Environmental Impact Assessment
Professor Harshit Sosan Larka
Department of Architecture and Planning
Indian Institute of Technology, Roorkee
Lecture 26
EIA Process- Starting and Initial Stage

Welcome to the course- Environmental Impact Assessment. So, we are going to now start with the EIA process segment and in these lectures, we will see a logical step-by-step approach, which is followed for the EIA process. So, if you remember we had like previously seen in brief, what is the EIA process like? So, we are going to look into details and this week on the EIA process part. So, there can be many ways of doing EIA and all these ways vary with the domain and context. So, there might be variations, and not everybody would take all the steps, not everything would be followed in all the countries.

So, we also saw that there are a lot of variations and legislation as well as standards as per the context, as per the countries. So, similar way you will also see that the processes also vary. So, we will look at a very common practice of the EIA process. So, it might vary as per your country. So, you read it, and you also refer to your country's process. So, while looking at the EIA process, you may keep in mind that, EIA processes, are not necessarily linear one step at a time, but they can be cyclic also. So, you move forward and then you come back and then you have a feedback system and then you again review things and move forward so it can be a cyclic system.

So, in this session, we will look at the initial stage of the EIA process like we had seen previously, the 4 segments of it. So, today, we are going to look at the first segments very first segments of your process here. In this segment, we will look at whether the project has to undergo EIA or not and if the EIA has to be taken what should be covered and the EIA.

So, in the initial stage in many of the contexts, alternatives are also considered. So, not only just screening scoping but alternatives are also considered. And then we also see that the baseline studies are undertaken and then initial impact identifications are also done like because of this project, the kind of project is the likely impact that might happen because of this particular proposed project.

So, this initial stage is very important. It is an early stage and it is an important stage. It reduces a lot of delays at the later part of the project and it brings a lot of clarity. So, this is an important stage. So, today we are going to look at the initial stage and how this has to be taken care of.

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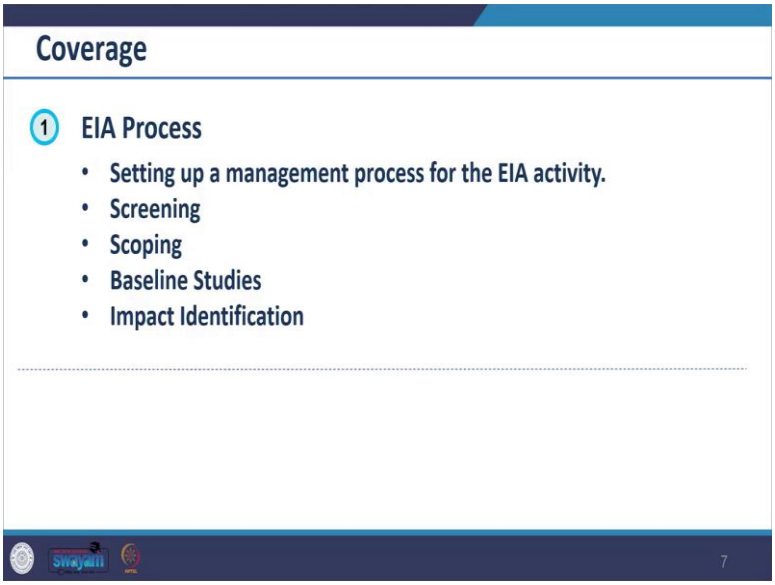

So, accordingly, our coverage would include that, in the process. We will look at the initial stage of the EIA process where we will look at the various we look at the aspect of management, we will look at the screening process, we will look at the scoping process and the baseline study, and then the initial impact identification. So, we are going to look at the first box of the diagram which we saw.

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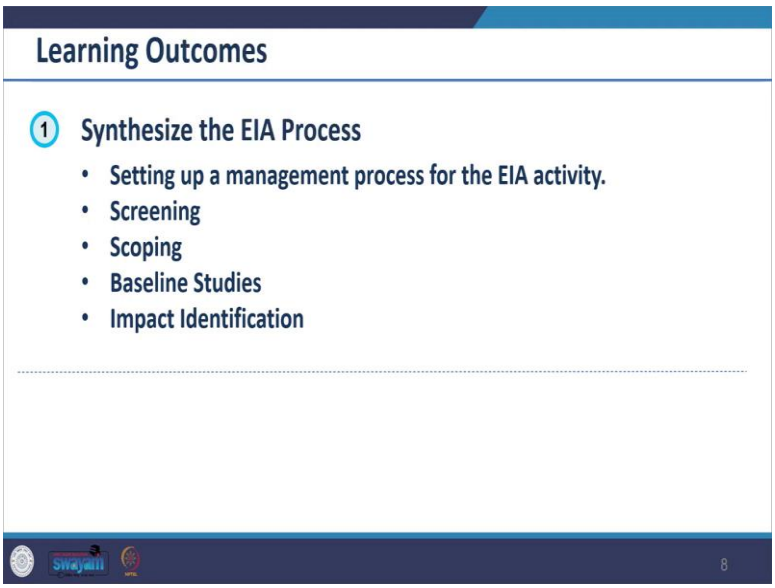

So, according to the learning outcome, the expected learning outcome is that, after completion of this session, you should be able to synthesize the EIA process, you should be able to plan and organize your work or like understand what kind of process will take place or organize your own EIA process here. So, you should be able to synthesize all that, and then you should be able to discuss and explain all these aspects the management aspect, the stage of screening, scoping, and baseline studies, and impact identification after completion of this session.

