+ 3.1</td>
<td>+ 3</td>
</tr>
<tr>
<td>Arable land</td>
<td>1477</td>
<td>1539</td>
<td>+ 62</td>
<td>+ 4</td>
</tr>
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</table>
It is important to ask whether countries like India, which recently achieved self-sufficiency in food at the national level, will be able to maintain that achievement given that 4.7 billion tons of soil are lost in India each year, more than in any other country. In place of 'food' security we might argue like some, that environmental security is even more pressing.

SUSTAINABLE DEVELOPMENT: A NEW PARADIGM?

The term 'sustainable development' was used at the time in the early 1970s. Since, then it has become the trademark of international organisations dedicated to achieving environmentally benign or beneficial development. There term has served to catalyse debate over the relationship between economic change and the natural-resource base. The term 'sustainable development' suggests that the lessons of ecology can, and should, be applied to economic processes. It encompasses the ideas in the World Conservation Strategy, providing an environmental rationale through which the claims of development to improve the quality of (all) life can be challenged and tested. To what extent though does sustainable development provide an alternative paradigm, or system of meaning, as well as a focus for improving environmental policy and management?

Sustainable development required a broader view of both economics and ecology than most practitioners in either discipline are prepared to admit, together with a political commitment to ensure that

development is 'sustainable'. Is it possible to undertake environmental planning and management in a way that does minimum damage to ecological processes without putting a brake on human aspirations for economic and social improvement? The Environmental assessment could be a major operational tool to approach sustainability. It could be applied at the project level as well as at the policy level. It means that the environmental concerns are fully considered in the decision making process. It is applied to predict and mitigate the adverse affect of development projects. This is a flexible, multipurpose planning-oriented approach with continued adaptation in methods and procedures and institutional adjustments for balanced resource-environment capacity. The project level environmental assessment should be complemented by strategic environmental assessment of economic policies, plans and programmes. It must consider policy, legal and administrative framework, analysis of alternatives, mitigation exercise, management and training and monitoring. It must reduce the project conditionality, avoid costs and delays, promote inter-agency policy coordination, encourage review of the potential environmental assessment exercise.

One approach that has gained some currency is that of 'eco-development'. The advocate of eco-development include those who regard an alternative approach as essentially political. The objective is not merely to identify the limitations of existing approaches; it is to advocate

alternatives that deal effectively with 'the power variable'. Clearly advocating sustainable development or eco-development in principle does not commit governments or international organizations to its achievement in practice. 'Eco-development' is also the term given to the planning concept originally advocated by UNEP. It was defined as 'Development at regional and local levels ........ consistent with the potentials of the area involved, with attention given to the adequate and rational use of the natural resources, and to applications of technological styles'.

It is, as observed, long way from the ethically committed and integrated approach. The practical attention is that the environmental alternatives are matched by a concern to incorporate social and cultural processes within the eco-development approach. In its early stages this had the rather benevolently paternalistic imprint of so much planning methodology, preparatory education to create social awareness of ecological values in development for the satisfaction of basic needs and the development of a satisfactory social ecosystem'. The eco-development is represented by a triangle, one side of which is basic needs, the second self-reliance and the base ecological sustainability'. Each of these variable needs to be considered, since development will not be sustainable unless poor people are involved in meeting their aspirations. However, it should be clear that the environment and development are means, not ends in themselves. The environment and development are for people, not people

1. UNEP, 1975.
for environment and development. The need is to contrast 'environment thinking' with 'development thinking' and 'livelihood thinking'. The effort should be to ensure sustainability, i.e. all development options and activities are to be adjusted to and be consistent with the 'carrying capacity' of the global biosphere and regional eco-systems.

Environmental Sustainability means maintaining life support system and refers to the capacity to assimilate waste and rejuvenate raw materials. The environmental sources and sites need to be maintained, if they are reduced, then one has to make necessary options. Levels are being maintained through exhaustion and dispersion of one-time inheritance of natural capital such as top-soil, water, forests, bio diversity and ecological processes. The human economy is reducing further potential biophysical carrying capacity and our pattern of growth based on accelerated raw materials and energy can not be sustained over long term. It is liquidating assets for further generation.

