

MODULE 16 - SUSTAINABLE DEVELOPMENT

OBJECTIVES

By the end of this session students will be able to-

1. Know about Sustainable development.
2. Concept and Characteristics of Sustainable development.
3. Differentiate between Sustainable and un-sustainability.
4. Areas of Sustainable development.
5. Understand the benefits Sustainable development.

SUMMARY

Nature provides mankind with all life supporting system like air, water, food, shelter, and an equal opportunity to all of them, but due to unequal developments, and greed of some people the opportunities and resources available to rest of the people depleted. The greed and unbalanced development not only lead to economic discriminations, but also in environmental depletion. Nature's capacity to balance the system is greatly shattered due to unsustainable development. The harmful activities involve- overuse of natural resources in a wasteful manner, more consumption than renewal, extinction of species and overall degradation of the environment.

The concept of sustainable development was emerged in early sixties when developed countries started facing problems of natural degradation, pollution and ill health, they started thinking about the environment after the release of Brundtland Commission Report (1987) and the Earth Summit at Rio de Janeiro. The sustainable development now can be seen as "improving the quality of human life while living with the capacity of supporting ecosystems.

There are various sectors which should be taken care like, population pressure, atmospheric pollution, water resources, management of natural resources, forests cover, environmental awareness, etc.

TRANSCRIPTION

Concept and characteristics of Sustainable Development

Two decades ago the world looked at economic status alone as a measure of human development. Thus countries that were economically well developed and where people were relatively richer were called advanced nations while the rest where poverty was wide- spread and were economically backward were called developing countries. Most countries of North America and Europe which had become industrialized at an earlier stage have become economically more advanced. They not only exploited their own natural resources rapidly but also used the natural resources of developing countries to grow even larger economies.

Thus the way development progressed, the rich countries got richer while the poor nations got poorer. However, even the developed world has begun to realize that their lives were being seriously affected by the environmental consequences of development based on economic growth alone. This form of development did not add to the quality of life as the environmental conditions had begun to deteriorate.

By the 1970s most development specialists began to appreciate the fact that economic growth alone could not bring about a better way of life for people unless environmental conditions were improved. Development strategies in which only economic considerations were used, had begun to suffer from serious environmental problems due to air and water pollution, waste management, deforestation and a variety of other ill effects that seriously affected peoples' well being and health. There were also serious equity issues between the "haves and the have nots" in society, at the global and national levels. The disparity in the lifestyles between the rich and the poor was made worse by these unsustainability strategies. Many decades ago, Mahatma Gandhi envisioned a reformed village community based on sound environmental management. He stressed on the need for sanitation based on recycling human and animal manure and well-ventilated cottages built of recyclable material. He envisioned roads as being clean and free of dust. His main objective was to use village made goods instead of industrial products. All these principals are now considered part of sound long-term development. Gandhiji had designed a sustainable lifestyle for himself when these concepts were not a part of general thinking.

Sustainable development is a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for generations to come. The term was used by the Brundtland Commission which coined what has become the most often-quoted definition of sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable development ties together concern for the carrying capacity of natural systems with the social challenges facing humanity. Ecologists have pointed to the limits to growth, and presented the alternative of a "steady state economy" in order to address environmental concerns.

The field of sustainable development can be conceptually broken into few constituent parts: environmental sustainability, economic sustainability, social sustainability, cultural sustainability and educational sustainability.

Areas of sustainable development

Environmental Sustainability

An "unsustainable situation" occurs when natural capital is used up faster than it can be replenished. Sustainability requires that human activity only uses nature's

resources at a rate at which they can be replenished naturally. Inherently the concept of sustainable development is intertwined with the concept of carrying capacity. Theoretically, the long-term result of environmental degradation is the inability to sustain human life. Such degradation on a global scale could imply extinction for humanity.

The environmental economics become more important, the concerns for environment become more important and when we talk about the environmental sustainability it concerns more with the habitat the living environment, surrounding, the humming being and the most importantly all species living in the biosphere, in fact the un-sustainability was because the concern was an man only, the human species only, The social aspect only, it was concerning for the development of man only, but when it become the issue man and environment it include both and the area expended to include all species existing on earth the total ecology become the focus and from development we more towards the sustainable Development.