So, looking at the management aspects of the EIA process, management is very important. So, like you are seeing, there are so many sectorial variations and then there are so many steps involved and it varies a lot from context to context and there are a lot of complex subjects which have to be dealt with here. So, the EIA

process needs considerable management because of all these kinds of ranges it has and then there can be conflicting or controversial impacts as well.

So, good management is a must for the EIA process. So, while managing EIA, you will be required to determine the EIA team. So, you might have to fix you have to fix the EIA team for undertaking the process and you may know that the EIA process requires an interdisciplinary team so, you might have to bring in people from different domains and disciplines to work together. This bringing into this reteams allows you to have a complete perspective on different issues that are involved with the project.

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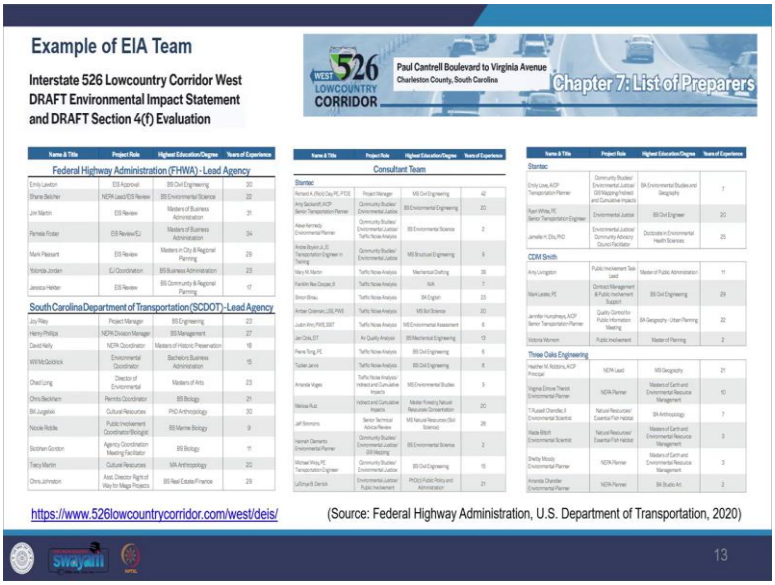

So, the team would mostly include a very standard format for the team would be team would mostly include proponents, the in-house team member the person on the team, who is proposing the project a lead external consultant to the project, and then also external sub-consultants and then you will also have individual specialist experts coming in and then the team size can vary it can be just a few people to like 12 people dozens of people working together.

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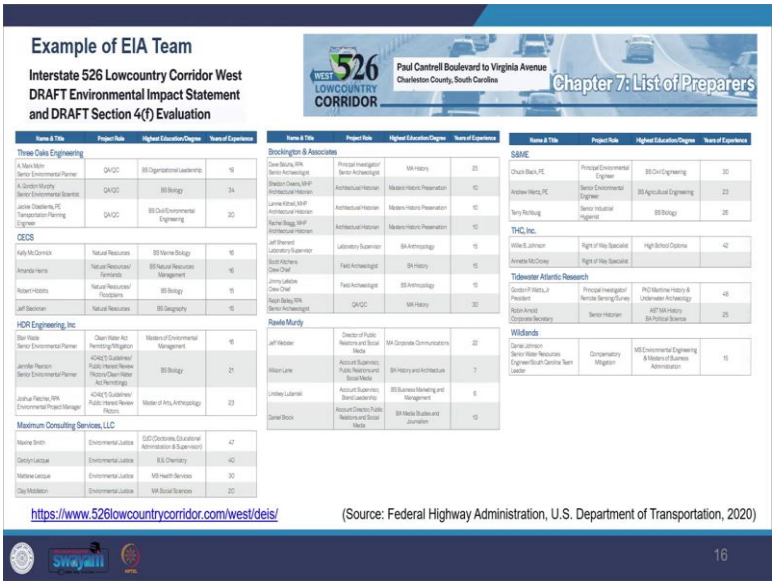

And then you also need to look at these skill sets for the team and then it should be that each member can undertake their task independently and then can communicate and work interdisciplinary manner as well. You might also require additional input from experts in certain domains like you might need people from landscape you might need people from archaeology, air quality traffic, and so on usually would finalize the team members after the scoping states. So, the team member would be done like once you know, what kind of impact assessment has to be considered what kind of detail has to be considered what has to be left out so based on that, you are going to do decide your team members.

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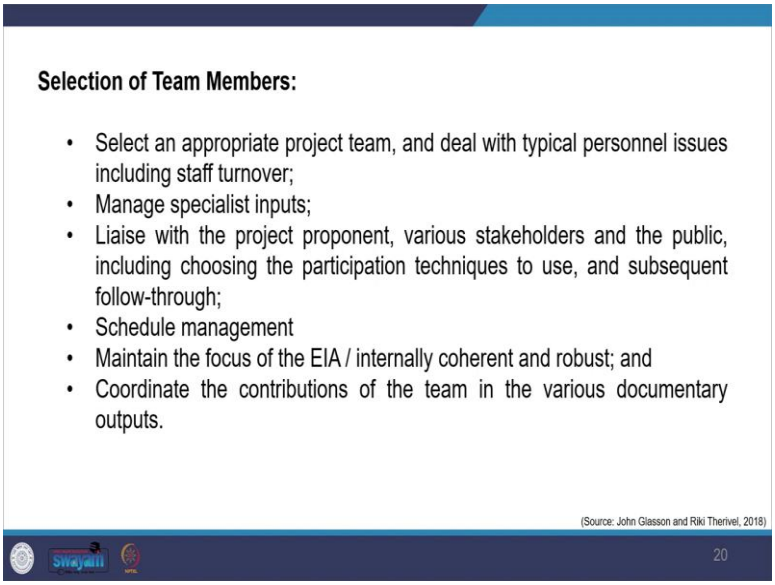