The moot question is that we must define and understand the limits of environmental sustainability. And this is only possible when we understand the environmental impact, that is it is $I = P \times A \times T$ or population $\times$ Affluence (consumption capital) + Technology, when $(T_p)$ can be unfolded into: $T_p = \frac{P_{xy}}{y_p T_{pxy}}$, where $P$ is population, $y/p$ is per capita output (affluence) and $T/P/Y$ is throughout intensity per unit of output (=technology). It means that environmental sustainability occurs when the impact of throughout is kept below carrying capacity. This could be by an exercise of limiting population, affluence and improve technology.
There are primarily four approaches or ways to environmental sustainability and they should be conceived and applied as mutually reinforcing instruments of policy analysis. Among these, the first is sound economics, which is 'widely espoused but not commonly applied. It means measures to mitigate three massive failures: information failure, market failure and policy failure, which jointly lead to over-use of environmental capital assets. The economists have been slow to internalize environmental externalities and incorporate environmental considerations. Many of them are traded but unpriced as the current economics works inefficiently with non-marketted goods such as elements of natural capital. The full cost principles or 'the cradle-to-grave' approach is imperative for example the purchase price of nuclear electricity should internalize the cost of wastes, storage for necessary thousands of years.

Second approach is to apply fiscal incentives and repel environmentally perverse incentive, for example, subsidization of deforestation as a requirement to access, credit, subsidized prices for fertilizers which worsen pollution and accelerate pest resistance. Politically and practically less easy is the promotion of fiscal means like adding tax on petroleum and products and on non-renewable energy. The efforts should be to reduce material and increase resource efficiency. The public revenue has to be raised.

Third is the environmental accounting which warns us about liquidation of potentially renewable resource exceeds their regeneration
rates. Environmental accounting clarifies what is liquidation of natural capital from what is income. Not may countries keep environmental accounting, that is involve treating change to resource stocks as depreciation, deducting it from gross income or product in order to arrive at an adjusted level of net income. When resource can not be rejuvenated, national accounting require a special treatment and adjustments.

The last but not the least is the Environmental assessment which could be a major operational tool to approach sustainability. It could be applied at the project level as well as at the policy level. It means that the environmental concerns are fully considered in the decision making process. It is applied to predict and mitigate the adverse affect of development projects. This is a flexible, multipurpose planning-oriented approach with continued adaptation in methods and procedures and institutional adjustments for balanced resource-environment capacity. The project level environmental assessment should be complemented by strategic environmental assessment of economic policies, plan and programmes. It must consider policy, legal and administrative framework, analysis of alternatives, mitigation exercise, management and training and monitoring. It must reduce the project conditionality, avoid costs and delays, promote inter-agency policy coordination, encourage review of the potential environmental assessment exercise.

1. (Goodland, R. 1996). The Analysis of Environmental Sustainability from concepts to applications, Sustainable Development n. 131, p. 2-21).
SUSTAINABLE DEVELOPMENT: SOME LESSONS

The life support system which have enriched our planet and given us such a diversity of species are fragile not only in tropical forests. The environment is frequently placed in jeopardy by development. At the same time, we are heavily involved in recreating nature, reassembling the parts and cloning the genes. We are literally 'producing' nature for the first time, while we are busily engaged in destroying it for the last time. It is important what meaning we attach to 'sustainable' development and the contradictions which sustainable development implies. The constant reference to 'sustainability' as a desirable objective has served to obscure the contradictions that 'development' implies for the environment. In exploring the relationship between development and the environment we will need to construct a model of how it has changed over time: a historical account of the environment and development.

Equally important, we will need to make clear the international linkages, which provide the transformation momentum behind transfer of capital, labour and natural resources. In exploring sustainable development, we are necessarily concerned with all three: with capital and labour, as well as the 'natural' resources that human beings have 'naturalized' through their own efforts. It should also be clear that the environment whatever in geographic location, is socially constructed. The environment used by ramblers in the English Peak District, or hunters and gatherers in the Brazilian Amazon, is not merely located in different places; it means different things to those who use it. The environment is transformed by economic growth in a material sense but it is also
continually transformed existentially. The environment crisis in the South was argued that the political economy of development needed to incorporate environmental concerns in a more systematic way. Since the late 1960s there has been considerable discussion of development, both as a concept and in concrete historical discussion of Important differences exist between new-classical and Marxist interpretations, and within each of these competing paradigms. The perspective adopted is that of political economy, in which the outcome of economic forces is clearly related to the behaviour of social classes and the role of the state in accumulation. The environment has suffered more neglect at the hands of social scientists than any comparable subject.