Economic Sustainability

To ensure sustainable development, any activity that is expected to bring about economic growth must also consider its environmental impacts so that it is more consistent with long term growth and development. Many 'development projects', such as dams, mines, roads, industries and tourism development, have severe environmental consequences that must be studied before they are even begun.

Large dams, major highways, mining, industry, etc. can seriously damage ecosystems that support the ecological health of a region. Forests are essential for maintaining renewable resources, reducing carbon dioxide levels and maintaining oxygen levels in the earth's atmosphere. Their loss impairs future human development. Loss of forests depletes biodiversity which has to be preserved to maintain life on earth. Major heavy industries if not planned carefully lead to environmental degradation due to air and water pollution and generate enormous quantities of waste that lead to long term environmental hazards. Toxic and Nuclear wastes can become serious economic problems as getting rid of them is extremely costly. Thus the economic benefits of a project must be weighed against the possible environmental costs before a project is permitted.

The dimension of economic sustainability When means of protection for the exchange of economic values only included environment and economics that means the ecological cost is also included because in just terms of money the development is not sustainable. What justifies is environmental justice included in that and by environmental justice we mean whatever the means of production on consumption values are there, they are not affecting the environment in adverse way. That is the Sustainability lies in those means of production, their consumption, which do not affect. The ecology of the area of the nation, or the globe as the whole. So economic sustainability lies extending the linkages of economics with the ecology and that is why ecology economics & environmental

economics they have become important area for consideration in sustainable development. The environmental economics talks about, the capital stocks, the natural stock, not only the labor, and the productivity but the impact of that labour & productivity on the surrounding ecology & that is why economic sustainability is major concern when we talk about sustainable development.

Social Sustainability

Social sustainability is one aspect of sustainable development. Social sustainability encompasses human rights, labor rights, and corporate governance. In common with environmental sustainability, social sustainability is the idea that future generations should have the same or greater access to social resources as the current generation. Social resources include ideas as broad as other cultures and basic human rights. Also we can speak of Sustainable Human Development that can be seen as development that promotes the capabilities of present people without compromising capabilities of future generations. In the human development paradigm, environment and natural resources should constitute a means of achieving better standards of living just as income represents a means of increasing social expenditure and, in the end, well-being.

In sustainable development, social sustainability is also a concern because the social relationship decide whether the sustainable development will happen or not or whether they attempts for sustainable development their because the relationship among different groups matters a lot deciding the social capital, economic Capital Consumption pattern and the equity relationship between different groups. Particularly in India, where we have got this cast Relations they are the major concern because of the cast there is graded in equality in terms of consumption of Resources, not only in consumption of Resources but availability & accessibility to Natural Resources also. Cast is a major part for the production relation, cast decides the occupational pattern & those occupational patterns traditionally in India are Natural resource based, so social sustainability lies in removal of all disabilities & discrimination based on cast, so if we have to move towards sustainable development we have to decide & resolve the cast issue in favor of equitable distribution of natural resources & that to the cast pattern when it effects or adversely decide the equitable pattern of natural resources then the problems of un-sustainability comes up. So for Social sustainability it is important that cast and gender relations also, in social dimension & other very important area is gender inequality because Men & Women they have got different accessibility towards natural resources uses in its consumption some have to resolve the issue of cast & gender in equality to ensure sustainable development.

Cultural Sustainability

For sustainable development the biodiversity base is important, so is culture diversity. Cultural Sustainability becomes another an important area for sustainable development, if the culture diversity is more than this will provide a broader base

for sustainable development, more the diversity more is the stable pyramid where it is of food of energy flow & that is how the cultural diversity also ensure sustainable development. Mono culture society they have very adverse relationship with natural resources, the ecology & that is why when me consider tribal society, it is very close to nature but the tribal society & non tribal society when they are together living adjacent to biosphere, or tiger reserves or environment preservation areas then definitely they sustain & we have got some society, some *samaj*, cast like *vishnoi samaj* they are protect the environment, in fact for them the environment is like good, wild life they can sacrifice their life to protect the wild life adjacent to their areas & that is how me must learn different cultures have got different meanings towards the environment understanding the environment and they have got. Different interactions & inter linkages with the adjoining environment. So more cultural diversity meant wore cultural sustainability, for sustainable development there for cultural sustainability is very essential dimensions.