You can have core team members and then you can also have an associated team and then the team manager has a very important role to play. The team manager would handle like from the selection of the team members to managing these specialists to communicating with the project proponent communicating with the stakeholders public and then how the participation has to be handled a technique which would be used under-read and then would also look at the appropriate team and deal with typical personal issues as well.

And then also manage how the inputs will come specialist inputs will come and also look at this schedule that, whether the EIA is happening and as per the schedule and then one needs to also see that, the focus is maintained in the EIA process and then the entire report because you will have segments in which people will be working so how the report is dealt coherently and robustly. Then one needs to coordinate between the teams and also look at the documentary outputs that are required. So, this was about the management aspect, and then one also needs to know the different styles of the EIA process.

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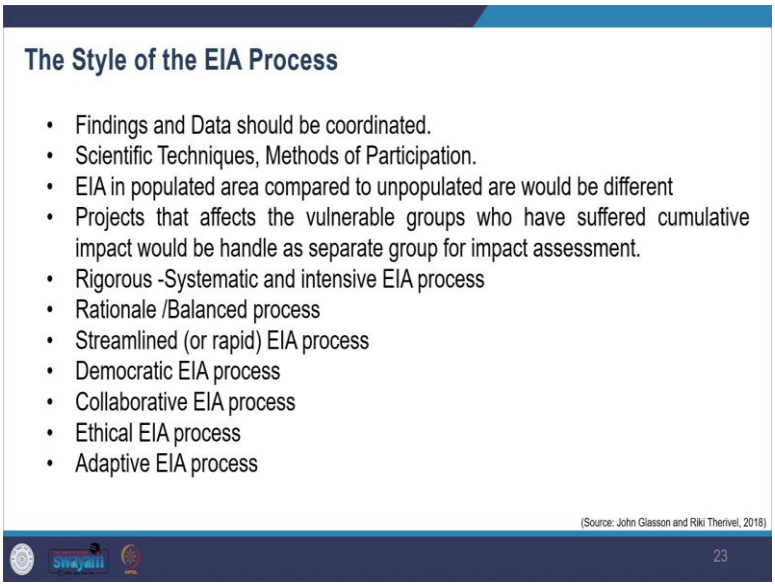

So, one needs to know, how the data would be handled and how the findings will be communicated. And you have and these things change with different projects, the nature of projects, and depending on what context you are dealing with. So, if you are dealing with a populated context, then you are EIA would be different and when you are dealing with a barren land or an unhabituated land, then your approach would be different. So, there are differences as per the textbooks give textbook given here, you find certain styles of year you report are very rigorous very, very intensive.

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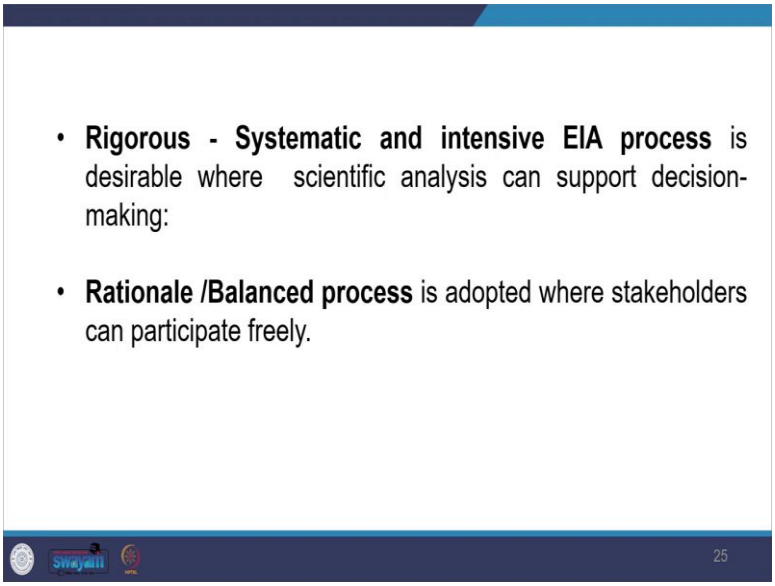

A systematic and intensive EIA process is desirable especially when you have to undertake scientific analysis to support the kind of decisions that are being made. And then you can also have rationale like a balanced process can be adopted, where you have stakeholders who are not participating under pressure or certain kinds of influence, but participating in a free manner.

