The impact of human activities on coastal zone for sustainable livelihood

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Throughout history civilizations have developed on the water’s edge. For thousands of years humans have had a close relationship with the sea. The vast resources of the oceans are an essential element for the survival of coastal communities. “Everything comes from the sea and everything returns to the sea”. The implication is that since the oceans have limited resources, there is a need to minimize the impact that the growing size and number of coastal community have on marine environments. Meanwhile, growing populations not only put a greater strain on already depleting resources, but also are responsible for the degradation of marine habitats for those resources. Besides, the growing world population, world economy, and world trade have increased the demand for marine and coastal resources. Technology has enabled large companies to widen the range of resources they are able to exploit. Among the practices that contribute to unsustainable development are logging in mangrove forests, mining, dredging, filling, channelizing wetlands, bottom trawling, and dynamite fishing on coral reefs. Additional damage to marine ecosystems comes from land-based activities such as fertilizer and pesticide run off from agriculture, sewage effluent, industrial discharges and urbanization of shorelines etc. All too often, the costs of unsustainable development bear most heavily on the poor. Without a system for managing the ocean’s resources, development will go unchecked. In market economies it is natural for individuals and companies to make decisions in their own financial interests. Unfortunately, short term gains usually overshadow long-term consequences. However, from the types of detrimental practices, it can be inferred that many decisions are being made without considering the long term social and economic costs of degrading the environment. It is from this view that the paper therefore examines impact of technology, economic growth, trade and human activities on coastal land. In addition the strength of sustainability and speculates environmental policy to curb the degradation of coastal zone for sustainable development.

Keywords: Human activities, Coastal zone, Livelihood.

INTRODUCTION

Coastal and marine resources throughout the world have suffered major impacts by human actions since early colonial days. Several reports over the period 1990 -2003 have highlighted the growing nature and extent of the impact of human activities on water basins, marine and coastal environments (Liden, 1993). The coastal zone, between the seaward margins of continental shelves (to a depth of about 200metres) and the inland limits of the coastal plains (to a comparable elevation above sea level) has the highest biological productivity on earth. It is also home to most of the world’s population, who depend on its resources and largely determine its state of ecological health (IUCN, 1991). Six out of ten people live within 60km² of coastal waters, and two-thirds of the world’s cities with population of 2.5 million or more are near tidal estuaries. Thence, within the next 20 -30years the population of the coastal zone is projected to almost double. These pressures linked to ever-increasing
resource consumption and the impacts of expected climate change and sea level rise which have major effects on the coastal zone (Matthew, 1991).

However, people have long clustered their settlements near coastlines, and our species has a long history of interacting with the oceans. But it has been exploited and polluted with waste. Thus, humans have taken from the oceans and also given back — in the form of pollution and its degradation. As a result of human activities both inland and in the coastal zone itself, coastal and marine ecosystems and resources are rapidly deteriorating in many parts of the world because the vast resources of the oceans are, an essential element for the survival of coastal communities. Hence, this paper aims to examine human activities on coastal zone and the strength of sustainability to reduce the degradation of coastal zone.

THE IMPORTANCE OF COASTAL ZONE FOR SUSTAINABLE LIVELIHOOD

The coastal zone can be defined as any area in which human activity is interlinked with both the land and the marine environments. However, coastal resources provide a range of goods and services that are integral to the sustainable development (Table 1) (Liz, 2003). The term “Coastal regions” also covers marine fisheries because the bulk of the world’s marine fish harvest is caught or reared in coastal waters. In addition, Coastal areas help food, shelter, breeding areas, and nursery grounds for a variety of organisms. Coastal regions also provide critical inputs for industry, including water and space for shipping and ports; opportunities for recreational activities such as fishing and diving; and other raw materials, including salt and sand (The World Conservation Union, 1991).

Besides, Ocean plays a critical role in weather patterns and provides a livelihood as well as food for many coastal people. Also, coastal zones are significant areas of economic activity and even areas of high environmental degradation, arising from both lands-based and offshore sources of pollution (Jeffrey et al., 1989). Marine fisheries and aquaculture (the controlled cultivation and harvesting of freshwater and marine organisms) produce close to 100millions tons of fish, shellfish, and edible plants every year, providing a livelihood for about 35million people, most of whom live in developing countries (Creel, 2003).

Over harvesting to meet global consumers’ growing demand for sea food can deplete many species and alter the biological structure of coastal ecosystems. However, coastal resources should not be destroyed by wasteful exploitation and over – utilization when humanity has so much more to learn about them.

ACTIVITIES THAT AFFECTS COASTAL ZONE AREA

The growing world population, world economy, and world trade have increased the demand for marine and coastal resources, although this has reduced the incidence of poverty, but it has been accompanied by serious environmental problems (Liz, 2003). In many countries, populations in coastal areas are growing faster than those in non-coastal areas. At the advent of the 21st century there are 20 cities in the world with a population of over 10 million. Sixteen of those cities are along coastal lines. Growing populations not only put a greater strain on already depleting resources, but also are responsible for the degradation of marine habitats for those resources (Brian, 2005).

According to the report of Independent World Commission on the oceans (1998), over 70% of the world’s fish stocks are being exploited at or even beyond sustainable limits. In some areas, heavy use of fisheries has reduced endemic coastal fish stocks to 10% to 30% of the supply that existed 30 years ago. In addition, pollution from industry, agriculture, and urban areas is degrading the quality of much of the world’s fresh water. “Over 80% of all marine pollution originates from land-based sources which are primarily industrial, agricultural and urban” (UNCED, 1992). Human inputs of nutrients into coastal waters already equal natural sources. Within 20 -30 years they are projected to exceed the natural background by several times. The result will be a considerable extension of the kind of impact now found only in enclosed areas such as the Baltic and Japan’s inland sea (IUCN and UNEP, 1991). Pathogens from sewage also pose health risks to bathers and to consumers of seafood. Many stocks of shellfish have had to be declared unfit for human consumption.