Increasing concern with environmental problems in developing countries and the failure to relate these problems to development issues led to the establishment of the United Nations Commission on Environment and Development in November, 1983. The main objective of the Commission was to focus on the causes of the environmental problems rather than the effects of environmental degradation. The main objective was to undertake public hearings in various countries, at which members of the public and community leaders could give evidence about the relationship between development and the environment.

The impact of this interaction was great in several manner. Consider the three main objectives stated in the World Conservation Strategy (1980): the maintenance of essential ecological processes; the preservation of genetic diversity, and the sustainable utilization of natural

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resources. These objectives clearly require social and economic interventions of various kinds. Even in a national park or biosphere reserve, these interventions are likely to succeed only if the environment is accorded as much priority as other variables in the development process, such as the growth of marketable commodities, or the need to meet higher levels of personal consumption. The type of intervention open to environmental planners in developed countries varies according to the type of conflict over the environment. There are broadly three types of conflict: in the sphere of production, in the sphere of consumption and in the sphere of nature. In the sphere of production, 'intervention has been necessary to overcome market failure in the regulation of externality effects'. Another type of intervention is in the sphere of nature conservation, where conflicts have been generated over the effects of modern agriculture on flora, fauna and their habitat. These conflicts, as they often concern the transformation of natural species into commodities, with the usual rights of ownership and control corresponding to commodities. The conflicts that arise in the sphere of consumption along are familiar to most in the developed countries, but of much less importance in most parts of the South.

These methods of intervention were designed to facilitate, rather than seriously curtail, the production activities which are central to industrial economics. Most environmental responses to the existence of conflict have 'protective and are reactive responses'. A managerialist view of the environment corresponds with what O'Riordan (1981) has termed a 'technocentric' (rather than an 'ecocentric') perspective. The assumption is that an optimum balance of natural-resource uses can be
found, which can combine productivity with conservation goals in agriculture and forestry. Those who are convinced of the technical feasibility of identifying optimum resource uses also assume that long term interests in the environment are convergent. The façade of technical objectivity' obscures the fact that environmental management is in its infancy. It is still concerned with 'techniques' rather than policies. Despite appearances to the contrary, environmental planning is therefore often toothless.

ENVIRONMENTAL MANAGEMENT IN DEVELOPING COUNTRIES

Environmental management is not a politically neutral, scientific activity. The need for environmental management emerges from the contradictions of economic growth specially in industrial society. The ineffectiveness of environmental interventions is closely related to the power of established interests in this society. The situation in most developing countries is even less conducive to effective environmental interventions than in the case of developed countries. This is partly because of the emphasis placed on project planning, which is mostly done in a vacuum created by the death of the development planning dialogue. The methods employed in project planning, particularly cost-benefit analysis, are essentially means to minimize the risk to capital. Despite the inclusion of social and environmental criteria in cost benefit analysis, they rarely carry the same weight as financial criteria in determining the fate of a project.
In the light of these observations it is useful to set out the differences between 'environmental planning' in the narrow, technical sense alluded to above, and 'development planning' as a wider exercise in designing more appropriate policies. The table illustrates how each methodological characteristic of the planning process is conceived differently: the variables under consideration, the kind of analysis undertaken, the breadth of options and time horizons and the policy instruments on which emphasis is placed. The broader conception of development/environmental planning is more holistic. The emphasis in this more integrative approach is on reducing the need for 'reactive' environmental planning, by seeking to remove the most environmentally harmful effects of 'development'.
Many rural people using simple technologies in developing countries possess a fund of information about their environment and can effectively manage that environment in ways that are sustainable in the long term. However, the experience and knowledge of such people is only rarely incorporated in the formal structure of rural environmental planning in developing countries. First, it is clear that among indigenous people, (tribal or 'native' peoples) of developing countries, sustainable practices are adhered to because traditionally they were the only guarantee of survival.

It should be remembered that, within most indigenous groups whose livelihoods are not dependent on commodity production for the market, there is no internal tendency towards the maximization of profits or the creation of an economic surplus. The more intensive use of traditional techniques is linked to a strategy for minimizing risks and widening options in the face of the insistent process of capital accumulation. In the course of development indigenous environmental knowledge is often lost, because it becomes less relevant to the new situation and because it is systematically devalued by the process of specialization around traditional environmental knowledge is not only devalued by development institutions, it is also largely overlooked in the environmental management literature.