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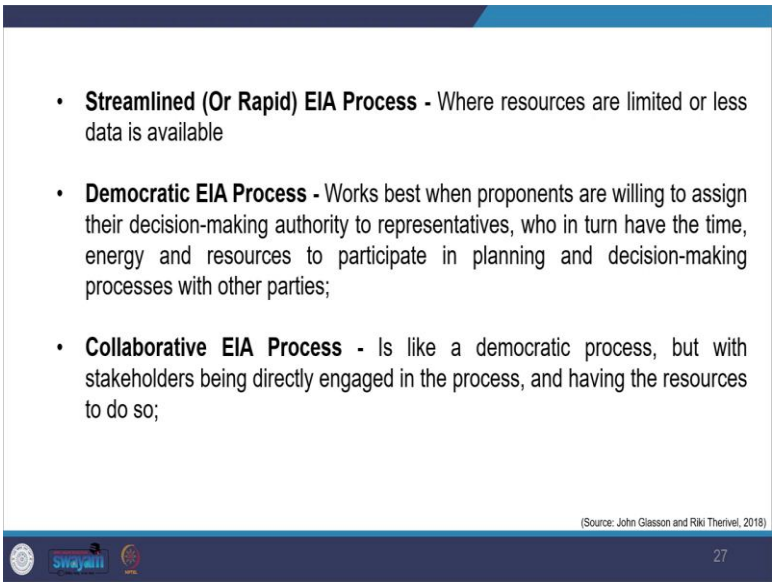

So, a balanced approach can be taken then you can also have a streamlined or rapid approach. So, where resources are limited and you have fewer data available, so, you cannot undertake a scientific approach and you have limited resources. So, you can have a rapid or a streamlined assessment, then you can also, the style which we see is the democratic EIA process and it is said to work best when the proponents, the project developers are willing to assign representatives for decision making authorities and so that, a person has like enough time and is free from all other kind of influences.

So, that, is the democratic process adopted, and then you can also have a Collaborative EIA process very similar to the democratic process, but with stakeholders being directly engaged in the process and having the resources to do so. So, they are not just being the participants, but they are part of the process itself.

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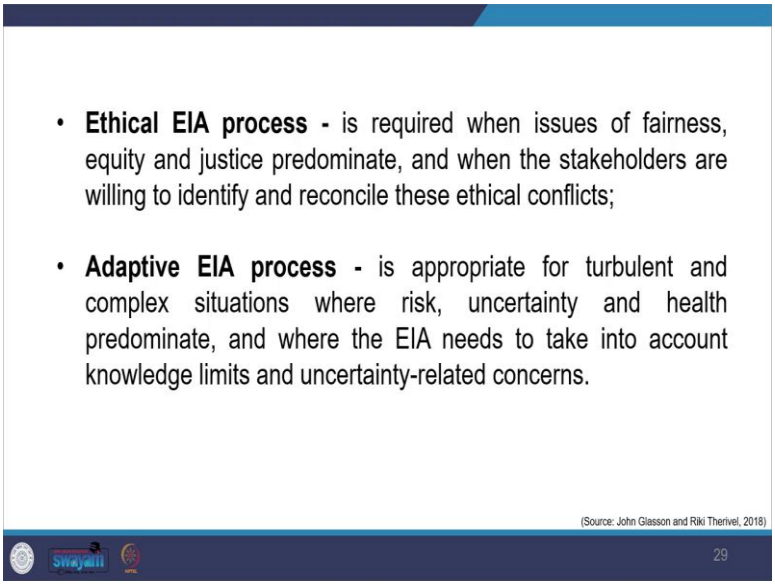

Then you also have the Ethical EIA process, where there are issues about equality, justice, and so on so, you have, then the ethical process can be also style, can be adopted. Then you have the Adaptive EIA process,

and it is appropriate when you have a disturbed or complex situation where risk uncertainty and health predominance are there. So, according to that, you will have an adaptive EIA process.

So, that was about different styles of the EIA process. So, EIA cost and resources also need to be seen. So, the EIA team and style will affect or will be influenced by the cost and the resources you have. So, the cost of the study is taken care of by the developer. So, whatever EIA is prepared, the proponent, the developer of the project takes care of it.

The cost of the review while the review is done is taken by the authority, whichever is the reviewing authority as per the legislation. And if you look at the cost of like everyone must be wondering what, as a learner like what kind of fees they would expect. So, the cost of carrying out EIA tends to range from several 1000s to several million dollars from 0.01 percent to 1 percent of the capital cost of the project.

So, it might range in percentage of the proposed project, and the cost of the capital cost of the project. And in certain cases where the problems are, there are a lot of problems and there is a problematic project and the cost might even exceed 1 percent, the cost of undertaking EIA. So, looking at the time aspect of how much time an EIA report takes, it takes between 6 months to 18 months to carry out the EIA part. And it is said that, if you have a good initial stage of scoping and other things, it reduces your later time consumption. And so, that, is all about the management aspect. So, now looking at the project screening part.

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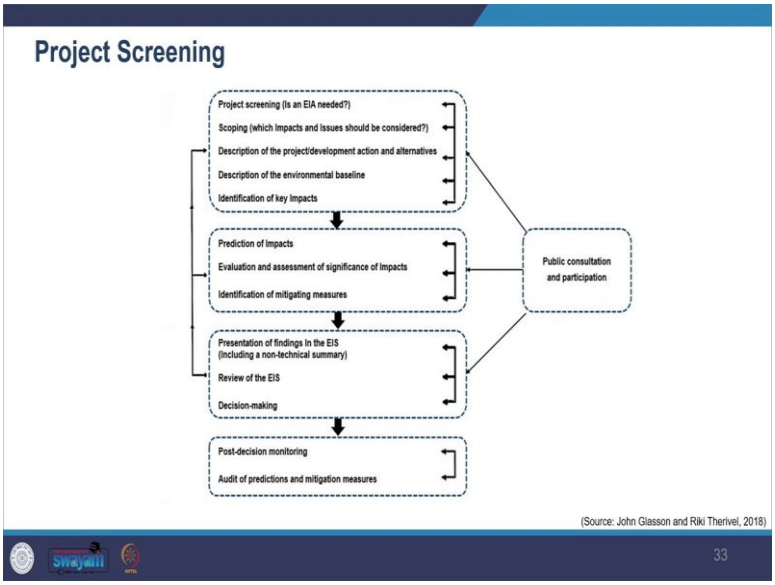

