Environmental Impact Assessment
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Lecture 06
Definition Process and Purpose of FIA

Definition, Process, and Purpose of EIA

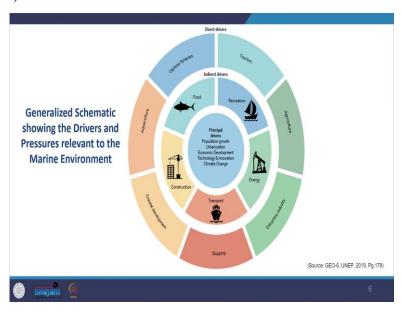
Welcome to the course Environmental Impact Assessment. In the previous week, we discussed how the approach to the environment changes through time, like how the movement was first initiated for conservation, then for preservation, and now we are looking at the risk, the risk that we are seeing as a frontier.

And we also learned about how we are reaching the tipping point. We went through the Global Environmental Status Report, we reviewed different drivers of change. We also looked into air, biodiversity, oceans and coast, land and soil, and freshwater status, like globally, what is happening and many, many of the cases we also looked at in the context.

So, now after going through the environmental status, we understand where we stand and what challenges are placed before us. So, this week, we will try to understand the concept of sustainable development, what it means, the purpose, and scope of EIA, and then the legislative framework within which EIA works.

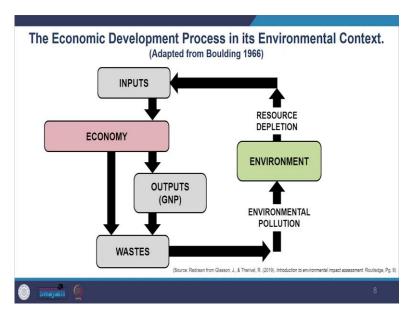
So, that is what we are going to dedicate this week to. While we go through this particular segment, think, reflect, and connect with a global and your local environment, you must see the status of that environment and review what EIA can do and what are the limitations of EIA.

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For example, you may recollect, that you saw this image where you reviewed how our requirements need users are multiple, and how there are conflicting interests, how exploitation of one resource or activity can impact many others including the environment. We also saw how the increase in population, we need more and more economic development.

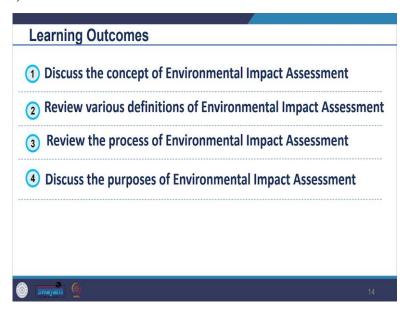
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For that, we need to build infrastructure, set up industries, and undertake mining, and with that, we consume more resources and generate more waste in the environment. Therefore, this sustainable development becomes essential for us, and like really need to look into it. So, accordingly, like for this particular segment, because of sustainable development, the EIA was developed as a tool.

So, we are going to cover that. So, our coverage for today would include. We will look into the overview of environmental impact assessment, why it was introduced, and then we will look into the definitions of environmental impact assessment. And we will look into its process and then the purpose, the core purpose of EIA.

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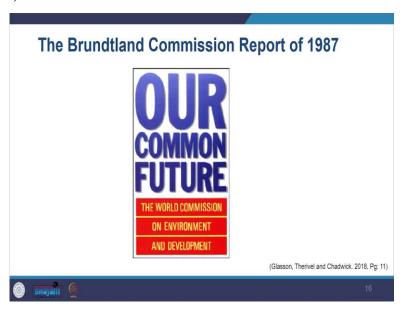


So, the expected learning outcomes that we are seeing, which is expected from you after the completion of this particular session is that you should be able to discuss the concept of EIA, what is the entire idea behind it, and then review various definitions that you may find a lot of definitions, so you should be able to review various definitions of environmental impact assessment and understand the core idea behind it.

Then you should be able to review the process like what, what processes followed under EIA, and then you should discuss the purpose of EIA. So, that will be our coverage today, and then the learning outcomes expected from you. So, because we are talking, we are looking at sustainable development.

And we saw the background, we discussed all the environmental status, and we looked at the development part of it and what is the conflict, what are the multiple uses and what are the conflicting uses here. Because of that, we must look at sustainable development.

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The major push for this particular concept was provided in 1987 in the Brundtland Report of the World Commission on Environment and Development at the Rio Summit in 1992. So, if we see that this particular concept was pushed at this particular time. And sustainable development, what do we mean by it, it is about the better management of current activities in harmony with the environment.