Transportation is a key accelerating factor in economic growth and environmental degradation. Road transport, for example, contributes the major share of air pollution in major cities. One of the results of rapid economic growth has been an associated increased demand for energy; such as fossil fuel, which contributes substantially to air pollution. Also, technology has enabled large companies to widen the range of resources they are able to exploit. Technology has also allowed an exponential increase in the “development” of coastal areas. Among the practices that are contribute to unsustainable development are logging in mangrove forests, mining, dredging, filling, channelizing wetlands, coral reefs (UNCED, 1992).

Moreover, migration is a key factor affecting coastal zones. The figures in China and South East Asia are staggering: 1,000 people arrive in china’s large coastal cities each day, and similar numbers move to the coasts in Vietnam and the Philippines (Creel, 2003). The population of Ecuador’s Galapagos Islands has grown rapidly since the early 1980s; largely due to the arrival of coastal fishermen. Again, as resources reach economic depletion, workers are forced out of jobs. “In the United States alone, coastal areas provide 28 million jobs -many of which will cease to exist if fisheries are contaminated, tourist destinations fouled or public health problems
Table 1. Coastal Resources Goods and services.

<table>
<thead>
<tr>
<th>Ecological</th>
<th>Socio – Cultural</th>
<th>Economic</th>
</tr>
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<tbody>
<tr>
<td>Coastal defense</td>
<td>Housing</td>
<td>Food production</td>
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<tr>
<td>Wildlife habitats</td>
<td>Relaxation</td>
<td>Construction material</td>
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<td>Regulation of Sedimentation and waste discharge</td>
<td>Recreation/sport</td>
<td>Transportation</td>
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<td>Artistic inspiration</td>
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<td>Religions practices</td>
<td>Industrial activities</td>
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<tr>
<td></td>
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<td>Tourism Activities</td>
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Source: Liz, 2003

exacerbated” (Claussen, 1997). Hence, through the loss of jobs and the depletion of economic resources in less developed countries, environmental degradation can lead to an increase in environmental refugees (Brian, 2005).

Furthermore, many of the world’s coasts are becoming increasingly urban. In fact, 14 of the world’s 17 largest cities are located along coasts. In addition, two-fifths of cities with populations of 1 million to 10 million people are located near coastlines (Mathew, 1991). The urbanization of coasts brings with it coastal development (including demands for fresh and sewage treatment) and damage to coastal ecosystems. A study by the World Resources Institute found that mangrove loss was strongly correlated with the growth of cities and ports. Coastal areas worldwide are major destinations for tourism, which represents the fastest growing sector of the global economy. Tourism dominates the economy of some regions and small island states: for example, tourism constitutes 95 percent of the economy of the Maldives and is the country’s only source of hard currency (Liz, 2003). Also tourism can offer some environmental benefits, such as greater appreciation of the value of natural resources. In the Caribbean, for instance, diving tourism has helped raise awareness about the need for reef conservation. But tourism can also have harmful effects. It leads to unsustainable coastal development as infrastructure is built on the shoreline to accommodate tourists.

In all, damming rivers can also have negative environmental effects, such as soil erosion and destruction of ecosystems that support various fish and marine mammals. When concentrated in small, confined, and overcrowded areas such as coastal zones, pollution and other problems pose greater threats to human health. Also, chemicals and heavy metals found in pesticide runoff and industrial effluents also damage human and marine health. The most serious concern worldwide involves persistent organic pollutants (POPs), which can be transported in the atmosphere and have become common in the oceans.

Liberalization may have yielded many economic benefits, but it has also increased the risk of environmental damage due to the failure of markets to register the environmental costs of economic activity. Markets have typically failed to signal the true scarcity of resources, both on- and offshore, and liberalization has often weakened corrective regulations or incentives. Indeed, the worldwide structure of property rights, taxes and subsidies has encouraged over-use of coastal and marine resources. This has often placed these resources under intolerable stress (Independent World Commission on the Oceans, 1998). Meanwhile, the continuing degradation of the coastal zones is also likely to lead to:

i. Reduction in domestic tourism which contributes to increase spending in rural areas and at coastal attractions.
ii. Unemployment.
iii. Social discontent as economic activities are severely reduced and as coastal areas become unsafe for habitation.
iv. Decrease in coastal zone economic investment as activities in this sector become less lucrative and therefore less attractive.

A WAY FORWARD

i. Any factors or activities leading to coastal zone degradation should be taken into consideration for long term conservation of coastal zone.
ii. Need for governmental units to enforce the procedure of environmental impact assessment which are the most commonly used instruments for environmental management.
iii. Examine and research on the identified gaps of the coastal zone research exercise by the integrated multidisciplinary unit of coastal management.
iv. Need to examine the feasibility of viable alternative livelihoods for people in the coastal zone in order to reduce over use of coastal resources.
v. Managing coastal areas requires concerted multi sectoral efforts by government institutions at all levels, the private sector, and community groups as well as sustained political support.
vi. Government should enforce paying of levy or fine by
an individual that carried out any activities on coastal zone. This will definitely minimize the over use of coastal resources.

CONCLUSION

The ability to translate coastal resources into optimum national and local benefits is being constantly threatened by environmental degradation, resource use conflicts and unsustainable resource use. Despite the fact that coastal resources are for survival, the stakes are high, the issues complex and challenging but we must restore and continue to protect our coastal ecosystems.

REFERENCES