So, now we will move to another segment. So, that was about the management aspects. So, we will look at the screening part. So, looking at the first box here project screening, so here we decide whether the EIA is needed or not. So, at the screening stage, we focus on those projects which have known substantial impact.

So, we do not take into consideration the projects of which we know that they do not have substantial impact, we consider only those projects that have known substantial impact, or in some cases they also consider projects about whose impact we are unaware of. So, it is not known. So, you might like to test it or like to check those. So, the projects that have an insignificant impact are screened out and are allowed to

proceed to the normal planning permission so they can go into the normal process. So, they need not worry about preparing the EIA statement and so on.

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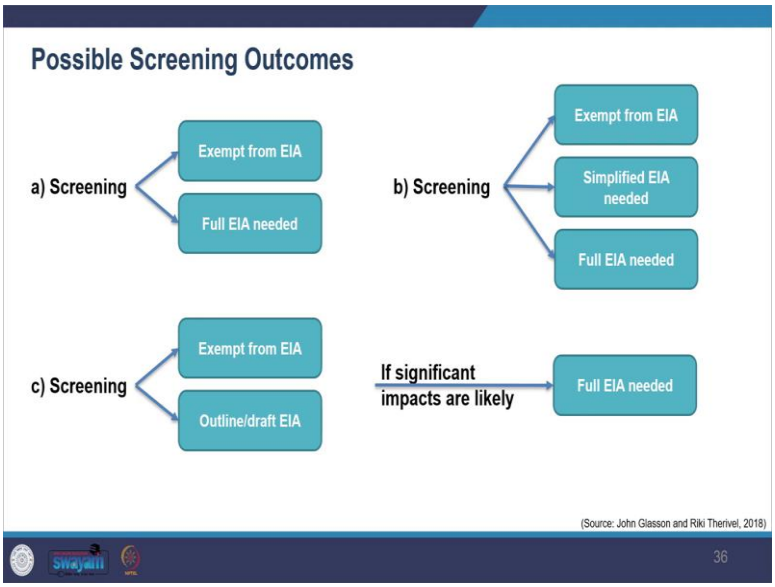

So, we see that in some countries, the screening stage itself as per their legislation or the process procedural requirement, they ask for like fully EIA the level of screening itself or they can just ask for the outline draft of EIA. So, in this EIA, also we see 2 main approaches for screening. The use of thresholds where they have threshold values, placing projects in categories, and setting thresholds for each project type.

So, these may relate for example to project scale you can have a project scale of a certain square meter and you can have anticipated impact in whatever quantities you take and where project locations are. So, based on the scale of the project nature of the project nature of the impact, and where it is located, you have certain threshold rates that are given.

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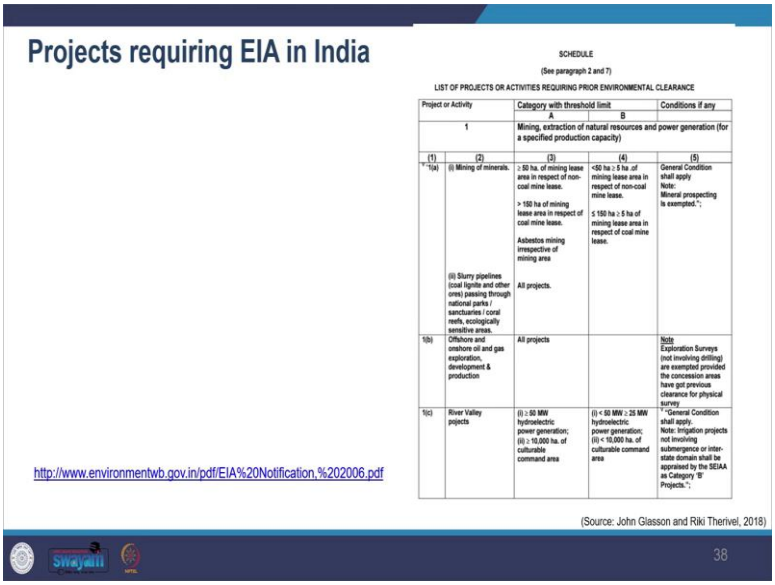

So, as we do in India we have a list where we have Categories A and B and you can see, how each range of projects is given and the scale is also given, and for which projects we might do the screening. So, all those are given.