So, we have seen all the conflict that comes and how we manage our activities so that it is in harmony with the environment. So, we see that to address the sustainability aspect, EIA as a tool was developed to review better ways to avoid or mitigate the possible damaging effects. So, all the damaging effects which we saw.

So, how to mitigate them, and how to mitigate those effects of future development which we are going to do on the environment at the planning stage itself. So, how we can do it right away before that occurs? Through environmental impact assessment, EIA, we can assess the impacts of a planned activity on the environment in advance, before we execute the project, thereby avoiding any undesirable situation those situations can be short-term or long-term, and the impact can be short-term or long-term.

So, it helps us to avoid, it helps us to foresee those kinds of impacts, and then avoid those impacts through this process. So, EIA was first formally established in the USA in 1969, and after that, it has spread worldwide. And EIA has received a significant boost in like all across the world. And especially after the USA, it was Europe with the introduction of EC directives on EIA in 1985.

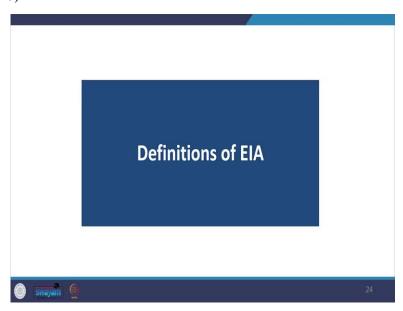
This was implemented in the UK in 1988. In India, if you look at India, EIA started in 1977 when the Planning Commission asked then the Department of Science and Technology, DST to examine the River Valley Project from an environmental angle. So, that is when we started looking into it. Subsequently, various other projects were brought under the purview of EIA. And it was in 1994 when EIA was made mandatory in India under the Environmental Protection of 1986.

So, we see that EIA is a process tool countries have adopted, they have expanded the process, and they have advanced the process. And when we look at EIA as a process, it has continuously progressed. So, whenever

we study EIA, we should review EIA as an ongoing concept because it is continuously developing and evolving. And we also need to learn this particular subject from the contextual experience. So, how it works in one place and how differently it works in some other place.

So, over the advancement, we also witnessed considerable change in legislation and guidance coming from national and international sources, so there is a lot of information and guidance coming at different levels if you can see the European Commission then you can also see the World Bank International Finance Corporation, and then you also see the Ministry of Environment and Forests for climate change, you also see MOEFCC in the Indian context.

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So, now, moving on, let us first look at definitions of EIA. There are a range of definitions we see and those definitions vary from the kind like from being very broad definitions to very specific definitions very lengthy definitions very small definitions we see. So, here we can see the broader definition we find is by Munn given a 1979 which refers to the need to identify and predict the impact on the environment. So, it highlights the word identify and predict and looks at the impact on the environment and men's health and wellbeing.

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So, it is not only talking about the environment, but also about our health and well-being, of any proposal that comes up or any policies that come up, programs that come, projects that come, or any operational procedure, and to interpret and communicate information about the impact.

So, you may also note that we are talking about interpreting it, interpreting the impact, and communicating it, communicating about the impact to the larger community and the decision-makers. So, it talks about identifying, and predicting, and you can see the range of things that are covered here, as well as interpreting it and then communicating it. So, you see how we are defining EIA here, and the definition that we can see is the very, very brief definition given by UNECE, given in 1991.

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It says that EAI is an assessment of the impact of a planned activity on the environment. So, you can think how it is different from the previous one which we saw, it is just a one-liner, which says that the assessment of impact. So, whatever impact will happen, it is going to assess that and we are looking at the plant activity on the environment. So, it is only talking about the environment here.

Here we are looking at the EIA definition adopted by the International Association for Impact Assessments, IAIA, which says EIA is the process of identifying, predicting, evaluating, and mitigating the biophysical, social, and other relevant effects of the proposed development proposal prior so major decisions being taken and commitments made.

So, here again, you look at we are trying to identify, we are trying to predict, we are trying to assess and at the same time, we are trying to mitigate it, reduce the impact and these impact on the biophysical space, social domain as well as any other relevant effects. So, of the development proposals, whatever we want to do of that, we need to take care of all these aspects, and then accordingly make a major decision about whether this development proposal has to be taken up or not, or what kind of mitigations would be adopted following that.

