Journal of Engineering Education October - 1998

ENVIRONMENTAL SUSTAINABILITY AND TECHNICAL EDUCATION

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1.0 INTRODUCTION :

The environmental sustainability is a vital matter and of significant importance with respect to the development activities. Therefore, all the developmental activities need to be analyzed :

- considering the carrying capacities of the environment,
- the impact of the activity on the environment, and
- promotion on ways and means to sustain the environment with these activities.

But around the world, human activities have started to affect the global environment, with potentially devastating consequences for today's and future generations.

Today, the major global environmental threats are climate change, biodiversity loss, stratospheric ozone depletion, desertification and land degradation, degradation of fresh and marine waters, and the destruction of forests.

The conditions of our ecosystems need to be viewed in the context of national agenda. They reflect the aggregation of local practices and national policies, and manifest themselves locally and nationally, urban air pollution, degraded water, the loss of agricultural productivity. Until these problems are responded, the global environment will continue to degrade, and local communities will feel the impact.

These global environmental issues are normally thought of as isolated issues; however, there are strong scientific and policy interlinkages among them, and between them and local / regional environmental issues. For example, the combustion of fossil fuels, particularly coal, is not only the major source of manmade atmospheric carbon dioxide, which is a key greenhouse gas, but is also responsible for increasing the atmospheric abundance of fine particulates, air oxidants such as ozone, and acid deposition. It is critical, therefore, that key stakeholders understand the scientific and policy interlinkages, so that they can address these global environ-

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mental issues in a more holistic and synergistic policy framework.

2.0 PRESENT ENVIRONMENTAL ISSUES / PROBLEMS :

The greatest present environmental problems are :

- water quality degradation, especially surface water, from poor sanitation, industrial effluents, and pesticide runoff;
- urban degradation, including urban water and sanitation, solid water management, and worsening transport related air pollution;
- worsening but localized industrial pollution hot-spots;
- dwindling forests, coastal wetlands, fresh-water bodies and fisheries and poorly managed protected areas;
- soil degradation from nutrient depletion, salinization, and land use conflicts;
- poorly managed water resources and unresolved cross - sectorial issues like hydropower, land productivity; flooding and fisheries productivity;
- energy related pollution, both in commercial energy sectors and biomass; and
- the impact of global climate change.

Further, environmental agencies are typically relatively junior and weak. Political support is inconsistent, not so much for responding to acute damage or danger but for implementing long term environmental strategies. Poor policies and weak regulations hinder the potential government, private sector, and communities to work together on common interests.

3.0 ENVIRONMENTAL PROTECTION AND MANAGEMENT :

The key to solving environmental problems is to improve environmental management as an institutional challenge and not financial one.

Environmental protection is primarily a process, not an investment. It calls for planning, coordinating, regulatory and enforcement activities, public education and awareness, and bringing environmental concerns into all government ministries. Some investment may be needed, often to mitigate past mistakes, but the fundamental thrust of environmental management is to create effective policies, regulations and procedures.

The environmental problems can be met through the followings :

- More clearly defined and understood priorities for action, leading to more targeted action with more measurable results by setting a priority Framework for implementing the National Environmental Management Action Plan.
- More efficient policies, not only for the environmental authorities themselves, but for industry, agriculture, transport and other agencies that have an impact on the environment.

  In our country, macroeconomic analysis is being used to show the economy - wide impact of environmental degradation 4-8% of GDP a year, and to quantify the enormous economic benefits of policies that

could prevent degradation in the first place.

- Improved implementation of policies and regulations, through improved institutional capacity, incentives, information, and reduced corruption.

India Ecodevelopment Project, to conserve biodiversity in seven globally significant protected areas by collaboration between local people and government through an ecodevelopment strategy. The strategy aims to address both the local people's impact on the protected areas and the protected areas impact on local countries.

India Environmental Management Capacity Building Project, which addresses key environmental policy regulatory, and capacity building issues at the central and state levels. Innovations include : supporting Environmental law and economics teaching and practice; expanding public environmental information through a non-governmental structure; decentralizing environmental clearance and monitoring; supporting public awareness and NGOs; funding research; supporting improved land use, particularly in highly polluted industrial areas; targeting efforts in mining, coastal zone management, and urban air pollution.

4.0 ROLE OF TECHNICAL EDUCATION FOR THE ENVIRONMENTAL SUSTAINABILITY :

The technical education and training through its process can impact the followings :

- **Fostering Partnership that Work :**

  The education can develop understanding amongst the learners that all groups in society have a role to play in promoting sustainable development, and that by acting together the whole can be much more effective than the sum of its parts.

- **Integrating Social and Cultural Dimensions :**

  Social sustainability is equally important and often linked closely with environmental sustainability. Public policy on social development should be an integral part of education.

- **Building and Sharing Knowledge :**

  Through technological innovations and experimentation, good practices can be developed for sustainability and the same can be replicated by sharing. Building and maintaining the knowledge base on the environment should be an important of the education.

- **Developing Technologies for Cleaner Production Increasing Eco-Efficiency :**

  The research and development in technical education sector can lead far-reaching environmental improvements of existing processes, products and services of the design of entirely new product chains can increase the eco-efficiency substantially.

  The development of new technologies for recovery, recycling and reintegration in case of production / manufacturing setup can play an important role on the way to

sustainability by developing eco-intelligent products.

5.0 CONCLUSION :

To meet the threats / challenges of environment and development, the technical education can certainly play a significant role by developing newer technologies which can reduce the environmental problems to minimum, protect and maintain the environmental sustainability. For example, cost-effective renewable energy technologies need to be developed to meet the growing demand for energy while minimizing the threat of local-to global environmental degradation.

The technical education should include a component of education on environment and development which develop in students the concerns for sustaining environment.

Environmental sustainability can be achieved through persuasion and incentives, investment in partnerships that work, integrating social and cultural dimensions, building and sharing the knowledge, increasing public involvement in the programmes, harnessing the power of public opinion, making regulation more flexible, applying self-regulatory mechanisms, policy initiative on the cleaner production, developing eco-intelligent products and also sustainability through redefining recovery, recycling and reintegration processes of production and manufacturing.

6.0 REFERENCES :

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