Educational Sustainability

Groundwork has been laid for sustainability education worldwide. Recent changes in service learning, a focus on literacies and skills, standards that support interdisciplinary thinking, and the role of systems thinking have all increased the visibility of the movement. Various approaches to educational sustainable development encourage people to understand the complexities of, and synergies between, the issues threatening planetary sustainability and understand and assess their own values and those of the society in which they live in the context of sustainability. Educational sustainable development seeks to engage people in negotiating a sustainable future, making decisions and acting on them. While it is generally agreed that sustainability education must be customized for individual learners, according to Tilbury and Wortman, the following skills are essential to educational sustainable development:

- Envisioning – being able to imagine a better future. The premise is that if we know where we want to go, we will be better able to work out how to get there.
- Critical thinking and reflection – learning to question our current belief systems and to recognize the assumptions underlying our knowledge, perspective and opinions. Critical thinking skills help people learn to examine economic, environmental, social and cultural structures in the context of sustainable development.
- Systemic thinking – acknowledging complexities and looking for links and synergies when trying to find solutions to problems.
- Building partnerships – promoting dialogue and negotiation, learning to work together.
- Participation in decision-making – empowering people.

Increased access to formal and informal education, work for ecological and social literacy for all age levels and sectors of society, promote education that empowers people and is holistic, integrated, inter disciplinary and issues oriented, improve the collection,

management and dissemination of information about natural and social system and about the causes and consequences of ecological and socio-economic problems and trends. Increase public recognition that population growth, poverty, rising consumption and harmful technology can all contribute to ecological and social decline.

Education is a key to development & education for sustainable development can only ensure our common future. The education system that we have today is not very much concerned with the participation and attitudes towards environment, for that we need to evolve education pattern which is conducive for sustainable development & for that education for sustainable development that to acronym E.S.D. has become very essential rather, in education pattern it is not only the learning of the skill development but participation attitude towards environment preservation, conservation are essential dimension for that. Environmental education is for sustainable Development & at every level of schooling of college life we must develop the pattern the curriculum conducive for environmental education because by environmental education only we can have the positive attitude towards environment we can involve participatory approach for environmental conservation, we can have the skill development so that the student they learn how to live with the environment, how to protect the environment & how to protect their future & sustainable development is about our common future. & education can only guide us towards our common future, education can only sustain our world, our living, they only planet perhaps in the universe which has got live, so environmental education or education for sustainable development rather will be the most crucial dimension of sustainable development.

Causes of Un-sustainability

Population growth: In 2012 the world's population is just over 7 billion. It has doubled since 1950 and in the next fifty years is expected to reach about 10 billion. The highest population growth is in the poorer countries. Populations in the West are growing but at a much lower rate. There about five people in Third World countries compared to only one in Western industrialized countries.

Energy consumption: the Western countries use far more energy. The average person uses 40 times as much as a person in the Third World. However, if all the Third World countries became developed and their energy use increased, there would not be enough oil, gas and coal to go around.

Resources consumption: the West represents about 20% of the world's population, but uses over 80% of the world's resources for its energy needs and for its industries. Again, there would be a problem of insufficient resources if all the Third World countries developed in the same way as Western countries.