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So, now, we will look at the environmental impact assessment process. So, that was about the definitions we saw, if you look at the practical meaning of EIA, it is a process, it is a systematic process that we adopt, through which we examine the environmental consequences, the impact, what impact it has on the environment of development actions, whatever development action we want to take in terms of projects.

So, of that, the impact on the environment, such as the development action could be such as building of highways, building of factories or undertaking mining activity or so on. And we undertake this in advance. So, before we even do that activity, we do this assessment before undertaking that activity. So, the EIA process requires several steps as outlined in this diagram, you can see it in this diagram here.

There are four main key stages in the EIA process screening, scoping, and identification of impact, which you see in the first box. So, the first box shows you that first, we are going to screen, scope, and identify the impact. Second you can see impact prediction where you see what project activity we will have, what kind, what intensity, and what extent of impact or nature of the impact, we see it in the second box here. In the third box, you see the process of review and decision-making.

So, once you have done the impact prediction, then you review it and then the fourth box, the fourth stage, you see the post-decision monitoring, so once we have made the decision then we follow it up and we see what is going on based on our prediction what we have made. So, you also see public consultation. If you look at the image here you will also see the public consultation and participation at various stages and the process is cyclic.

If you see that the arrow is going up, you will see that the process is cyclic, requiring revisiting and revisiting your previous steps and then there is also a system of feedback and then interaction between various steps. This is a conceptual process and varies from country to country as per the context. So, this EIA, what you are seeing here might not be the same for your country. So, this process varies.

Here we are looking at a very standardized process or a generalized process to understand the concept of EIA. We shall cover all these in detail in the following lectures. So, looking at each of the steps, first look at the project screening step, where we narrow the applications of EIA to those projects that may have significant environmental impact.

So, we are going to like we will have a lot of activities as you saw in the range of human activities which cause impact on the environment, but when you consider them individually, the impact might be insignificant. Further, you see what will be practical to monitor or regulate, so that kind of screening we do here, if you may recollect, in the global environmental reports, when we were studying the environmental status, we had seen that maximum impact cumulatively was from agriculture.

So, you saw that mostly the first or the second negative impact was coming from the agricultural activity, which was causing land use change, loss of forests, and then also land degradation. However, at individual farmers' level or individual site level, the impact would be negligible insignificant. So, will it be feasible to undertake EIA for that, you need to think about what could come under this.

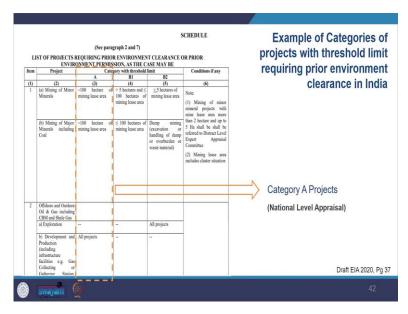
Therefore, in this stage screening is undertaken to determine whether EIA is needed or not. So, for what kind of activity, the scale of activity, the nature of the activity being undertaken, would that need an EIA or not, and it is important to look at it because it is time-consuming, and it needs resources of all kinds to undertake EIA. So, screening, we see that also varies from country to country.

For example, in developed countries, the process of screening is well-defined. So, for instance, in EU countries competent authorities, decide whether the environmental impact assessment is required or not, and they decide based on advice from the developers, NGOs, and statutory counselors.

In Japan, we see that screening decision is made by the authorizing agency, they involve the agency and they have certain criteria based on that they decide whether EIA is required for that particular action or not. In Canada, we see the federal authority, that is the main central authority will determine whether an EIA is required or not. So, the developed countries have the system in place.

And whereas we see that in many of the developing countries, as per UN training notes, we see that screening practice in EIA is very weak. In most cases, there is a list of activities. So, they have a defined list of activities that require EIA but without any threshold value, so they do not have values like for, even the activities could vary with size. And then its impact could vary accordingly. So, but then there is no mostly there is no threshold value, which is given. So, that is what trend we see.

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In India, if you look at it, screening is done based on a defined list. So, we also have a list and we have threshold values on the size of the project that is used for categorizing the project. And based on that we decide whether the project will be cleared requires EIA or not and if it will be cleared by the state government or the central government. So, those kinds of decisions are made.

And even this process has certain benefits, even though it is done by list it has the benefit of saving time and resources and it avoids unnecessary review periods. So, in the list here you can see this as used for the Indian context. You can see how those categories are defined and depending on this scale of work, nature of work, whether EIA is required or not required which agency will deal with it, or to what extent the study has to be done.