Clearly indigenous people 'see' nature differently, precisely because their practices acknowledge its centrality. Studies in ethnobotany reveal that people in societies characterized by simple technologies are
aware of differences in nature which are invisible to specialists from outside.

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<th>Practice</th>
<th>Theory</th>
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<td>Rational</td>
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(a) Societies of production

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<th>Practice</th>
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<td>Irrational</td>
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(b) Societies of appropriation

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<th>Practice</th>
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<td>Irrational</td>
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Their knowledge is based on the production of use values and the adaptation of their agricultural practices to ecological conditions. Indigenous technical knowledge informs these practices, in conserving energy, in cultivating crops, in combination with animal rearing, and in other farming/conservation techniques. The use of indigenous knowledge is linked to the strategies which the culture has devised for coping with risks. These micro-level practices protect against vicissitudes in climate, attack from pests and genetic erosion, through maintaining diversity, in the ecological system, in crops and in genetic materials. The components of these strategies allow a sustainable system to be reproduced in which biological nutrients are conserved, and food consumption meets different nutritional needs. It is sometimes argued that social movements in developing countries are unlikely to embrace environmental demands, since the contradictions of the development process leave poor people with little option but to make ever increasing demands on their resource base. They are that those who constitute the 'movement' are engaged in a
livelihood struggle and, secondly, that they recognize that this livelihood struggle can be successful only if the environment is managed in a sustainable way.

Among many developing countries, such movements have come to the forefront. However, we confine to movement specific to South Asia. The popular interpretation of India's Chipko movement is that women have acted spontaneously since the 1970s to protect trees from being felled. However, this misrepresents the movement's history and objectives. They point out that since the last century the state has continually encroached upon the rights and privileges of people to forest resources. The resistance to the encroachment has taken traditional Gandhian form, in the power of satyagraha, or peaceful non-cooperation. In the forest areas of the Garhwal Himalaya the style of protest which had originally been directed at the British, for attempting to sell off community forests, was revived and used against the Indian state. In its revived form the civil disobedience practised by Chipko adherents has taken on an increasingly ecological character. "Although it had its roots in a movement based on the politics of the distribution of the benefits of resources, it soon became an ecological movement rooted in the politics of the distribution of ecological costs".

The history of struggle for control of India's forests is an illuminating one. Before the full impact of colonialism, conservation strategies appeared to play a large part in the lives of Indian hill people. Forests were managed as common resources with strict enforcement of informally agreed codes of management. Large tracts of natural forest
were maintained through this careful husbandry. The colonial impact on forest resources seriously undermined these strategies. The conservation of forests, under colonial rule, was directed at the maintenance of forest revenues rather than environmental objectives. This involved refusing local people their traditional rights to use forest resources. It also led to unsustainable practices in the reserved areas, where the stability of forest ecosystems was destroyed and ecologically unsound practices were introduced.

It is not possible to take up all other movement like Silent Valley, Western Ghat, Narmada Bachao and Khejarli movement. Neither it is desirable to take movement in other countries like Greenbelt movement in Kenya and the Mexican Environment movement. However, it is important to mention that movement against rapid tourism developments are in offing, e.g. in Kerala Sea Beach activities causing uneasiness among the people of Kovalam or in Goa and they will become potent force very soon when the index level is crossed. It is necessary that environmental management must make use of social movements dedicated to environmental ends. It must also make use to the knowledge and experience which people possess about their environments.

**SUSTAINABLE TOURISM DEVELOPMENT AND ENVIRONMENT**

Tourism is a double edged sword—it can be a potential blessing and it can be a blight. Many tourism destinations benefit from the flows of tourists and the hard currencies they bring. However, they have not
completely avoided some of the tourism's negative consequences – such as crime, commercialisation of culture, changing social norms and values and the negative impact on the environment. It must be remembered that tourism is an environment-intensive industry. It is rather important to give serious thought to the following:-

— How to develop tourism to create a sustainable economic and health environmental basis for the future.
— How to limit tourism's negative social and cultural impact
— How to develop the industry in such a way that the local communities can benefit.

The nature of tourism is changing rapidly. New technology, more experienced consumers, global economic restructuring and environmental limits to growth are only some of the challenges facing the industry. The challenge is to be able to adopt to these rapid changes and create a new world of tourism. The consumers have changed and with them the organisational and managerial principles. The motivation of today's tourists is different from those of the old. For the old tourists, travel was a novelty. The attitudes of the new tourists are very different from that of the old. Old tourists had a healthy disregard for the environment and cultures of the host countries they visited. Today, with a new breed of tourists, there is a growing "see and enjoy, but do not destroy" attitude. The competitive success of tourism destinations – and the industry is fiercely competitive – can be achieved if the following strategies are implemented: put the environment first, let tourism become an engine of
growth, improve product development and develop a dynamic private sector.

