



TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT

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INTRODUCTION:

The impact of Science & Technology on human life has been far more profound & long lasting. From the day man learnt to light fire by striking flints to this technology has guided & determined the pace & the extent of change in every society throughout human history.

The earliest mention of the phrase sustainable industry appeared in 1997 in a story about a Japanese group reforesting a tropical forest to help create sustainable industries.

OBJECTIVES:

- 1) Understanding the environment and sustainable development.
- 2) Understanding the resources.
- 3) To see the impact of new technologies.

The world commission of Environment & Developed has defined sustainable development as "development that meets the needs of the present without compromising the ability of future generation to meet their own needs." Therefore sustainable development means thinking of the future.

DATA COLLECTION:

For this research paper & its preparation descriptive method is used. Information has been collected from the secondary sources of information. For this paper Books, Articles, Annual Reports as well as information from Internet have been taken in to account.

DISCUSSION:

During the 20th century, we experienced extreme ups & downs, riches & poverty, wars & social upheavals. Most predictions made at the beginning of the 20th century about Industrial growth & famines, destructive world wars and exemplary sympathies of universal humanism,

about technological changes, population, food production, income & prosperity have been totally off the mark. Now the futurologists have become far more cautious. They avoid making definitive predictions about how different the next century will be qualitatively because of the convergence & interaction of many strands of technological changes. The social & economic impact of the new technologies is going to be far more profound and far more unpredictable.

Already, the classical theories about factors of production such as land, labour & capital have become outdated. Increasingly, wealth creation is being driven by knowledge. Information & Communication technology has transformed the kind of goods & services we produce & trade. It is more important to possess technical skills & an innovative mind. The 'Knowledge Content' of goods & services has increased.

By any standards, our achievements in the last 5 decades are quite impressive, but we have to run faster even to remain stationary. At the same time, because of the adverse impact of uncontrolled industrial production on our environment & with the depletion of natural resources at an alarming rate, serious doubts began to be raised about sustainability of growth.

Admittedly, the technology has thrown open vast opportunities for everybody to achieve high prosperity & growth. However one cannot ignore that the gap between rich & poor nations seems to be widening. This skewed pattern of Income & Consumption amongst nation & clearly not conducive to sustainable development. It gives rise to all kinds of social tensions & turmoil, within & between countries.

Excessive demands & unsustainable lifestyle among the richer segments of humanity place immense stress on the environment. The rich nations are the greatest contributors to the global warming as a result of emission of greenhouse gases. They are also depleting disproportionately high quantities of non-renewable resources sustainable development will require a major reorientation of existing production & consumption patterns in developed societies.

Sustainability cannot be achieved without eradicating the root causes of poverty. There are oppressive systems which sustain poverty & operate both within & between nations. While plenty of technological solutions to eradicate poverty are available today & many improvements are taking place continuously, technology alone cannot win the battle against poverty.

A lot of emphasis is often laid on trade liberalisation & globalisation. The advancement in the information & communication technologies has certainly helped global commerce & there is significant increase in the share of developing countries. Technology is knocking down geographical boundaries, changing the structure of production & trade within & between countries. Previously non-traded goods, mainly services, are now traded internationally through information technology.

However, there are many other factors which perpetuate poverty on a global scale & which need to be tackled simultaneously in order to drive fuller benefits from the technological revolution & free market.

Experience has shown that poverty alleviation & sustainability cannot be achieved without involving communities in the development strategies without reforming national & international policies. Technology can play a very positive role in such a policy environment. Otherwise, it may continue to march gloriously in its spiral path, accentuating inequities, poverty & environmental degradation.

Governments in the third world countries also must understand the links between environment & growth in order to make development choices that will be economically efficient, socially responsible & environmentally sound. The strategies should be developed through community participation.

Women as managers & guardians of resources, as educators & as facilitators play a vital role in development, yet they are still not adequately involved in decision making & implementation. Even poor & illiterate women can master technological improvements.

The earth summit held in Rio de Janeiro in 1992 stressed the need for incorporating the elements of sustainability & biodiversity into development models. The commission for sustainable development has been established. This would provide a good forum for exchange of information & views. The signing of the world trade organization treaty was, perhaps the most significant development of the decade but there are still a few stubborn wrinkles to be ironed out, as was evident at the seattle summit last year.

Perhaps, biotechnology is the most debated technology today. There is no doubt that this technology has the potential to ensure food security, improve the environment & increase the life expectancy. In the past, some apprehensions were also expressed over the conventional biotechnology of cross breeding & genetic selection. However, we must remember that, it

made the green revolution possible in India & in many other developing countries.

The international mechanism for protection of intellectual property rights has become stronger. It is argued that the multinational corporations would use these mechanisms to establish global monopolies. Bulk of the research in biotechnology today is funded by the giant multinational companies who are likely to give primacy to profit rather than sustainability.

It is now realised that biological diversity constitutes an important source of chemical & genetic material of commercial value & there is a sudden spurt into bio-prospecting activities around the world. But it has also aroused concerns about how developing countries can benefit from the commercial use of their biological material & about equity in the use of the world's biological heritage.

These issues concerning bio-piracy, bio-ethics, & bio-heritage are now the subject of considerable international debate. Many developing countries are enhancing fresh legislations to regulate access to genetic resources & benefit sharing. However it is not sufficient to enact laws, the countries should have competent institutions to enforce them effectively. Biotechnology should never be developed or used for military purposes.

There is much potential for global co-operation & partnership for research in biotechnology. The developing nations are rich in biological diversity & the developed nations have expertise to transform these biological resources into products & processes, which can serve the needs of sustainable development. The challenge is to ensure that biotechnology is developed & applied safely without damaging the environment or threatening human health & it must be done equitably with better dissemination & adaptation of the new technologies, the developing countries can participate more fully in the global economy.

Human resource development would be the most critical factor which will, in the ultimate analysis, determine a country's ability to effectively use technology for sustainable development. Expansion & Modernization of the education system should receive a very high priority in the developing countries. To use limited resources most effectively, the developing countries can pool scientific, technological & educational resources with neighboring countries.

CONCLUSION:

The developing countries also need to establish a vibrant, innovative & mutually beneficial partnership between the private & the public sectors. There is a need; therefore to establish Research-cum-industry-cum-commerce parks, where students, researchers & entrepreneurs can facilitate each other's work in all areas concerning development & use of technology, these countries would need focused aid for capacity building & institution building.

We need more research, sharing of information & the promotion of new patterns of agricultural production & rural development, which are equitable, sustainable & participatory. A combination of technological & economic revolution is unfolding itself & the developing countries must prepare themselves to reap a rich harvest.

The generations of planners working today have a critical responsibility at a time, when the natural resource base teeters on the brink of irreparable harm & when social disengagement is at history's highest levels.

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