So, moving on to the next stage in the process, we see the process has coped. In coping, we identify the possible impact of the project and this is done at the beginning of the project. And we also look at the impact of the alternatives. So, there might be one solution and there might be alternative solutions also. And we look at the possible impact of it like what could happen.

So, the purpose of doing this is to invest our time in those areas where the impact assessment is needed and be able to identify it and remove the areas where you might not find significant impact. So, that kind of understanding would save our resources and time. Further, we see that one should also give due consideration to the alternatives, where it is there and when we give due consideration to the alternative, it ensures that the proponents of the project have considered all feasible approaches.

So, once one project is coming, and then if the alternatives are also there, it ensures that the proponent who is proposing it has looked into all the aspects, possible aspects of locating it, the way it has been designed, and so on, in the proposal itself. So, these alternatives may not just be with the location, but they can be with the alternative scale.

So, some projects might be large or that same work can be done at a smaller scale with lesser impact, and

then one could also have alternative processes in whatever they are producing, they can have all the

alternatives in terms of layouts, and then also in what conditions they operate.

One can also look into like what will happen when no action is taken, meaning if we do not undertake the

project altogether, what kind of impact positive or negative it will have. So, most projects come it is because

of the development and create jobs and it also meets a lot of demand, but if it has an adverse negative impact

of a significant level, then we might not do it. So, further, in the process, we also develop the description of

the project or the development action, whichever we are going to take it.

We justify the purpose and rationale of the project and this particular stage is undertaken to establish an

understanding of its various characteristics, and characteristics of the project including what kind of stages

of development, location, and process will be involved. For example, if you are taking a highway activity,

then you might be looking into like the land acquisition part of it, the preparation part of it, and then the

functioning part of it.

So, all the different stages would be there. So, in the description part, you would be taking care of all these

stages, which will be involved, and what locations and alternatives are there. So, you would be describing all

this in your project description. The process also involves the preparation of environmental baseline study

results. So, this is one of the significant component and important components. You study this in the present

as well as in the future state of the environment, you establish what is the status of the environment, and

what is going to happen with the project coming in.

You also check this without the project. So, if we do not do anything, what will happen to the same

environment? So, all those baseline studies with and without projects are undertaken. We are going to look

at these in detail. When we study the methods part, we will see how these baseline studies are undertaken

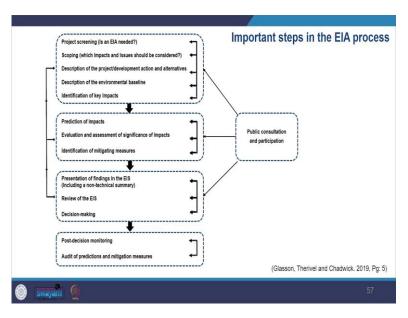
under different, different different, different theme areas in detail at that time.

So, this particular baseline study allows us to have a clear perspective of what kind of changes are predicted

due to the proposed activities, and what will happen in this case. So, after doing this, we look into the key

impacts are, what kind of key impacts will be there. So, we identify those key impacts.

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Then we also look at this significant environmental impact, it can be both adverse, it can be beneficial because we are doing it for development purposes. So, you will have a certain beneficiary, benefiting impact then you might also have an adverse impact. And these all like have to be taken for the detailed study. So, moving on to the next box, we see the next stage which is the predicted impact of the proposed activities.

So, after we identify the key impacts, we start the prediction of the impact like what will happen. So, here the purpose is to identify the magnitude. So, what we do here, is we identify the magnitude, we look at like how much the impact would be to what extent, it would be, and other characteristics that are very decisive to determine whether the project has to be taken or not. And we will also look into how we make those decisions in the later part of the lecture.

So, this process is important and the process can be regressive and technical because you might be using a lot of detailed technical methods to assess what kind of impact and what kind of nature of impact is happening, we shall be covering this aspect in detail while reviewing methods in EIA. So, based on the impact, like what impact we have identified, we evaluate and assess the significance.

So, you may pay attention to the word significance of the predicted impact. So, impacts could be, there can be many impacts, but you need to also check the significance of the predicted impact and review any adverse impact. So, significance-wise you would see how much is the impact, how large would be the impact, and to what extent the impact would be. So, based on that, you would review any adverse impact, any negative impact.

So, the evaluation and assessment of the significance, when we do this, allows us to focus on the main negative impact. So, we look at the main impacts, and then, based on that, we remove the others that do not have a significant impact, another level of refinement we do here. So, based on the identified adverse impact, the negative impact measures are identified and suggestions are made for mitigation.