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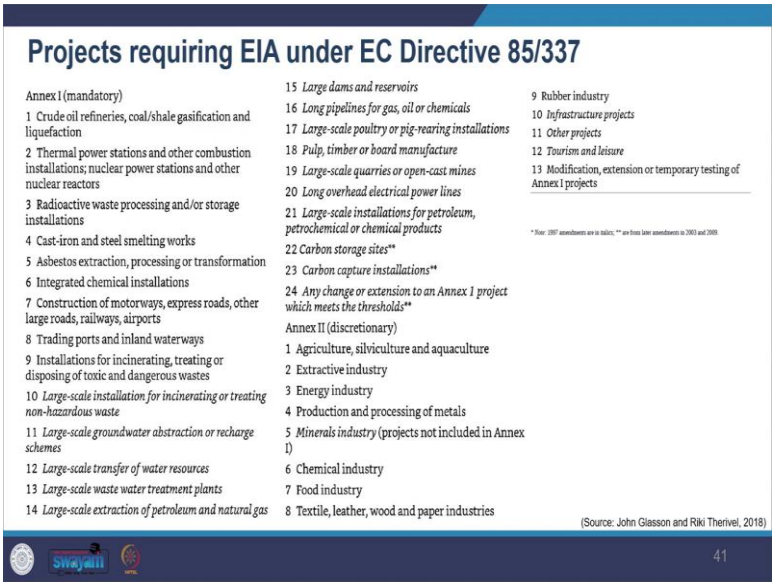

Likewise, you can see European Commission EIA directive provides a list of projects in their schedule that, allow that, always require full assessment, because of their scale and kind of environmental impact. So, those ranges you can see here what all have been given.

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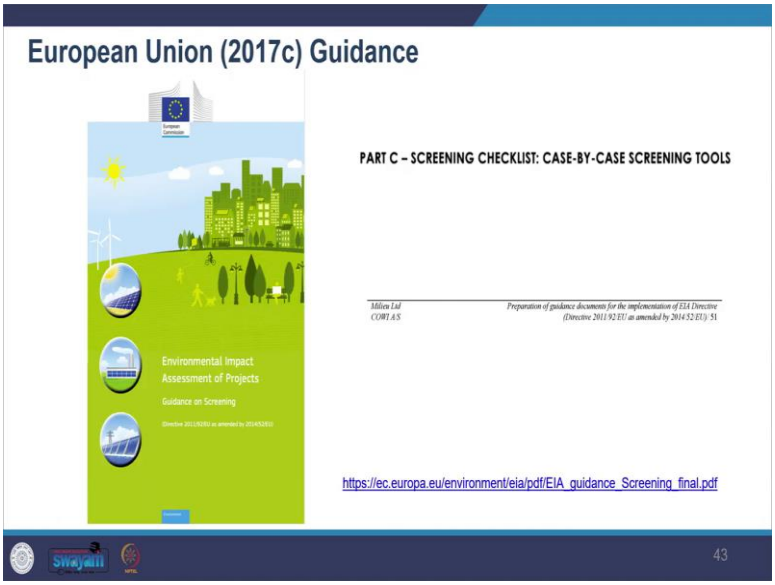

You may also see that countries also do case-by-case screening, so case-by-case screening involves where, countries do case-by-case screening, there, they evolve, evaluate the characteristics of the project, and submit for screening against checklists of the ground, as per the criteria. So, you see that the European Union has published guidance to help how to undertake a case-by-case screening process.

So, you can also look at those guidelines and then many times the screening approach, what approach you will take is also determined by the legislation. So, for example, you can see a California Environmental Quality Act has specified in their act itself like, if there is substantial evidence in light of the whole record before the lead agency that, a project may have a significant effect on the environment.

So, such kinds of writings are given there. So, according to that, it is required by the legislation to undertake the screening and what kind of approach they would adopt. So, this is an example of a case-by-case approach. So, you see that, you have threshold level and then case by case threshold level list level, and then you have case by case. So, both methods have advantages and limitations, we also find a hybrid approach. So, for example, the indicative threshold is used in combination with a flexible case-by-case approach.

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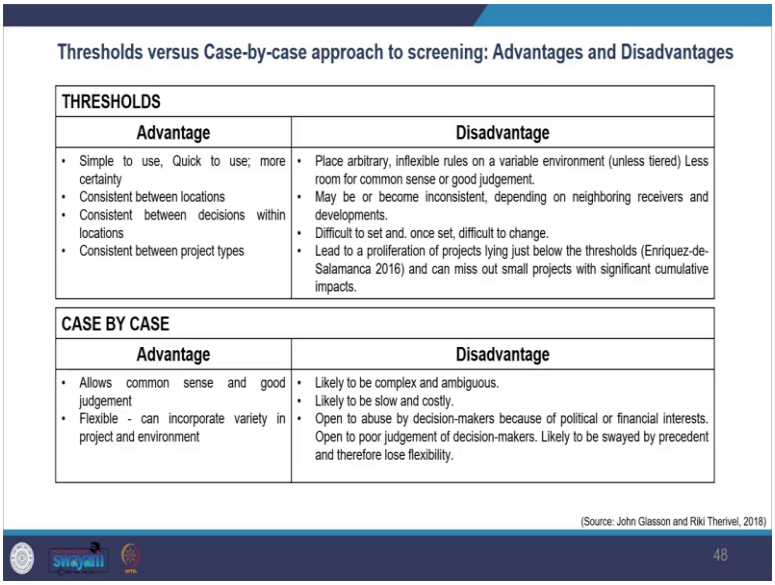

So, just quickly reviewing what are the advantages and disadvantages. So, we look at the threshold type. So, the advantage of this is that it is very simple to use, and then it saves a lot of time and it also saves you from a lot of uncertainty and then it is consistent between locations, consistent between decisions, and consistent between project types.

