

Sustainable Architecture
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Lecture - 09
Agenda 21 and UN goals

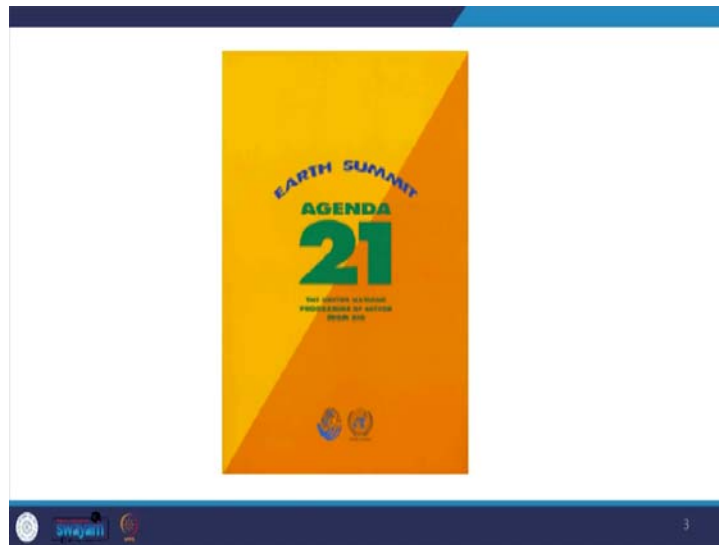
Good morning. Welcome to the online course on Sustainable Architecture. This is week 2 and in today's lecture we will be talking about Agenda 21 of UN. In previous lectures prior to this lecture we have discussed at length about what sustainability is, what do we understand by sustainable development, what are the impacts of built environment on natural environment and how is it affecting us as human beings.

Now, all the impacts and discussions that we have had in the last three lectures such discussions have been conducted or have been having in the world since more than 3 decades.

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The result of all those discussions as we have also seen in the history of sustainable development was the report Our Common Future which was published in 1987. Even after this report was published there was no legally binding convention or protocol, where the world would come together and act towards making the world a more sustainable place to live. (Refer Slide Time: 02:07)



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Looking at the discussions and the concerns which were growing around the world post publishing of this report Our Common Future, for the first time in 1992 United Nations organized the first Conference on Environment and Development, at Rio de Janeiro in 1992 which was informally and most popularly known as the First Earth Summit. This earth summit for the first time brought all the nations together, all the interested parties together around 190 of them at that time to discuss about the future course of development and how environment will be taken care of.

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The discussions of the earth summit of 1992, the first Earth Summit of Rio resulted in several very important documents.

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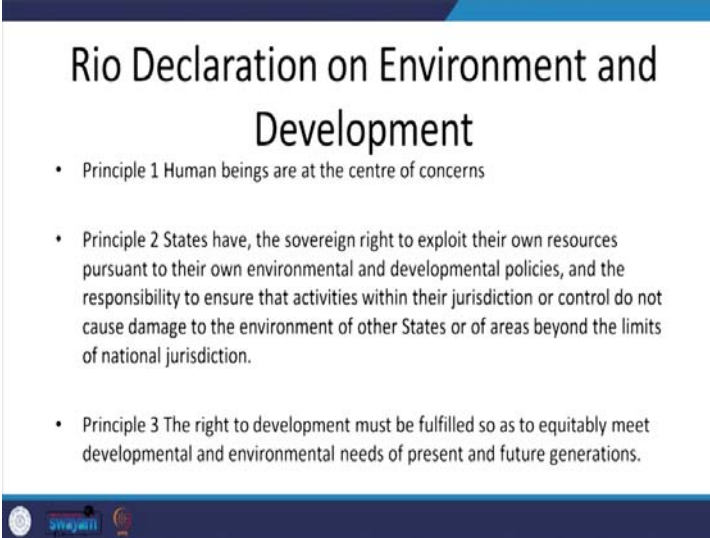
There were three non-binding and voluntary documents which were produced. The first one was Rio Declaration on Environment and Development which contains 27 principles. The second was Agenda 21 which lists out how this development, sustainable development is to be carried out in various sections. And, it is a long document which details out how nations should progress. The third one was the Forest Principles.

These three were non-binding voluntary documents, then simultaneously at earth summit Rio Earth Summit three important legally binding agreements were also opened up for signature, for the parties to agree on. The first one was Convention on Biological Diversity. The second one was Framework Convention on Climate Change: UNFCCC which has resulted in many very significant treaties and protocols in the later years. For example: Kyoto Protocol, Montreal Protocol, Paris Agreement, Copenhagen Agreement.

So, all these were a result of this UNFCCC which was opened up for signature in 1992 at the Rio Earth Summit. And, the last one was United Nations Convention to Combat Desertification. I will go in detail over the first two non-binding voluntary documents which have shaped the policies of the world since 1992. However, the kind of impact which was envisaged through Agenda 21 or UNFCCC or other documents which were produced after Rio Earth Summit, they have still not been fulfilled.

The expectation has still not been fulfilled, yet the world is moving towards that and we are trying to formulate policies and action plans based upon the principles which were laid out in Agenda 21 and other documents.

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Rio Declaration on Environment and Development

- Principle 1 Human beings are at the centre of concerns
- Principle 2 States have, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.
- Principle 3 The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

I will start discussing the Rio Declaration on Environment and Development first. This declaration is a short document which contains 27 principles. This is again a non-binding and a voluntary document. The first and foremost principle of Rio declaration states that human beings are the center of all the concerns. Till this time there was a growing

concern over how environment is getting affected. And, there was a lot of discussion on how developing nations such as India and China should limit their emissions.

And, the way progress is being made, developer development is being made at the cost of environment. And, the discussions largely centered around or there were debates between the developing nations and developed nations on achieving a certain threshold, certain minimum level of development in developing countries without looking much towards the environment. The discussion acts as somebody very rightly put was at a restaurant when everybody has eaten up, the question is who pays the bill?.

So, developing nations were accusing developed nations that they have already developed at the cost of environment which was to be shared, which was a shared resource of the entire world. And, now when it is time for developing nations to grow, they are restricting the growth of these nations which definitely is also hampering the environment. For the first time, it realized that human beings are at the center of all the concerns and human beings would need certain minimum quality of life to be ensured, achieved and they would be the first of the concerns.

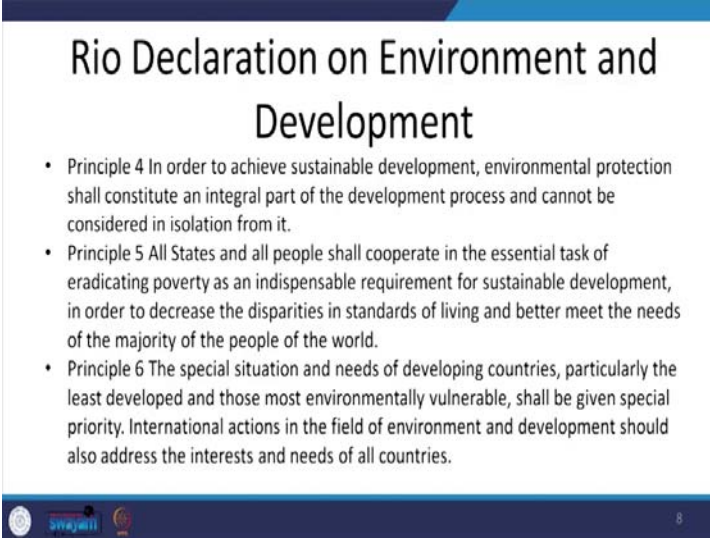
The second principle was that states have the sovereign right to exploit their own resources. So, every nation has the right to consume and exploit the resources which are within their boundary and develop their own developmental policies. However, it does not imply that the damage to the environment of other states be inflicted by the developmental policies or the environmental processes which are taking place in one state. So, this in turn gives rights to the developing nations to choose their own developmental path.