Appropriate relationships between tourism and the natural and sociocultural environments, which places responsibilities on both the tourist receiving countries and the tourists themselves, were further specified by the WTO in 1985 during its Sixth General Assembly through its adoption of the Tourism Bill of Rights and Tourist Code. This statement contained the following provisions:

- In the interest of present and future generations, nation/ states should protect the tourism environment which is the legacy of all mankind. After Manila declaration, the joint declaration of WTO and UNEP which formalized inter-agencies coordination on Tourism and Environment the over all improvement of the various components of man’s environment are among the fundamental conditions for the harmonious development of tourism. Similarly rational management of tourism will help to protecting and developing the physical environment and the cultural heritage and also improving the quality of life.

- The populations constituting host communities in places of transit and stay are entitled to free access to their own tourism resources. The Hague Declaration on Tourism, adopted at the Inter-Parliamentary Conference on Tourism (organized jointly by the Inter-Parliamentary Union and the WTO) in 1989 set forth several principles for development of tourism. This declaration also

pointed out the essential relationship of the environment and tourism, as follows (WTO 1989): "An unspoilt natural, cultural and human environment is a fundamental condition for the development of tourism. Some tourist activities are not sustainable, and, therefore, scientific approach for sustainable tourism development is required. Forms and styles of sustainable development of tourism should be evolved which conserve and not consume the environment."

Such a development has to explore the relationship between the natural resources and the visitor community, with special regard to its conservation through sensitive planning and management. Sustainable tourism was defined by the Globe 90 Conference on Sustainable Development as the management of tourism resources in such a way that fulfils economic, social and aesthetic needs while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems. In the words of Inskeep, continuous maintenance of environmental resources and cultural integrity while still bringing equitably distributed socio-economic benefits of tourism to residents of the area is the essence of sustainable tourism development. According to the World Tourism Organisation (1993) "Sustainability" is a more powerful concept of defining an appropriate approach to tourism development. It encompasses the requirements of all forms of tourism. The most successful tourism development of the future will be sustainable that is they will not over consume the resources used to attract tourists.

It is both a means to an end and an opportunity for achieving that end; and tourism can well be used as a means of preventing environmental degradation. And yet tourism can and must operate as a powerful force in the world for protecting the environment and for conserving natural and historic resources (Globe '90). More and more people are coming to realize the importance of the environment where tourism is concerned. The principles governing sustainable tourism are set forth in the Bruntland Report: Our Common Future (1987), in terms of 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. WTO's own definition of sustainable tourism is that it is something that satisfies the needs of today's tourists and of the host regions and at the same time protects and increases opportunities for the future.\(^1\)

The environment concept, as defined thus by WTO, and by the United Nations Environment Programme (UNEP), is very broad, embracing, as it does in the case of biosphere, ecosystems and humanized space, where socio-economic aspects manifested in architectural historic and cultural resources are all in harmony.

Hall and MacArthur (1993), speak of tourism as preserving the productive base of the environment and at the same time conserving the integrity of the biomass and of ecological processes, and providing services without degrading the other value, including cultural values, but explicitly seeking to promote biological and cultural diversity. WTO

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sees sustainable development not only in terms of capacity of the physical system to withstand a given pressure but also in terms of the possibility for the economic system to provide all infrastructures and facilities capable to satisfying the demand represented by tourism.\(^1\)

The principles underlying sustainable tourism can be stated along the lines suggested by Eber who envisages :-\(^2\)

- moderation in the use of resources;
- reduction in excess consumption and waste;
- maintaining diversity;
- tourism to be included in planning;
- support for the local economy;
- involving the local community;
- personnel training;
- responsible marketing; and
- stimulating research.