So, these are very good advantages of adopting the threshold approach for screen purposes, but, we also see there are certain disadvantages like placing arbitrary inflexible rules on variables, like what other aspects might be and it might become inconsistent depending on the receivers' capacity, difficult to set an onset difficult to change the list and, it also leads to proliferation of the project lying just below the threshold. So, like a lot of projects, which might come, which may just touch the border case and would escape the entire EIA process.

So, now we look at the advantages of case by case screening approach. So, it allows common sense and good judgment. So, it allows you to check all the things, all the aspects of a project and then it is flexible and can incorporate variety in the project and environments, it allows you to look at the newer project or a project that might otherwise escape the list.

But the disadvantage of this is that it is likely to be very complex and ambiguous which might lead to a lot of legal complications and then likely to be slow as well as costly and even this can be abused by the decision makers because of the political or financial interest involved. So, it might be open to poor judgment of the decision makers and there can be variations in the decisions as well. So, there are disadvantages to this.

So, we also see inclusion lists likewise you also have an exclusion list where you have like what kind of projects do not it is known that these projects do not have significant environmental impacts. So, they can be added to the exclusion list.

So, that was about the screening process and you see that the screening process has its benefit. So, once the screening is done, it allows the project to improve on its own so, it is also said to be self-regulating. So, when people see the screening option, then they might modify the scale of it, might modify the nature of it, or might modify the location of it, so, it is said to be self-regulating.

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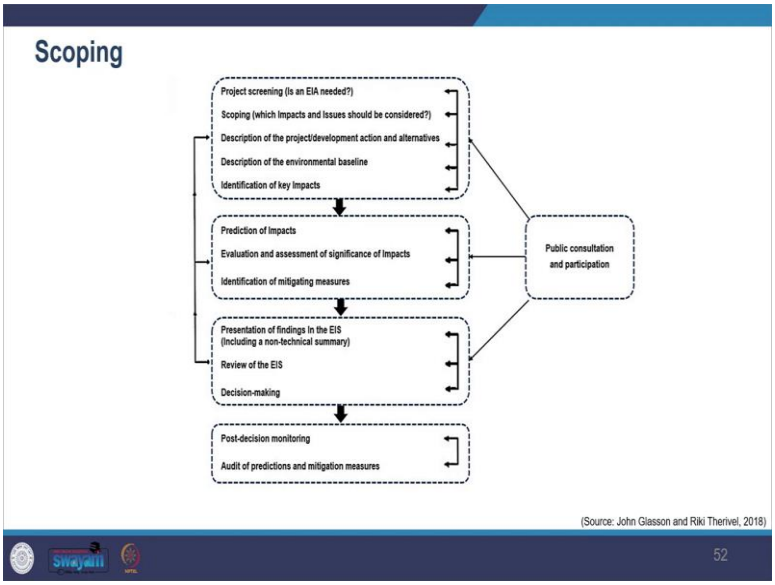

Now, moving on, we will look at the second point that, is concerned with the process, which is the scoping part. So, at the scoping stage, you decide which impacts and issues are to be considered. So, what all has to be included, what impact you will study which impacts you will not study depending on the nature of the project it is said to be very effective in the long run because it allows you to save time and allows you to use your resources very efficiently if you decide, and if you plan it out well.

So, the initial scoping of possible impacts may identify those impacts thought to be potentially significant. So, you will be able to identify those and then in this stage, you will decide what kind of further, in-depth studies have to be undertaken. And you would eliminate what kind of things are not required. So, unnecessary assessment or data collection would not be done undertaken in this and you will have the refined outcome here.

And if you see the scoping is generally carried out through discussions between the developers and then also the local planning authority and then the other relevant agencies and the public and it is often the first stage where you start the negotiation and consultation process. This is also considered an important step in EIA because it allows you to make the best use of your resources and allocate resources for identifying the key aspects of the environment here.

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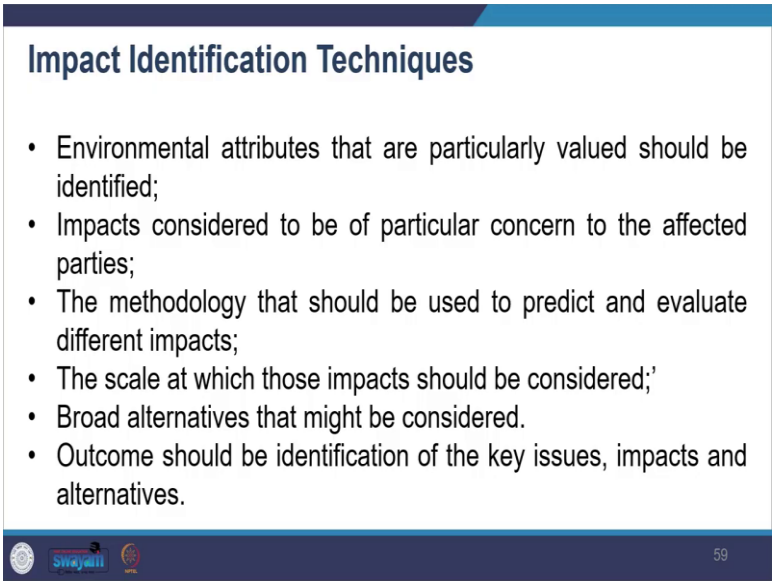

So, you can also have impact identification techniques used for scoping purposes and at this stage environmental attributes that, are particularly valued should be identified. So, when you undertake scoping, you need to ensure that, there might be environmental attributes that might be of importance to the people who are being affected or in the range of the project.