How they wanted to grow, how they wanted to develop and that is why over years we have seen countries like India and China growing, developing very fast. Though a lot of criticism from across the world is being seen, is being faced because there is an increasing environmental degradation. But, at the bottom of it, the point is these developing nations still need to develop and come up to a level where the **development** developed nations have already reached.

The third principle is an extension to what I was just saying the right to development must be fulfilled; so, as to equitable meet development and environmental needs of present and future generations. Now, here the developmental needs of the present and

future generations have to be met equitably. This implied that developing nations be given the right to development.

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The slide is titled "Rio Declaration on Environment and Development". It lists three principles:

- Principle 4 In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.
- Principle 5 All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.
- Principle 6 The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

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The fourth principle states in order to achieve sustainable development environmental protection shall constitute an integral part of the development process, that is why we have seen the development of environment protection bodies. For example, green tribunal, National Green Tribunal in India and such similar bodies across the world in each of the nations. Pollution Control Board, green tribunal which have been created to ensure that the environmental protection is taken care of and it goes hand in hand with the developmental process.

The next principle says, principle 5: all states and all people shall cooperate in the essential task of eradicating poverty. Poverty was identified as one of the main aims that needs to be eradicated and that has to be an indispensable requirement for sustainable development. AgainAgain, putting people at the center of it, talking about economy; we cannot talk about environment alone while our people are still not having access to the basic needs, to the basic facilities and they are still poor. So, eradicating poverty was one of the main principles.

The next principle, principle 6 states that the special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable shall be given special priority. And, the international actions in the field of environment

and development should address the interests and needs of all countries. That is why we have seen that through United Nations a lot of impetus, a lot of push is being given from developed countries to the developing and underdeveloped countries to take care of their environment and developmental programs. This was done in order to ensure that there is equity, equity of development amongst nations. Not just within the nation, between different classes of the society, but between nations.

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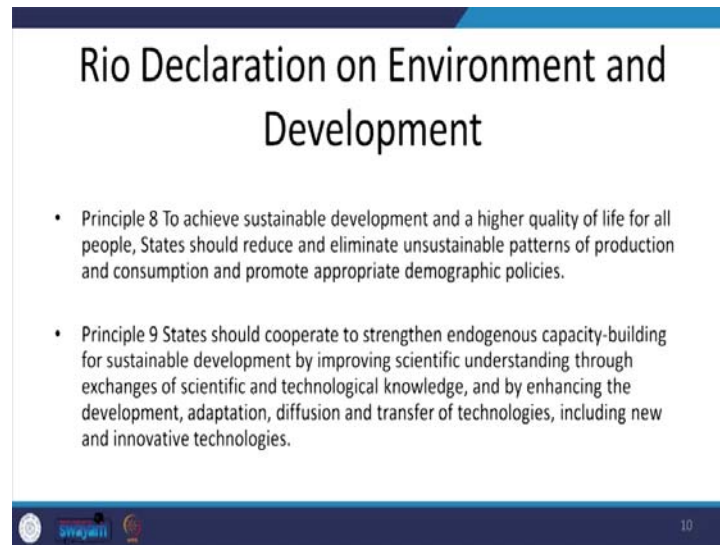
The slide features a blue header with the title "Rio Declaration on Environment and Development" in white text. Below the title, a bullet point describes Principle 7. At the bottom, there is a dark blue footer containing logos for the United Nations, Swajanti, and the United Nations Environment Programme.

Rio Declaration on Environment and Development

- Principle 7 States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

The next principle states that the states shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the earth's ecosystem. There has been an increased emphasis and focus on how earth's ecosystem shall be protected. It is not just the forests; it is equally the entire ecosystem; our oceans, our seas, our glaciers, mountains, hills, forests, even deserts. All of this earth's ecosystem needs to be conserved, protected and restored wherever it has deteriorated.

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Principle 8 states that to achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies. Such principles have led to development of more and more efficient industrial processes. And, formation of policies which have boosted the demand for efficient machinery, efficient industries to be set up, such that the pattern of production becomes more and more efficient and there is lesser amount of resource which is consumed, that is one part of it.

Besides this, also the consumption pattern of the population, the way people consume has also to be taken care of is what it implies. Principle 9 states that state should cooperate to strengthen endogenous capacity building for sustainable development by improving scientific understanding through exchanges of scientific and technical knowledge. This has led to a lot of inter country exchanges on scientific and knowledge sharing ideas. We see a lot of collaborative research happening across the world which was actually triggered by this principle of First Earth Summit.

Today, it might appear a very common thing to us where the world collaborates together to work on various research programs, various research problems and comes up with scientific and technological solutions which are also implemented worldwide. Such was the strength of this principle at that time when the vision was thought of.

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The principle 10 talks about environmental issues are best handled with the participation of all concerned citizens, at the relevant level. Unfortunately, prior to this we have seen a lot of protests from people against certain developmental, infrastructural development programs, schemes. For example, large dams; majority of the times people, the citizen, the concerned citizens were not brought into the discuss. People were left out and the policies or decisions were made which is where we have seen some of the historic events taking place which were actually protests in those times.

For example: Greenpeace, the formation of Greenpeace as a foundation. For exampleexample, the protest of Jane Jacobs while, the highway was passing through her village or several such or even the Silent Spring, where people started protesting after this book was published against the use of pesticides. The policies were not designed by taking, by engaging people into the decision making. This principle emphasized on participation of all concerned citizens at all the relevant levels for discussing any environmental issue.

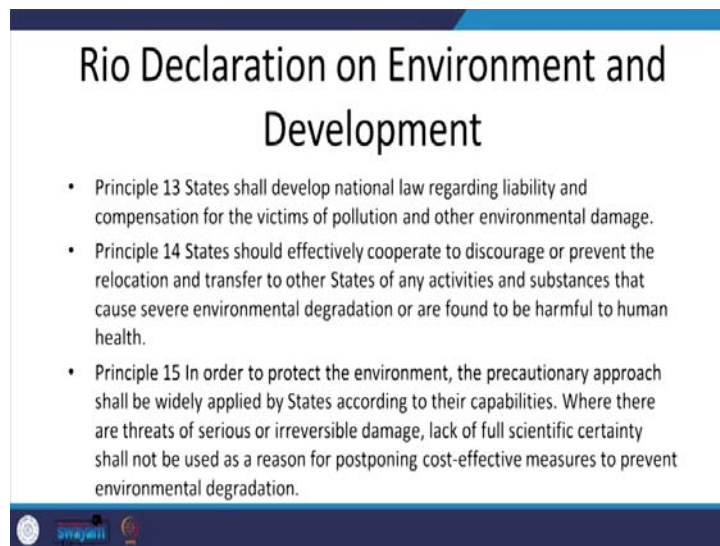
Principle 11 states that states shall enact effective environmental legislation, till that time very strong environmental legislations were not in place. In the first place the organizations, the bodies were not there and that most definitely the policies were not there to enforce the environmental protection conservation. This saw the rise and

formation, creation of a lot of environmental protection bodies across the world in all the countries.