Pigram in his turn relies on the practical elements in strategy for sustainable development of tourism.\(^3\) Development of the locality in the special sense of a locus reflecting local architecture; and sensitive in the original character of the heritage, conservation, protection and promotion of the qualities of the resources underpinning tourism; budget provision for novel tourist attractions – attractions based

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2. Eber S. Beyond the green horizon - Principle of Sustainable tourism, gold mining - Survey, Tourism Concern
on local qualities and developed in such a way as to complement those local resources; development of services for tourists such as will enhance the local heritage and resources; and support for growth where this implies incremental resources and not where it is destructive or when it exceeds the carrying capacity of the natural environment or the limits of the social environment, i.e. beyond the point where the quality of life of the community is jeopardized;

MacGregor, divides up the problem of sustainable tourism according to four possible angles of approach. (i) Physical (ii) Technological (iii) Political and (iv) social. Thus, under the physical approach the following principles should be respected:

1. ensure that the human impact on the planet, as well as at the local level remain within sustainable limits;

2. maintain the stock of biological assets within a given region;

3. ensure that the depletion of non-renewable resources is kept to minimum;

4. promote long-term economic development in such a way as to augment the benefits of a given stock of resources and to maintain the natural heritage;

5. secure an equitable sharing of costs and benefits deriving from the use of resources and of the environment itself;

— strive for effective participation by the community and interest groups in decision making, where there are likely to be involved; and

— promote values conducive to sustainability.

In applying the measures in question the aim will be to establish an alarm threshold so that the relevant corrective action can be taken in order to establish (a) carrying capacity (b) social and physical stress and (c) resistance of the structures.

Technological change is the primary requisite for achieving sustainable development but, as well all courses of action, problems must be approached scientifically, via research, market study, technology, an awareness of changes in consumption, and in mentalities, and a careful analysis of the evolution in living patterns. Thus, as Globe '92 goes on to say:

— we cannot sustain tomorrow with yesterday’s approach;

— sustainability is not a fixed plan on paper, but a process of change; and

— it can be achieved by any number of routes, but all of them depend on mutually reinforcing policies and actions and the collaborations of all sectors.

Sustainability, it must be remembered, is a dynamic concept, in constant evolution, involving, interests; values; and education, themselves
undergoing continuous change and needing to be monitored unceasingly if not only sustainability but total quality too, are to be secured.

The WTO 1993 study on “Sustainable tourism development: A guide for local planners” distinguishes six stages in development projects: project identification; project screening; project planning and feasibility; project funding; project implementation and project management together with market planning and market strategy. In 1992, Secretary-General Antonio Enriquez Savignac offered the Earth Summit at Rio three propositions:

1. Travel promotes environmental awareness;
2. Well-managed tourism is a good friend of the environment.
3. A successful tourism industry needs a high-quality environment.

With the desire of reinforcing the Secretary-General’s Rio message, the ninth General Assembly of WTO decided that World Tourism Day on 27th September, 1993 should be devoted to sustainable tourism development under the theme “Tourism Development and Environmental Protection: Towards a lasting Harmony”.

After the Rio Earth Summit, WTO in cooperation with the World Travel and Tourism Council (WTTC), has been trying to summarize and to distil from AGENDA 21 the main postulates arising from the 1992 Earth Summit which should be applicable to tourism. The guiding principles, based on the Rio Declaration on Environment and Development, have been identified and they are as follows:
• Travel and tourism assist people in leading healthy and productive lives in harmony with nature;

• Tourism should contribute to the conservation, protection and restoration of the Earth’s ecosystem;

• Travel and Tourism should be based upon sustainable patterns of production and consumption

• Tourism, peace, development and environmental protection are interdependent;

• In order to achieve sustainable development, environmental protection shall constitute an integral part of the tourism development process;

• Tourism development issues should be handled with the participation of concerned citizens, with planning decisions being adopted at local level

• Tourism development should recognize and support the identity, culture and interests of indigenous peoples;

• International laws protecting the environment should be respected by the worldwide travel and tourism industry.

Tourism seek safe, clean, interesting, and varied environments. The long-term viability of the industry is dependent on maintenance of natural, cultural, and historical attractions. The very existence of the industry can be a stress on the carrying capacity of the environments it
uses. More than other sectors of the world economy, tourism is dependent on, and sensitive to, the qualities of the natural and human environment. The interesting natural features, cultural experiences, and varied milieu are the assets for the tourism industry. Maintaining that capital is the central tenet of sustainable tourism.