Major causes for unsustainable development is differential pattern of consumption over consumption & asymmetrical relations. In over consumption beyond our basic needs, the consumption pattern is not healthy & that means we are consuming the natural resources beyond the carrying capacity of beyond the limit that we have on

our capital stock. What happens in over consumption suppose an affluent society or developed society is consuming more resources than existing in that area than definitely the extra resources, additional resources they get from the near by society neighboring societies & that's why they encroach up on the natural right of other societies, other nations & similarly when. We analysis the western consumption pattern, then we can see the differences because in our country or in countries like Bangladesh, they are very much deprived their share, the global share & that is why the affluent Society they consume more & there consumption pattern lead to un-sustainability in global terms. And that is why when we think about 80:20 Ratio that means 80 % Resources are being consumed by 20 % of the affluent society, will lead to consequences, ultimately towards un-sustainability. So for sustainable development we have to think about the over consumption pattern & besides that there are asymmetry relationships also. Asymmetry Relationship means equitable distribution of recourses. Not their equitable distribution of income is not their & the natural resources which are globally shared are not shared equitably & that is how me see the major causes of un-sustainability existing in the society.

Role of Individual in Sustainable Development

We as citizens of our Nation, and increasingly as citizens of one common future at the global level, must constantly monitor the pattern of development. If we see that a development project or an industry is leading to serious environmental problems, it is our duty to bring this to the attention of authorities such as the local administration, the Forest Department or the Pollution Control Board, to look into the issue. Further if new development projects are being planned in and around the place where we live it is our duty to see that this is brought about in accordance with environmental safeguards. While we all need to think globally, we need to act locally. We have to see to it that we change development from its present mandate of rapid economic growth without a thought for future ecological integrity, to a more sustainable eco- logically appropriate strategy.

If new projects of a large size are to be passed Government has made it compulsory to publish the summary report of the Environmental Impact Assessment (EIA) and conduct a 'Public Hearing'. It is essential that all of us as responsible citizens read evaluate and respond to such public hearings held in our area and make comments on the possible impacts of the project. In many situations there are proponents of the project who only look at their own rapid economic gains. It is for citizens as concerned individuals and groups to counter these vested interests so that our environment is not de- graded further. Life has to be made more livable for all. We cannot support the economic growth of one sector of society while we permit environmental degradation to destroy the lives of the less fortunate.

Benefit of Sustainable Development

Benefit of sustainable development is for humanity if sustainable Development is not there, then a point may come, a day may come where our future our common future will not be their in healthy terms, in ecological terms, we may not have the pure air to breath, we may not have healthy food to Eat. We may not have the conducive environment where life can exist, so it is not the question of humanity but the life as a whole & as pointed out the only planet that we have perhaps in the universe is our earth, our mother Earth, & our common future depend on how we treat our mother Earth. And sustainable development only can insure that kind of development were our mother can sustain our life in a healthy manner and our common future can be saved, so for sustainable development therefore the very important aspect to consider is not of the humanity but life as a whole, we have to preserve, conserve our life & for that we must march towards sustainable development.

Agencies engaged in monitoring of Sustainable Development

Many agencies are involved in monitoring and regulating the development. In India, we have central pollution control board and pollution control board of states, which work as “watch dog” for the pollution level and also give green signal to a particular project after a thorough check of various parameters.

Local Administrative Bodies of cities also have the right and power to inspect and even stop non-environment friendly activity. Large projects like dams, mines, roads, industries and tourism have severe environmental consequences, are to be passed through Environmental Impact Assessment then only they can get a non-objection certificate from Ministry of Environment And Forestry.

Many NGOs (Non Government Organizations) like Chipko Movement, Apika Movement, Narmada Bachao Andolan etc. also play a vital role in conserving the environment.

For Framing policies for sustainable development, roll of different agencies are important. NGOs play a very important role but we have also to explore vision of environment personalities like Mahatama Gandhi & Baba sahib Ambedker who envisioned future society & like they had thinking how to provide resources for our society, how to use the available resources & how our future society will require, resources & Baba sahib Ambedker played a Great role there.

He is the person who gave us a kind of water policy which is very important in global terms for sustainable development because he considered environmental resources for the best advantage to all sections of the society, he was not just thinking in a narrow perspective but his vision was very broader & for long terms. His water policy for which he considered water is a resource for all that means he considered no provisional boundary can limit the river, the flowing water & all people of nation, all citizens they have equal right on that water. He considered water ways like Railways, when we travel in Rails me do it we are passing through different provisions, we do it think Gujrat has passed & Maharastra has come. But

the river disputes that we face today whether it is Narmada river where Gujarat & Maharashtra & neighboring states are fighting or it is the issue of Ganga & Kaveri only Baba Saheb vision can be helpful & it is very relevant to resolve these issues. Once water becomes a central subject that means like Railways will have water ways & such disputes will not occur.