Further the legislations were put in place, in almost all the countries today legislation for protection of environment is in place. How much is it being implemented is a second question; however, the first step towards it which was creation of an environmental policy and legislation has been to a large extent achieved. Principle 12 states that states should cooperate to promote a supportive and open international economic system. This has led to creation to motivation to global trade, ~~global trade~~ and economy.

Earlier nations were separate economy; I am not talking about around 1992, but almost a century prior to that the nations were independent economies. They were hardly dependent on the trade across the globe, while in today's times almost all trade is global. There are global products available in all the nations; there is a larger economic cooperation. And, there are international legislation laws, binding laws which allow for this international economic system to be robust and be implemented.

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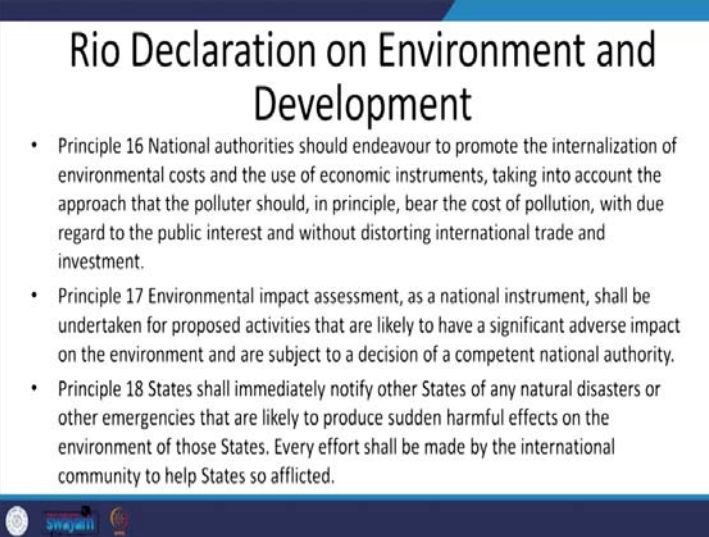
Principle 13 states that states shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. This has very strictly been done across the world, where the victims of environmental damages or pollutions are being compensated. However, there is much more scope to make the policies and legislation stronger in this domain. Yet we have seen that there has been a

substantial growth towards this, whether the people are compensated for their shifting because of large infrastructural projects such as say dams or canals or any other large infrastructural project or it be the victims of pollution.

For example, the gas leaks or the nuclear leaks or some ~~other~~ other pollution problems, the victims have been compensated because there were policies in place. How fairly has it been implemented is again the question of implementation, but the policies and legislation has been institutionalized. The next principle 14 states that, states should effectively cooperate to discourage or prevent the relocation and transfer to the other states of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Despite international laws being formulated to strengthen this principle based on this principle, yet we see these policies are not being adhere to; that is why we see a lot of waste being dumped in the seas, oceans and on uninhabited lands which is in total violation of this principle and the policies which govern this principle. Principle 15 states that in order to protect the environment the precautionary approach shall be widely applied by states. So, instead of working on the damage once it has happened, the states should work on the precautionary approach where no environmental damage takes place.

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Rio Declaration on Environment and Development

- Principle 16 National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.
- Principle 17 Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.
- Principle 18 States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

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Principle 16 states that national authorities should endeavor to promote the internalization of environmental costs. So, the environmental costs of any project should

be internalized within a state. And, they should not be passed on to the other states, neighboring states which is very close to the principle 14 as we have just discussed. Principle 17 states that environmental impact assessment as a national instrument shall be undertaken for proposed activities. This led to the creation of international protocols, international laws and policies and also setting up of organizations which would carry out environmental impact assessment.

We have seen the codes being developed; we have seen the frameworks, methodologies and protocols being developed to carry out environmental impact assessment for each of the nation. Principle 18 states that states shall immediately notify other states of any natural disaster or other emergencies that are likely to produce sudden harmful effects on the environment of those states that is why there have been no wars over such issues like natural disasters. For example: flooding, flooding of a river in one state has very rarely been a cause of concern to the state where, the impact of flood could be passed on; because of the international treaties, because of the international understanding of the subject.

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Rio Declaration on Environment and Development

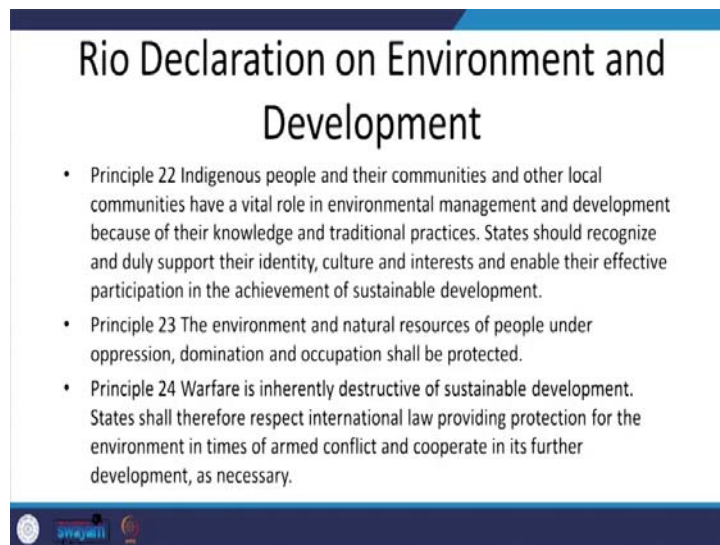
- Principle 19 States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.
- Principle 20 Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.
- Principle 21 The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 19 states that states shall provide prior and timely notification and relevant information to potentially affected states on activities that may have a significance, significant adverse trans boundary environmental effect, which is continuation of principle 18 only. Principle 20 very clearly emphasized upon the vital role of women in

environmental management and development. Besides placing human beings at the center of the entire discussion, women particularly were given a lot of emphasis as far as environment to management and development was concerned.

And, the states were urged to device developed policies to ensure the full participation of women for achieving sustainable development. Principle 21 places a larger emphasis on the creativity ideas and courage of the youth and that the youth be brought to the center of the discussion. So, besides humankind as a large a bigger subset women and youth were emphasized specifically identifying, understanding the significance, the role, importance of the role in these two groups towards sustainable development.

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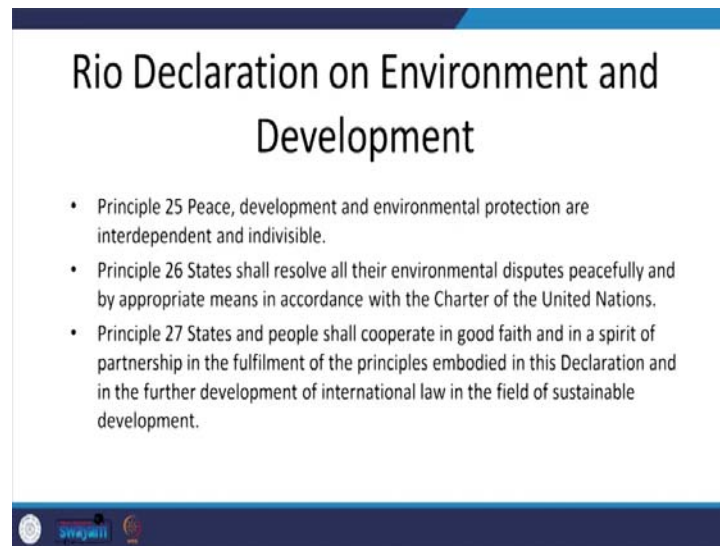


Principle 22 emphasized on integrating and respecting indigenous people and their communities and other local communities who have been identified to play a pivotal role in environmental management and development. Because, of their traditional knowledge, because of the traditional practices that these communities possess. Principle 23 states that the environment and natural resource of people under operation, domination and occupation shall be protected.