Tourism involves demand for significant amounts of energy and consumption of many goods and services. Increasingly we are discovering that without responsible management practices the industry can degrade the very features on which its prosperity is based. As well, the actions of people in other economic sectors affect the quality of, and access to, the environment. These actions can degrade the environment on which tourism depends, so tourism management needs to be integrated with management of other economic sectors. Thus, particularly in sensitive environments, the tourism industry can be a significant force for maintenance and improvement, or for degradation. The direct linkages between tourism activities and environmental quality mean that the industry has much to offer, and to gain, from being a leader in sustainable development. The fact is true particularly in developing economies, where the industry is both a source of support for development and a vehicle for cultural contact. From the Brundtland Commission (the World Commission on Environment and Development, 1987) and from the 1980 World Conservation strategy began the popularization of sustainable development as a goal for human society.

Within the discipline of ecology an area of specialization has been developed which aims at translating knowledge of ecological function
into more effective management of human activities. This specialization is environmental management. Some of the key concepts used within this specialization are:

- the ecosystem, any grouping of plants and animals interacting within a particular physical environment
- environmental impact assessment, where planners attempt to predict what effects a set of activities will have, and determine how to enhance benefits of the activities and reduce their negative impacts
- carrying capacity utilization, where managers attempt to determine the biophysical limits of productivity of various natural resources.
- Environmental monitoring, where planners and managers seek to test how accurate their predictions have been, and use the results to determine what changes are required to achieve better results.

The experts present at Globe '92 agreed that many different building blocks were needed to support sustainable tourism. These included:

- actions to put in place the institutional framework for sustainable tourism, including long-term strategy development, and the creation of broader policy and planning structures.
- actions to protect the resource base central to the success of the industry.
• actions to establish partnerships with host communities and with private enterprise to build sustainable tourism.

• better inventory and monitoring systems for both the resource base and the actions of tourists.

• use of improved technology and design to minimize negative impacts

• actions to take advantage of market opportunities for a greener tourism product.

CARRYING CAPACITY AND ECOSYSTEM EVALUATION APPROACH

A central objective of management is to sustain what we value. If full carrying capacity utilization can be achieved, there will be maximum economic activity from the resources available within the environment. Sustainability of tourism, in particular, relies on ensuring that carrying capacity is not exceeded. A healthy tourism industry can only exist at levels of activity below the threshold where the natural or cultural attributes of a destination are threatened. The tourism industry can benefit from management approaches that anticipate and prevent the types of problems that occur when carrying capacity is exceeded. A simple definition of carrying capacity as a single threshold value is inadequate in nearly all cases because of these factors. Instead, carrying capacity needs to reflect the sensitivity of different attributes of the environment to different types and levels of impact or use. Planning using an ecosystem based approach
facilitates achievement of this objective, but this approach is not yet commonly used.

Many manuals describe how to complete EIAs. These manuals often guide planners through long lists of environmental attributes that can be part of a site or regional environmental inventory. However, we are learning that we must establish the links between these attributes and the benefits obtained from them. This step helps the planner to focus on achieving optimal results in the development process. He or she can then ask, how do attributes of the environment provide opportunities for tourism development? How do environmental attributes limit the potential because of the characteristics of the site, or because within the ecosystem based framework, optimal carrying capacity utilization must be sought. The complex balance must be maintained between human desires and the ability of the eco-sphere to serve these needs over the long-term. Our measurements of this objective must reflect:

- the range of biophysical capacities of the environment
- the range of values supported by each environment
- the sensitivity of each part of the environment to our actions
- the impacts of our actions on the capacities of ecosystem and the resulting effects on the ability of the environment.

The sensitivity of the key values to change.

The ecosystem approach has the potential to lead to sustainable development within the tourism industry. In most nations, sectoral interests like tourism are managed in different government departments from, for
example, the economic planning or environmental management interests. This separation means that effective integration of tourism interests require special attention. Some promising examples of integrated sustainable development strategies which respect tourism sector interests are now in place. In Prince Edward Island, Canada, a comprehensive conservation strategy has become the long-term plan for the entire province. Tourism interests have now gained an equal footing with agriculture and fisheries in provincial objectives. In the Maldive Islands, comprehensive integration of tourism planning into the environmental and development planning for each island has yielded strong control for each resort. Resorts are developed according to ecologically-based site requirements that affect density of development, site plan and impacts on shore and reef areas. A sustainable development strategy for Bali was completed in 1992. The strategy identified the key development constraints and opportunities for the principal economic sectors. The strategy also recommended a division of the island through a form of large-scale zoning. The lesson from these examples is that comprehensive planning and management strategies should be put in place before confrontations occur over use and management of resources. The recent World Tourism Organization (WTO) publication, An Integrated Approach to Resort Development, illustrates some of the advantage of taking an integrated approach to tourism planning, particularly where the resort community is clearly identified as a planning unit.