The world today is roughly polarized between the rich and the poor although we prefer to call this division by fancy name like the developed and the developing. Now in this mad race for so called development the immediate victim was certainly the depleting of the natural resources, but ultimately the victim is the entire human race, it is therefore imperative that we stop; turn back and take a look at the damage that we have done, damage to the environment and to the society. And then we must consider how best we can remedy the situation for the future. The only hope seems to be in sustainable development and this sustainable development is to be all around environment, social, economic, cultural and educational.

GLOSSARY

SUSTAINABLE DEVELOPMENT– Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

UNSUSTAINABLE DEVELOPMENT – When present progress is at the expense of future generation is called unsustainable development.

NGO – Non-Government Organization

EIA (Environment Impact Assessment)– The report which identifies and analyses the environmental impacts of any project on surrounding environment.

UNCED- United Nation Conference on Environment and Development

IUCN- International Union for Conservation of Nature.

UNEP- United Nations Environment Programme.

COAL MINES- Extraction of coal from the Earth's crust.

CONSERVATION- Action taken to protect and preserve the natural world, usually from pollution, overexploitation and other harmful activities of human beings.

FAQs

Q. 1 What is unsustainable development?

A. 1 When present progress is at the expense of future generations is called unsustainable development.

Q. 2 What is sustainable development ?

A. 2 Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs is called sustainable development.

Q. 3 What do you understand by biodiversity ?

A. 3 the flora, fauna and microorganisms of particular area forms the biodiversity of that particular area.

Q. 4 What is results of uncontrolled mining ?

A. 4 Due to uncontrolled mining, major area of the mine becomes hollow and land starts to sink. This threatens the life of thousands of trees, animals and human settlement of that particular area.

Q. 5 Give the main points Gandhiji stressed upon ?

A. 5 Gandhiji stressed upon proper sanitization, ventilated houses, village products and use of recycled articles in daily life, He also emphasized on utilization of locally available raw materials to make products.

Q. 6 Name a few agencies involved in monitoring of environment ?

A. 6 Agencies involved in monitoring and regulating are Central Pollution Control Board, Pollution Control Board of states, Local Administrative Bodies of cities and Non-Government Organizations.

Q. 7 Which is the most threatened watershed of the world ?

A. 7 Himalayas are the most threatened watersheds of the world.

Q. 8 In which conference “poverty” was raised as the greatest polluter ?

A. 8 In 1972, Stockholm conference “poverty” was raised as the greatest polluter.

Q. 9 What are the ill effects of unsustainable development ?

A. 9 Air and water pollution, deforestation, excessive use of chemicals in agriculture are ill effects of unsustainable development.

Q. 10 Give some examples of non-polluting renewable energy sources?

A. 10 The non-polluting renewable energy sources are Biogas, solar energy, hydal energy, geo-thermal energy and micro-fuels.

Q. 11 Why sustainable development necessary?

A. 11 The Earth's resources are not unlimited. If we use them in a more judicious and equitable manner, our children and grandchildren can have the benefit of them too. We need to change our habits and improve our ways of doing things so as not to exhaust the wealth we have today but rather ensure its quality for those who will come after. These changes cannot be accomplished without modifying how we manage our economic and social affairs. With this new way of thinking and realizing development, we are in a period of radical change, and at a planetary scale.

CASE STUDY

Uncontrolled mining is one of the best known examples of unsustainable development. In initial phase of industrialization coal was the main source of fuel. So, coal mines were explored and mined extensively.

Dhanbad coal mines, Bihar is known for its best quality coal. Due to excessive and unplanned mining, major area became hollow and resulted in sinking of land. This threatened the life of thousands of residents of that particular area.