That is why we have seen a lot of protests happening all across the world which were by people and communities who were not so powerful, yet had a larger control over the environment and natural resources of a certain area, largely the indigenous communities. Principle 24 states war, warfare is inherently destructive of sustainable development and

that the states shall respect international law in order to reduce the armed conflict, that is why we have seen very few wars after World War II that have taken place. This is because of the very strong international policies which are in place.

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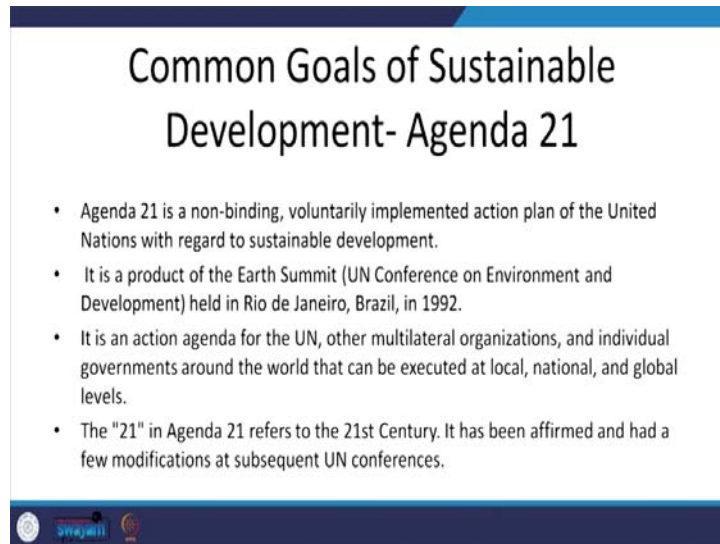


Principle 25 states that peace, development and environmental protection are interdependent and indivisible. So, states should emphasize on peaceful development simultaneously taking care of the environment. Principle 26 states that states shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the charter of the United Nations. And, principle 27 which was the last of this principle of Rio Declaration states that states and people shall cooperate in good faith and in a spirit of partnership in the fulfillment of the principle embodied in this declaration and in the further development of international law in the field of sustainable development and that happened reasonably well.

So, a lot of new a number of new laws treaties, protocols were developed in the field of sustainable development which were abided, which are being abided by large number of countries, larger part of the world and that is why world is progressing towards sustainable development together. However, as the initial view principle state that the developing and underdeveloped nations and communities needs to develop and come up to a level where they have an access to all the basic facilities, needs of life and they have a good quality of life. Till that point is achieved, till that state is achieved it is an ongoing

process. The sustainable development has not yet been achieved; this was the Rio Declaration where these principles were laid out.

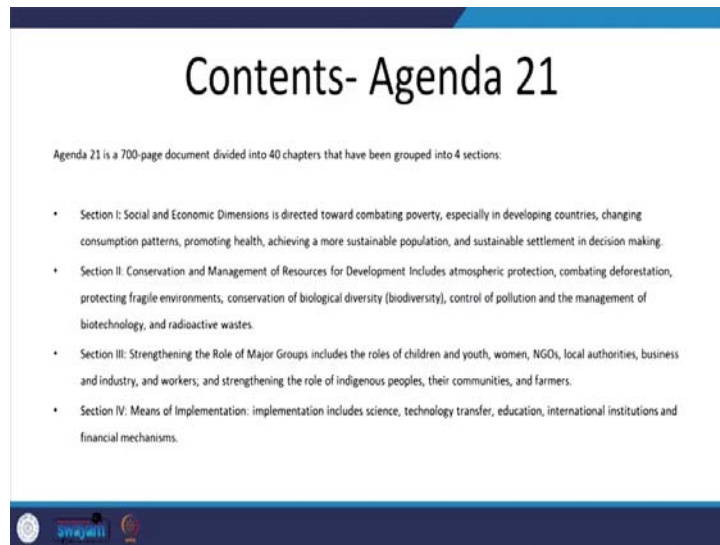
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If we look at Agenda 21 which was the second document which was the product of Earth Summit at Rio in 1992, it was a non-binding, voluntarily implemented action plan. So, while the declaration only stated the principles and it was a brief document; Agenda 21 was actually an action plan of United Nations with regard to sustainable development. It is actually an action agenda for the UN, United Nations and other multilateral organizations and individual governments around the world, that can be executed at all levels.

Local level, national level and global level and this 21, in Agenda 21 actually refers to 21st century. It was in 1992 that this was opened up for signatures of interested parties and in 1995, the first conference of party was held and which later led to the Kyoto Protocol.

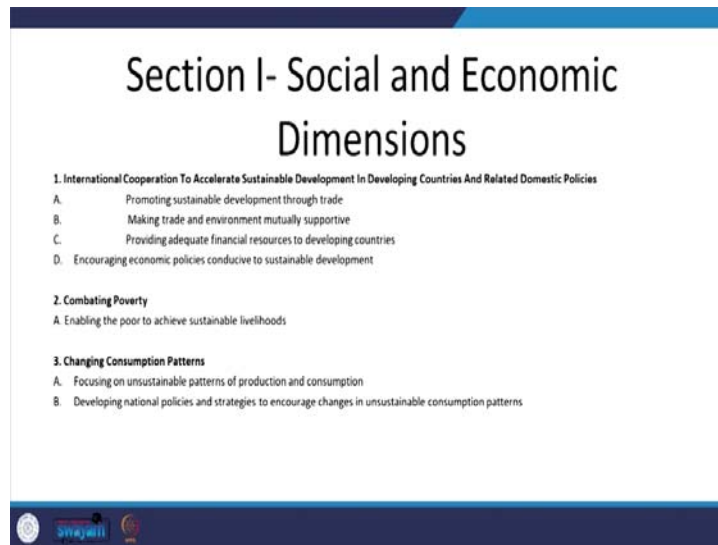
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Agenda 21 is divided into 4 main sections, section I deals with social and economic dimensions, section II discusses about conservation and management of resources for development, section III talks about strengthening the role of major groups. So, these three sections first one talks about socio economic dimension, section II talks about the environmental dimension largely, section III largely talks about the ~~socio-cultural~~socio-cultural dimension.

So, all the three dimensions of sustainable development are addressed here in Agenda 21 and section IV talks about the means of implementation of all that has been discussed in section I, II and III; let us quickly look at all these sections independently.