1. The Bali Development Authority Presentation 1996.
INDICATORS OF SUSTAINABLE TOURISM

Tourism management that includes consideration of natural and cultural environments is more likely to be sustainable. However, managers and administrators in the tourism sector are often overwhelmed with environmental data. Most indicators are quantitative measures (i.e. counts or sizes of things, or rates of change in these measures). Commonly used economic indicators are Gross National Product (GNP) and balance of trade. Indicators of physical conditions include temperature (for weather) and infant mortality (for sanitation and health care). Ecological indicators include the presence of top carnivores, such as eagles for ecosystem health).

Choosing indicators most relevant to tourism managers depend on: 1) the attributes of each tourism destinations and 2) the relative importance of these attributes to tourists who frequent each destination. If, for example, the main objective at a destination is to preserve and continue to enjoy the natural environment, key indicators may be the size of the area under legally protected status, or the loss of attributes that are the focus of protection (e.g. species, ecosystem). If the objective is to reduce the risk of degrading environments used by tourists (e.g. beaches, built attractions, local communities, wilderness trails), the most important indicators may be levels of use, impacts on the biological or cultural value critical to continued use, or changing interest in coming to the area.
**CORE INDICATORS OF SUSTAINABLE TOURISM.**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Specific Measures</th>
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<tbody>
<tr>
<td>1. Site Protection</td>
<td>Category of site protection according to IUCN index.</td>
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<tr>
<td>2. Stress</td>
<td>Tourist numbers visiting site (per annum/peak month).</td>
</tr>
<tr>
<td>3. Use Intensity</td>
<td>Intensity of use in the peak period (persons/hectare).</td>
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<tr>
<td>4. Social Impact</td>
<td>Ratio of tourists to locals (peak period).</td>
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<tr>
<td>5. Development Control</td>
<td>Existence of environmental review procedure or formal controls over development of site and use densities.</td>
</tr>
<tr>
<td>6. Waste Management</td>
<td>Percentage of sewage from site receiving treatment. Additional indicators may include structural limits of other infrastructural capacity on site (e.g., water supply).</td>
</tr>
<tr>
<td>8. Critical Ecosystems</td>
<td>Number of rare/endangered species.</td>
</tr>
<tr>
<td>9. Consumer Satisfaction</td>
<td>Level of satisfaction by visitors (questionnaire based).</td>
</tr>
<tr>
<td>10. Local Satisfaction</td>
<td>Level of satisfaction by locals (questionnaire based).</td>
</tr>
</tbody>
</table>

**Composite Indices*  
A. Carrying Capacity  | Composite early warning measure of key factors affecting the ability of the site to support different levels of tourism.  
B. Site Stress        | Composite measure of levels of impact on the site-its natural and cultural attributes due to tourism and other sector cumulative stresses.  
C. Attractivity       | Qualitative measure of those site attributes that make it attractive to tourism and that can change over time.  

1. WTO. 1993 Indication for sustainable Management of Tourism. Report of the International working group on Indicators of Sustainable Tourism to the Environment Committee of the WTO.  
2. International union for the Conservation of Nature and Natural Resources.
The need for environmental protection to constitute an integral part of the tourism development process as well as the need to handle tourism development issues at local level, have prompted WTO to develop methodologies which will assist member States in achieving these aims. The publication – Sustainable Tourism Development: Guide for Local Planners was prepared after very wide consultations with planning specialists in all the WTO regions, including experts from South Asia and East Asia and the Pacific. In order to ensure the effective control of tourism development, integrated resort development has been a method frequently employed in all parts of the world. Conscious that integrated resort development can have both positive and negative consequences for the environment, WTO undertook in 1991 a survey of six case studies of which two, Nusa Dua in Bali (Indonesia) and Pomun Lake in Kyongyu (Republic of Korea) were chosen from the Asia Pacific region.

AGENDA 21 stresses full participation of women and further that tourism development should recognize and support the identity, culture and interests of indigenous peoples. The keys to sustainability for the tourism sector, is to recognize clearly the limits and capacities of the environment, and to understand the relationships between the environment and the human activities which make up tourism. The success stories show that, through efficient use of energy, sensitive site planning, coordinated action with other sectors, and innovative design solutions, the industry can be a good environmental citizen, respecting and benefiting from the carrying capacity of the environment.