So, like if this impact would happen, and then how are we going to mitigate it, and reduce the impact of this? So, when we mitigate, mitigation allows us to avoid or to reduce remedy, or compensate for any

significant adverse impact. So, in the entire process, we also ensure public consultation like you can see in the diagram, we ensure public consultation and participation.

By doing this, we ensure the quality of the process, which like allows the process to be comprehensive and complete and involves all the important aspects. So, when it is comprehensive, it involves all the important aspects from different stakeholders and it also helps in making meaningful assessments. So, it makes sense to all the stakeholders, and all the parties that are involved or will be affected by the proposed development.

So, after this, the findings of the environmental assessment are presented. So, the presentation you might think might be a very, very simple work, but this is a very vital step and all the good work involved in the EIA process can go to waste if the presentation is not carefully made. So, this stage also involves review. In this when the presentation is made, it also involves a review where a systematic appraisal is made about the quality of assessments.

So, whatever you have prepared based on the identified impact and the impact assessment and the significance then the entire review is done. And it helps to come to arrive at a decision. So, thereafter following all the facts placed for the decision making, the decision is taken by the relevant authorities or whoever is in power authority to decide for EIA, for allowing that project to happen in the Indian context it would be based on the screening and whether central government or state government would decide for the EIA report.

So, after this, as we see in the next box, the post-decision monitoring stage comes in which all the recordings of the findings, look at what impact they have identified. That you record all those. This stage helps in efficient project management. So, it helps you to undertake efficiently what has to be done. Thereafter you keep on, facilitating auditing of the mitigation measures.

So, in the process, you have said that you are going to mitigate this particular impact. By having certain measures, you will take care of all the impacts that will happen. And then auditing will take place to ensure that those measures are taken place, here the actual results are tested. So, whatever you have done impacts prediction in your case, here the results are tested. This helps to monitor and assess the quality of impact.

This is an important step for learning the EIA process in the long run as well. So, what works, what kind of methods work you can review them. So, now let us look at the final product of the EIA project. The final output product of EIA is a report. So, as a person, as a professional, and if you are undertaking an EIA assignment for you, the report would be the output that would be the product.

In some of the domains or the context, EIA is referred to as environmental statements, so in many places, you might read the environmental statement report and then you might also find the environmental impact assessment report. So, you might look at these terminologies you may come across all these terminologies for this same process. So, you may see these variations.

In the report, all the information is systematically analyzed, so you see the process. So, in the report, all this is systematically analyzed in the entire process of EIA. This information is analyzed organized and presented to the decision-makers and the reviewing body. So, in the report, there are a lot of things as per the process covered. There is a non-technical summary also, which I like because the report content could be a lot complex and might have a lot of technical details.

So, it is important that it also has a non-technical summary, this is an important element of the documents. And this would be read by many people. So, EIA can be like I said, it can be very complex and then summary can help to improve the communication with the various partners involved. So, even the stakeholders would be reading it and others so that would be helpful.

So, we will look here very briefly just to understand what we are really in the process of preparing, and at the later stage of the course, we will look at this in considerable detail with examples. So, for quick understanding following chapters are usually given, we see that you have introduction methods and key issues, which form the part, first part where you give the introduction to the project, tell what methodology you followed, and then you also summarize the key issues.

And then you also give the background to the proposed developments, like what is the preliminary study telling and why it has to be taken out what is the planning, what are the alternatives, and what kind of site has been selected for the purpose and then you describe the site and then you give the baseline condition and then you also give the details of the proposed development.

So, likewise, you also give the impact assessments and within that impact assessment who might be covering land use geology, hydrology, air quality, climate and climate change ecology, ecosystem, noise, and so on, and then also look into socio-economic or health transportation as per the scope of the EIA process. So, you might be providing all those things.

And then you would also be giving follow-up and management in your report where you will tell how the project impact will be monitored, and how things will be managed. So, environmental impact assessment practices vary from study to study and from country to country, and best practices are constantly evolving. So, we see that in early when study, in EIA practice in several countries advocated changes in the process and documentation.

And it gave lots of emphasis on the socio-economic dimension, public participation, and after the decision activity, so all this has been going on improving. And then the more recent reviews of operation also highlight the EC directors, also highlight that public participation is very important. So, that was about the report part, coming to the last segment of our session.