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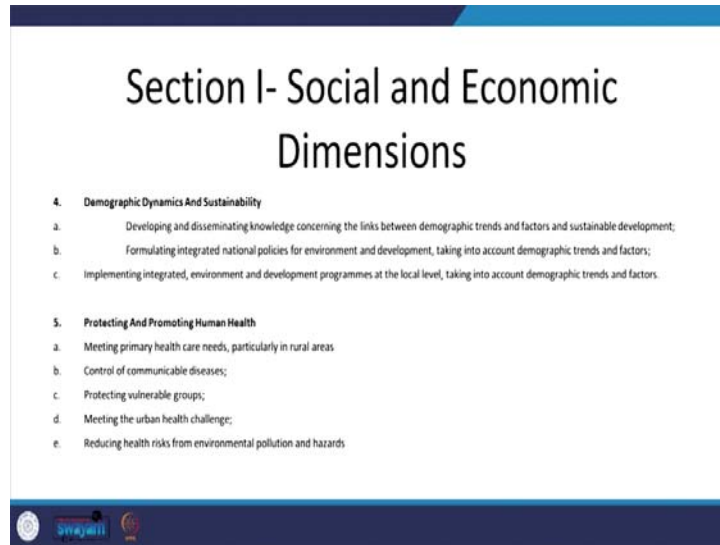
Section I which is on social and economic dimension. So, the first agenda is international cooperation to accelerate sustainable development in developing countries and related domestic policies. Emphasizing upon the principles of Rio Declaration, these agendas were defined, these agendas were designed. And, the first one is to exhilarate sustainable development in developing countries. This was done in order and this was after identifying the needs of developing countries to develop further and, identifying the need that in the process of development these countries will be exerting, putting a larger pressure on the environment.

Thus, helping the developing countries to develop domestic policies in order to accelerate sustainable development through trade; through making the trade and environment mutually supportive, providing adequate financial resources to developing countries. So, a lot of funds through the mechanism, through the operations of United Nations is transferred from developed countries to developing nations for achieving this particular agenda which is of accelerating sustainable development in developing countries. The second agenda is of combating poverty, enabling the poor to achieve sustainable livelihoods.

Now, this was individual states or countries responsibility to formulate policies in order to eradicate poverty. We will look at how much has Agenda 21 been successful ever since it ~~was it~~ first came into existence; let us first go through all the agendas listed in

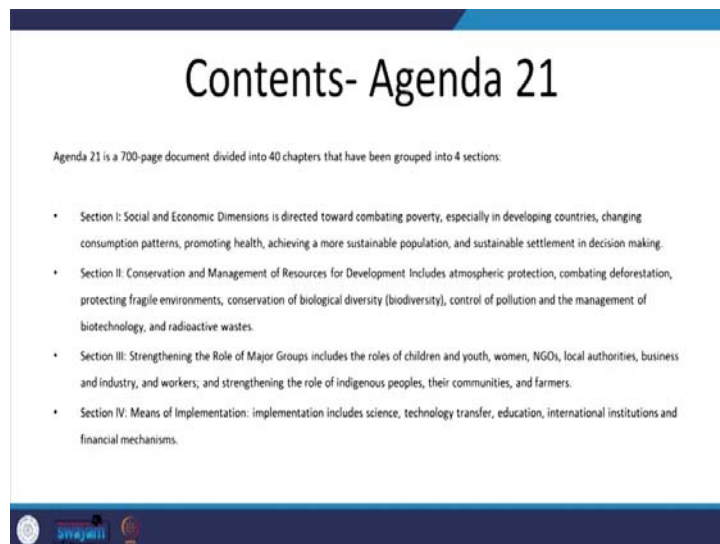
Agenda 21. The third agenda is changing consumption patterns. So, focusing as the principal also stated focusing on sustainable patterns of production as well as consumption.

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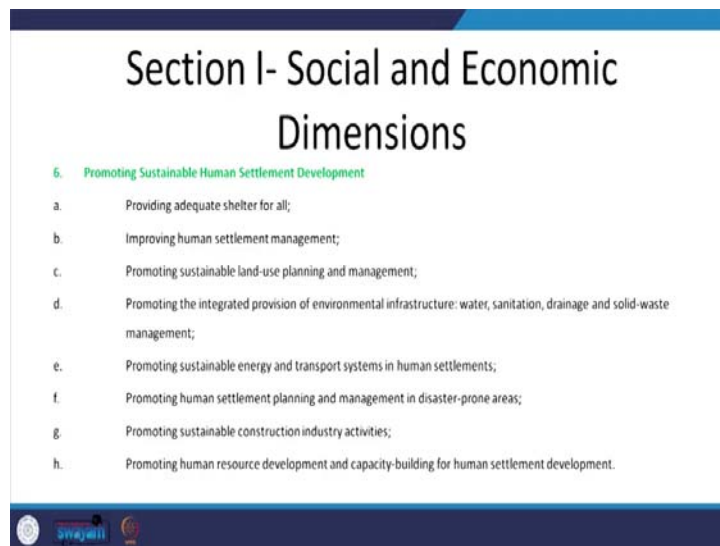
The fourth agenda is on demographic dynamics and sustainability. So, understanding the links between demographic trends and factors and sustainable development so, it is not just that by placing emphasizing on environmental dimension and economic growth, we would be able to achieve sustainable development.

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This was essential to identify the demographic trends and identifying the link between these demographic trends and sustainable development. The next agenda was protecting and promoting human health, meeting the primary health care needs, controlling the communicable diseases where the research from one country has helped to control the communicable diseases in the under developed and developing countries and communities who are underprivileged. Protecting vulnerable groups, groups which are vulnerable to a lot of damage.

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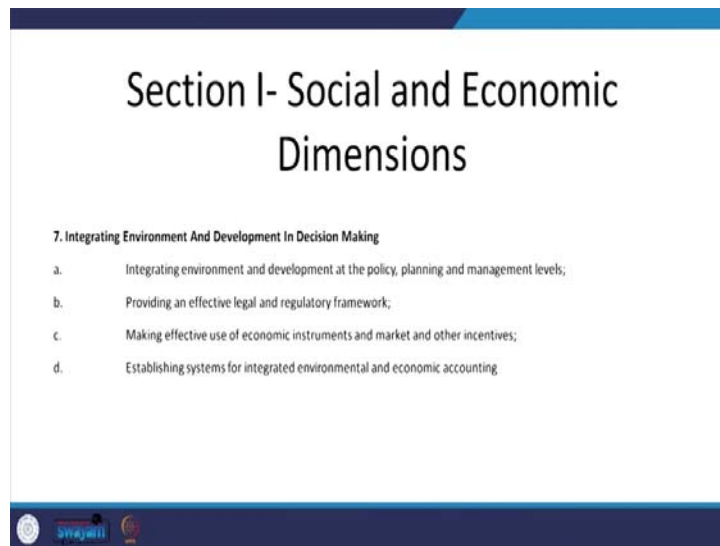
Meeting the urban health challenge, reducing health risks from environmental pollution and hazards were all part of improving the health. The next agenda which is most important for us as architects, designers, planners is Agenda 6 which says promoting sustainable human settlement development, identifying the need that settlement or house is one of the most fundamental needs, basic needs of every human being. It was realized that as the world develops, grows every human being must have a shelter, a settlement, sustainable human settlement.

Thus, this agenda which says it should be providing adequate shelter for all the state, improving human settlement management. So, management of services in these human settlements in a sustainable manner, promoting sustainable land use planning and management, promoting the integrated provision of environmental infrastructure that is water, sanitation, drainage and solid waste management. All of that should be provided

in an integrated manner in a human settlement. Promoting sustainable energy and transport systems in human settlements; now, pay attention that this agenda was drafted in 1992, Agenda 21.

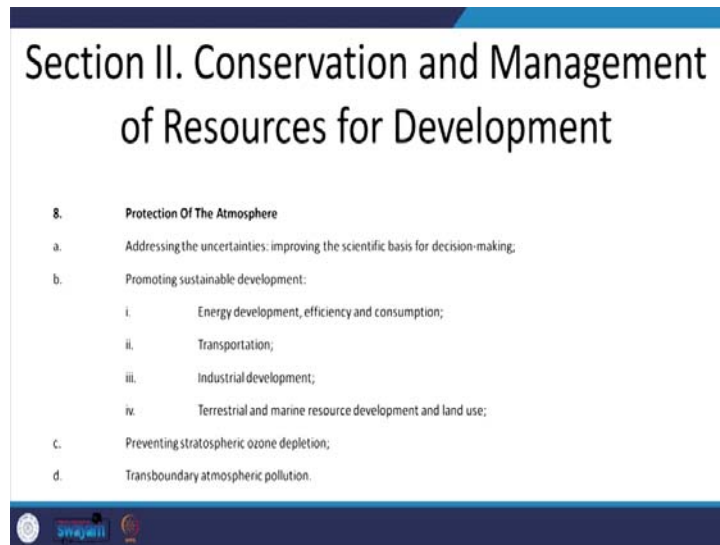
And, all these issues, all these aims which we are reading here as part of Agenda 21 still need to be met. We are still struggling to develop the human settlements in such a manner that there is an integrated provision of environmental infrastructure, where they are sustainably managed, where we have sustainable energy and transport systems available. So, a lot of work in this regard is still needed; as we have emphasized established that the built environment or human settlements which are being developed are impacting the natural environment in an adverse way, in an adverse manner. So, we understand that this Agenda 6 which is most important for us to understand still holds good, it is unfulfilled and a lot of research and work is still required to be done in this regard.

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Agenda 7 talks about integrating environment and development in decision making, at the policy planning and management level through provision of ~~a-aman~~ effective legal and regulatory framework. This would also be done by making use of economic infrastructure and market.

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In section II there was a larger emphasis which was placed on conservation and management of resources for development. The first and foremost being the protection of the atmosphere, promoting sustainable development through energy development, efficiency and consumption, transportation, industrial development and terrestrial and marine resource development.

Again Again, emphasizing that there is a direct link, there is a direct impact of the way human settlements grow. The way we develop our infrastructure whether it be transportation whether it be industries whether it be energy, all of this has a direct impact on atmosphere. That is why besides having a separate agenda under the ~~socio~~ socio-economic dimension, there is again a repetition, there is again an emphasis on promoting sustainable development while, talking about protecting the atmosphere.

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Section II. Conservation and Management of Resources for Development

9. Integrated Approach To The Planning And Management Of Land Resources

10. Combating Deforestation

- A. Sustaining the multiple roles and functions of all types of forests, forest lands and woodlands
- B. Enhancing the protection, sustainable management and conservation of all forests, and the greening of degraded areas, through forest rehabilitation afforestation, reforestation and other rehabilitative means
- C. Promoting efficient utilization and assessment to recover the full valuation of the goods and services provided by forests, forest lands and woodlands
- D. Establishing and/or strengthening capacities for the planning, assessment and systematic observations of forests and related programmes, projects and activities, including commercial trade and processes

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The next agenda is integrated approach to the planning and management of land resources which is the key to sustainable development. Anything which is sustainable is integrated; it is an interconnected system where all the systems are coming together. The next is combating deforestation, forests are the paving way for a lot of developmental activities whether they be settlements whether they be infrastructure whether they be industries. Forests are being cut, they were being cut and they are being cut. So, the agenda still holds good combating deforestation.

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Section II. Conservation and Management of Resources for Development

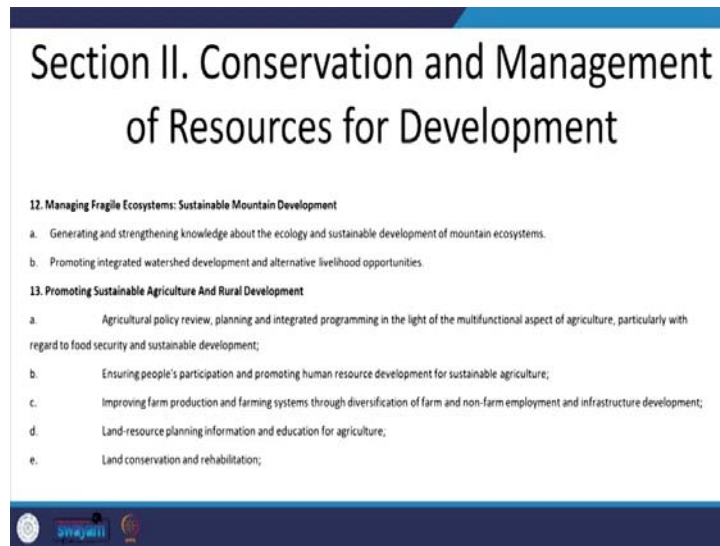
11. Managing Fragile Ecosystems: Combating Desertification And Drought

- a. Strengthening the knowledge base and developing information and monitoring systems for regions prone to desertification and drought, including the economic and social aspects of these ecosystems;
- b. Combating land degradation through, inter alia, intensified soil conservation, afforestation and reforestation activities;
- c. Developing and strengthening integrated development programmes for the eradication of poverty and promotion of alternative livelihood systems in areas prone to desertification;
- d. Developing comprehensive anti-desertification programmes and integrating them into national development plans and national environmental planning;
- e. Developing comprehensive drought preparedness and drought-relief schemes, including self-help arrangements, for drought-prone areas and designing programmes to cope with environmental refugees;
- f. Encouraging and promoting popular participation and environmental education, focusing on desertification control and management of the effects of drought.

swajail

Next is managing fragile ecosystem, combating desertification and draught. We have seen the kind of ~~impact built~~impact built—environment has on land and desertification and land degradation being the one of the most significant impacts. So, the agenda is to manage the fragile ecosystems and combating desertification.

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Within fragile ecosystems mountains have been identified as a special part of earth and sustainable mountain development has been emphasized upon here. Besides this there is another agenda which is towards promoting sustainable agriculture and rural development. When we looked at when we were discussing about the visionaries who promoted sustainable development through their vision through their approach, we were talking about Mahatma Gandhi; who emphasized upon the sustainable rural development, independent, self reliant rural development. That is an agenda which finds place in Agenda 21, promoting sustainable agriculture and rural development.

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Section II. Conservation and Management of Resources for Development

13. Promoting Sustainable Agriculture And Rural Development

- f. Water for sustainable food production and sustainable rural development;
- g. Conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture;
- h. Conservation and sustainable utilization of animal genetic resources for sustainable agriculture;
- i. Integrated pest management and control in agriculture;
- j. Sustainable plant nutrition to increase food production;
- k. Rural energy transition to enhance productivity;
- l. Evaluation of the effects of ultraviolet radiation on plants and animals caused by the depletion of the stratospheric ozone layer.

swkjalii

Promoting sustainable agriculture and rural development has a number of subheads because, it is one of the most important agendas. And, as the population is growing there is an increased demand for food. And, since the urbanization is increasing as we have seen in yesterday's lecture, we see that there is a larger population which is concentrating in the urban centers, urban areas.

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Section II. Conservation and Management of Resources for Development

14. Conservation Of Biological Diversity

15. Environmentally Sound Management Of Biotechnology

- a. Increasing the availability of food, feed and renewable raw materials;
- b. Improving human health;
- c. Enhancing protection of the environment;
- d. Enhancing safety and developing international mechanisms for cooperation;
- e. Establishing enabling mechanisms for the development and the environmentally sound application of biotechnology.