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Now we will look at the purpose of environmental impact assessments. So, the process and the output help in decision-making. So, when we do this, the main thing the main purpose is to allow us to make decisions, to arrive at an informed decision in a systematic manner. So, it is helping, so when you are preparing an EIA report, the key purposes allow somebody the decision maker to arrive at an informed and systematic decision making.

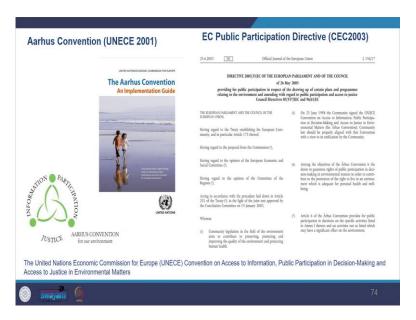
Then EIA process helps us to understand some of the trade-offs like what we are compromising with and what we are gaining. So, it helps you to understand those trade-offs. Because we understand these trade-offs, we can make rational and structured decisions. So, once those things are clear, we can make that decision. EIA also provides a platform for negotiation.

So, it is not practiced on the ground, but then it provides a platform for negotiation between the developer and stakeholders and even between the authorities which are involved, the planning authorities, which are involved here, or the approving authority. So, it allows the negotiation among them.

And because of this when there is facilitation of negotiation, negotiation is possible. Because of this, the balanced results can be achieved. So, EIA helps in also supporting the development action. So, we might think it is a hurdle, it is a checkpoint for the development actions, but it also helps and supports the development action because it reduces unforeseen conditions, reduces the trouble, the time, and the cost for the proponent of the project, EIA leads to environmentally sensitive development.

So, the whole idea we saw was the environmental status, and we talked about sustainable development. So, the whole idea about EIA is that it leads to environmentally sensitive development. So, people in the process are also conscious, that the approach which you adopt is also aligned with the environment. It also helps to build a positive image for the project developer. So, even the project developers who would systematically acknowledge this and address all of this provide them with a good image.

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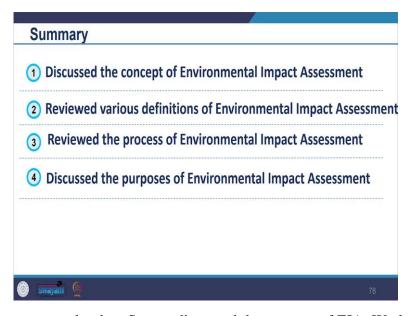


We also see that there is a convention that highlights the need for public participation, which emphasizes the need for public consultation. So, when people are involved, more and more acceptance comes. So, you see that the Aarhus convention by UNECE provides these directors as well as EC public participation directives are also there, which emphasizes the need for public consultation.

EIA can be a very useful vehicle for engaging with communities and stakeholders and helping those potentially affected by the proposed development. So, because of this, public participation, can help it will engage with the community and it can help and it will not only help the decision makers but also the community which is involved help them to make an informed decision and to be fully involved in the planning and development process. So, as we have already seen at the backdrop of it, EIA is seen as an instrument for sustainable development.

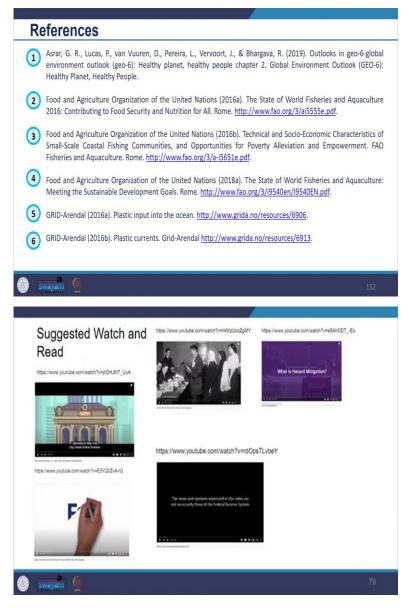
So, EIA came as an instrument for sustainable development. So, with a review of development activities, by activities, we will be able to attain sustainable development to a certain extent, you may reflect on the projects for which EIA is done and how much through this process we can address sustainable development. So, that was about the understanding of defining EIA and looking at its process and the key purpose of EIA.

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So, summarizing what we covered today. So, we discussed the concept of EIA. We looked at the definitions and then we looked at the process and the purpose of EIA.

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Here you can see the references. Our coverage has been limited to the scope of the subject. Additional resources to read and watch are provided to you and the list is given here.

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Please feel free to ask questions. Let us know about any concerns you have to share your opinions, experiences, and suggestions. So, that is all for today. Thank you.