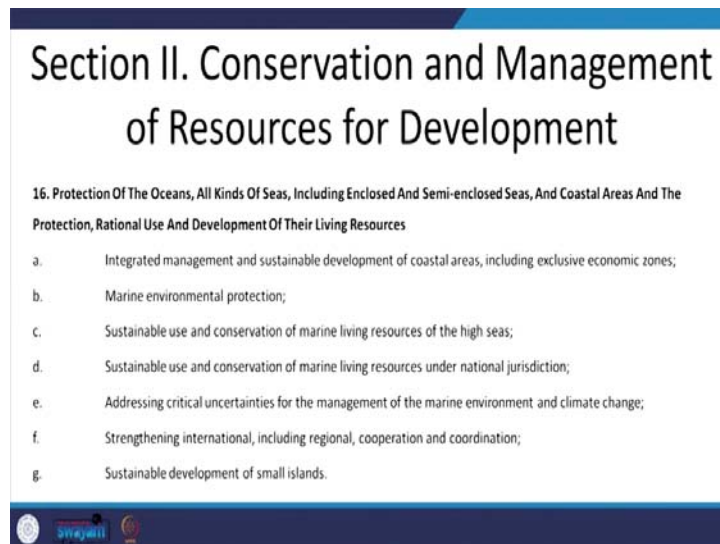
swkjalii

Thereby, in tremendously increasing the pressure on resources in urban areas. This can be mitigated, can be handled if we develop our rural areas sustainably. Next is

conservation of biological diversity and environmentally sound management of biotechnology. Now, biotechnology was identified as one of the very important technologies, means or fields in the coming times. This is 3 decades back.

So, for increasing the availability of food, feed and renewable raw materials, improving human health, enhancing protection of the environment, enhancing safety and developing international mechanisms for cooperation; for all ~~these biotechnology~~ these biotechnologies was identified as a very significant important field and it still continues to do so.

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The next one is protection of our oceans, all kinds of seas including enclosed and semi enclosed seas and coastal areas and the protection, rational use and development of their living resources. Unfortunately, despite identifying protection of the oceans and seas as an agenda 3 decades back, the health of our aquatic ecosystem has been degrading over years, over decades. So, this agenda still holds good.

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Section II. Conservation and Management of Resources for Development

17. Protection Of The Quality And Supply Of Freshwater Resources: Application Of Integrated Approaches To The Development, Management And Use Of Water Resources

- a. Integrated water resources development and management;
- b. Water resources assessment;
- c. Protection of water resources, water quality and aquatic ecosystems;
- d. Drinking water supply and sanitation;
- e. Water and sustainable urban development;
- f. Water for sustainable food production and rural development;
- g. Impacts of climate change on water resources.

Logos for UN, WFP, and UN Women are visible at the bottom.

The next is protection of the quality and supply of freshwater resources which is dwindling. We have already seen the impact of melt environment on water and we have seen how water bodies are shrinking, how water bodies are getting contaminated, polluted. All of this was already identified in Agenda 21 as this Agenda 17.

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Section II. Conservation and Management of Resources for Development

18. Environmentally Sound Management Of Toxic Chemicals, Including Prevention Of Illegal International Traffic In Toxic And Dangerous Products

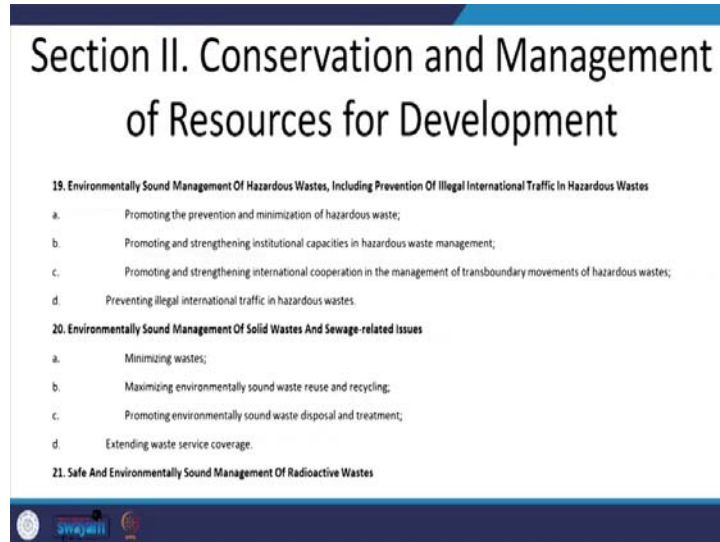
- a. Expanding and accelerating international assessment of chemical risks;
- b. Harmonization of classification and labelling of chemicals;
- c. Information exchange on toxic chemicals and chemical risks;
- d. Establishment of risk reduction programmes;
- e. Strengthening of national capabilities and capacities for management of chemicals;
- f. Prevention of illegal international traffic in toxic and dangerous products.
- g. In addition, the short final subsection G deals with the enhancement of cooperation related to several programme areas

Logos for UN, WFP, and UN Women are visible at the bottom.

Next is environmentally sound management of toxic chemicals including prevention of illegal international traffic in toxic and dangerous products. We have seen how the nuclear waste dumped from one country affected large part of the world, seas and how it

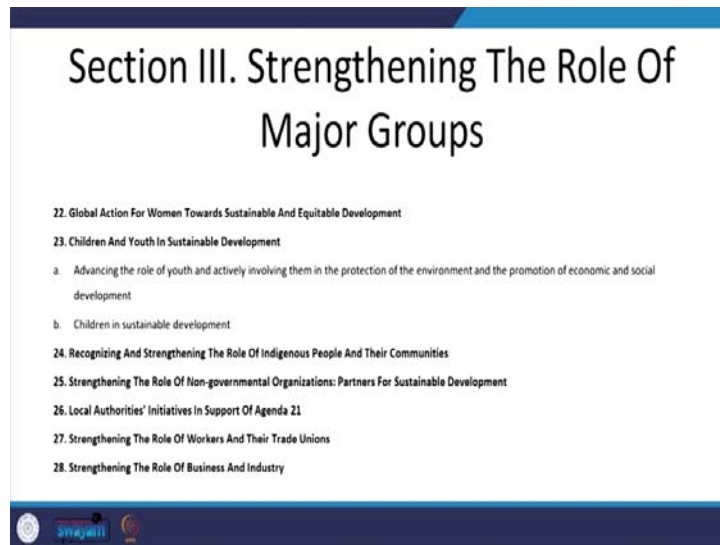
entered the food chain and affected large population. Such can be the impact of not so good management of these toxic chemicals, hence this agenda.

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Next is environmentally sound management of hazardous wastes and environmentally sound management of solid waste and sewage related issues. Now, in developed countries large number of developed countries have achieved many of these agendas. For example, environmentally sound management of solid wastes has significantly been achieved in many of the developed countries, while developing countries are still struggling to manage, still struggling to achieve these agendas.

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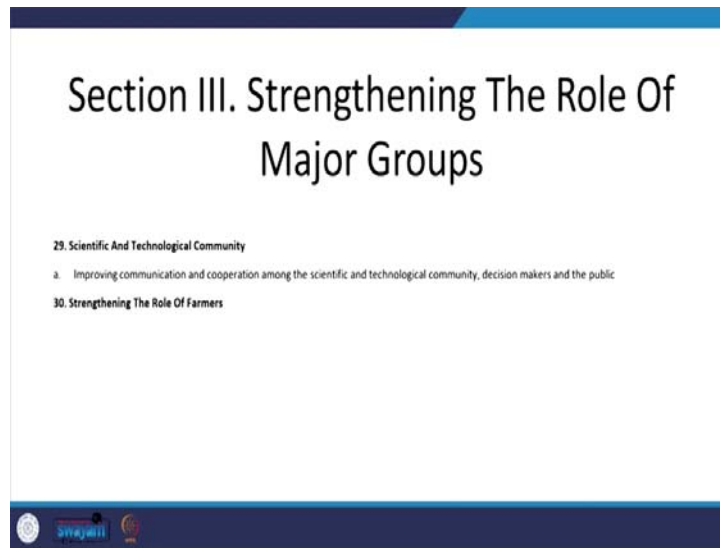


Safe and environmentally sound management of radioactive waste; these were all part of the section II which largely focused on environment. Section III talks about strengthening the role of major groups. Now, the groups which have been identified through various agendas in section III are one woman so, global action for women toward sustainable and equitable development. Second is children and youth in sustainable development, understanding that children and youth can be trained right from their early ages.

And, they can become instrumental in driving sustainable development, there was a larger emphasis which was placed on the role of children and youth. Another major group was indigenous people and their communities. So, recognizing and strengthening the role of indigenous people. The next major group was Non-Governmental Organization (NGOs). And, in the last 3 decades we have seen the growth in the number and also the work domain of these NGOs non-governmental organization towards sustainable development.

Another major group is local authorities because, the implementation at the end of the day will be happening through the local authorities, governance at the local level. Next major group is workers and their trade unions. They drive the large part of the economy and they have been identified as the major group towards sustainable development. Next is the role of business and industry towards sustainable development.

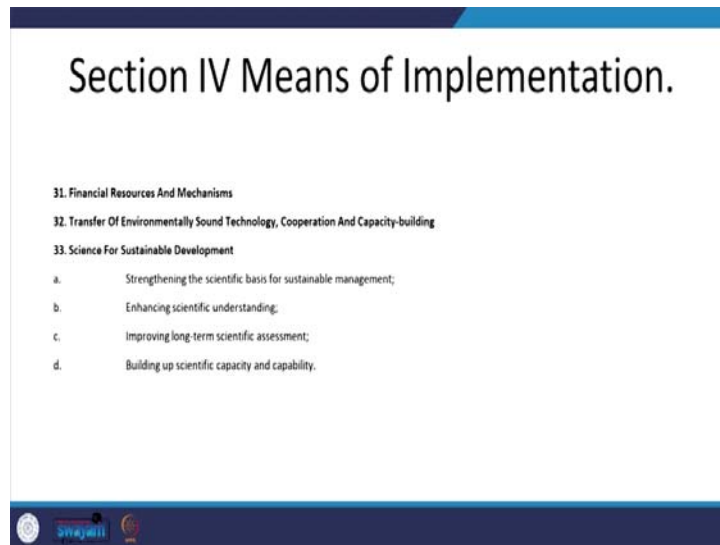
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Through the section III, we have identified the major groups which are required to drive the overall agenda of sustainable development. Another group is scientific and technological community which is being strengthened which is being motivated across the world to drive the decision making and research, technological research.

And last, but not the least the role of farmers because agriculture is an important part of any development, if the humankind has to survive. So, this was section III where the major groups were identified, social groups were identified and their roles were identified through the agendas.

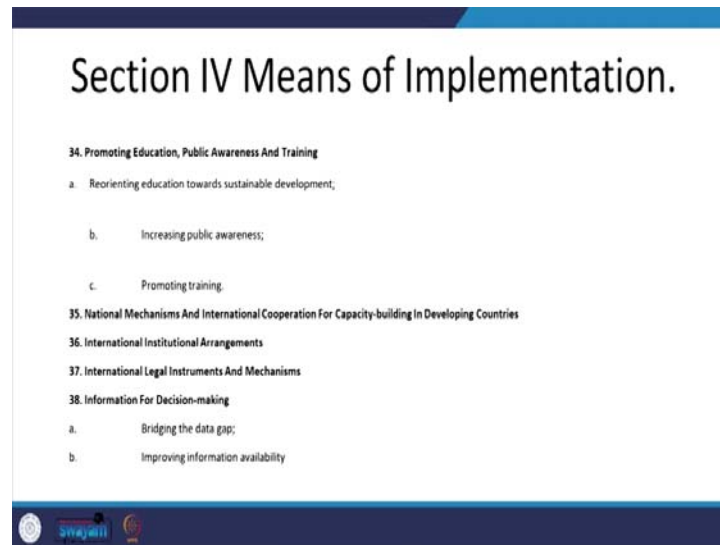
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The last section IV is on means of implementation. So, the means of implementation are the most important being financial resources and mechanisms which to a large extent United Nations or the international community has driven through mechanisms, through organizations like World Bank and the funding mechanism. The next is transfer of environmentally sound technology cooperation and capacity building.

Here we have seen an increased cooperation between different countries, nations in developing environmentally sound technology and transferring it and also capacity building. The third is science for sustainable development, a lot of new technology, a number of new products have been developed in the last 3 decades which have helped the humankind to inch closer to sustainable development. So, the use of science and technology for sustainable development has been emphasized as a means of implementation.

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Another very important means is education, public awareness and training. All the governments across the world are placing emphasis, promoting education and public awareness, skill training. The next being national mechanisms and international cooperation for capacity building in developing countries. We see a lot of support being provided ~~by developing countries to, by~~ developed countries to developing countries for capacity building.

We have seen this happening in our own country India, where the larger agenda of energy conservation in buildings was driven with the help of international agencies, with the help of international funding which came to a developing country like ours. The next is the next means of implementation is international institutional arrangement and international legal instruments and mechanisms. Both of these have been emphasized upon by United Nations through formation of various organizations, various bodies, international bodies.

And, another means of implementation is the information for decision making. So, making the processes and the data available to a larger public, bridging the data gap and improving the information availability which has also got a boost because of technology like internet. So, a lot of information for decision making is easily and abundantly available. This completed Agenda 21. Now, the discussion is we have a lot of agendas

which are actually driven and governed by how we design; how we design our built environment.

How our buildings are design, how our industries are designed and how do they perform, how the infrastructure bwe design, how the technology for developing these buildings and infrastructure be developed in order to fulfill the agenda. If we look at what Agenda 21 has achieved and if we follow what has happened in the past 3 decades which by the means of earth summits so, Rio plus 10, Rio plus 20, Rio plus 25 has tried to do, they have tried to take a stock of the progress which was made on Agenda 21. And, unfortunately till date Agenda 21 remains unfulfilled, a lot ~~of these~~ of these agendas in large part of the world are yet not achieved, they are not fulfilled.

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That is why Agenda 2030 for sustainable development was proposed, it built upon Agenda 21 only, elaborated upon that. But, emphasized upon the needs which are still unfulfilled, the agendas which are still unfulfilled. I will conclude my lecture here today and we will see how and why do we need to make sustainable buildings, come up with sustainable architecture, while an Agenda 21 emphasized the need for sustainable habitat, sustainable human settlement 30 years back. Yet, why we need sustainable architecture and sustainable buildings today. And, then we will move on to understanding how we design, construct and make sustainable architecture.

Thank you.