And then all the affected parties if they have any particular concerns, those things should be included here. And then you should also take care of the methodology which you will be using here and then the scale at which those impacts should be considered. So, where are they, what radius you will be taking, and what boundaries you will be taking for impact assessments?

So, how you will designate your study area, and then, what kind, and then we would also look at what kind of alternatives you will look at. So, how many alternatives you look at, and what kind of possible alternatives you should look at? And then the outcome of this scoping should help you to identify key issues that have to be covered and then also identify impacts and impacts of the alternatives and then you should be able to have an explanation of why other issues are not considered significantly.

So, why you have taken certain sets of issues, and why you have not taken other sets of issues? So, you need to have an explanation for the decisions you make and you also need to give justification for the key impacts which you have identified and then justification for, what period you will take and what special boundaries you will take. So, all these will be identified at this stage.

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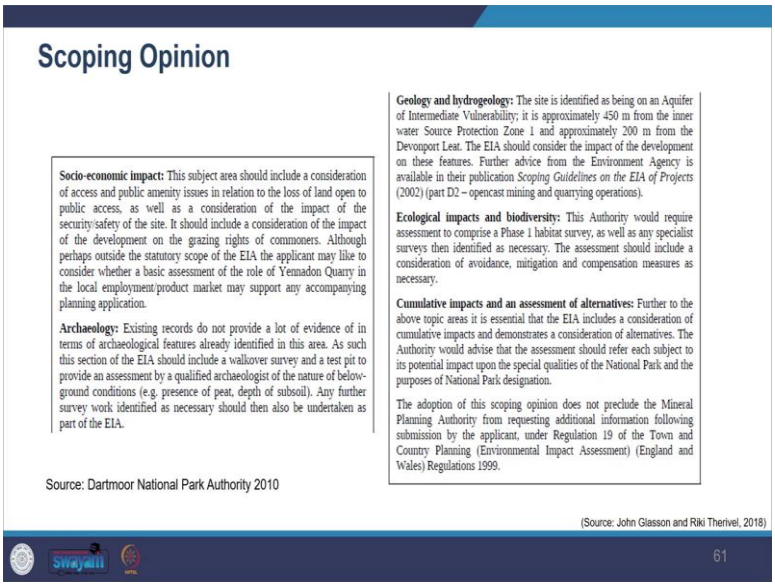

So, this is the example of one of these briefs of this scoping report so you can see how the socio-economic impacts what they are going to undertake in their archaeology and what they are going to undertake in geology and hydrology. What they will cover ecological impact and biodiversity cumulative impact and assessment of alternatives. So, what are all things or what areas they would consider and which they would not consider?

So, you see that, scoping is an important step however, it is not legally required in like, you can see it is not legally required in Europe, but undertaking that, improves the EIA outcomes. So, your results are better whenever you take and some countries like Canada and Netherlands have a formal scoping stage. So, they have it by legislation, in which the developers agree with the competent authority to conduct the EIA.

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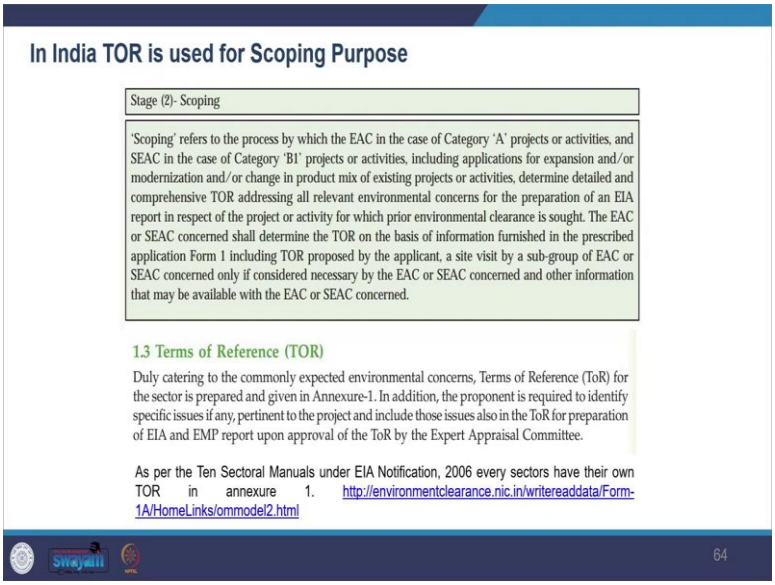

And we see, in India, we have terms of reference TOR as used for scoping purposes. So, either that, TOR is is provided by the ministry or the usual TOR also available for reference. So, case by case TOR is either

provided or the declared TOR is used for EIA purposes. So, you can see here you have TOR for scoping purposes.

So, how this has been given for each you can see that, it has been given for each sector, 10 sector manual you can see here that, it has been given sector wise. Terms of Reference are usually Terms of Reference are given for each sector in our country. So, how to undertake what area is to be covered, what area is not to be covered for that, particular sector is given in the manual. Then further, you find the European Union has published a detailed scoping checklist you also see environmental agencies have developed a guidance for particular types of projects. So, that was about the scoping parts. Now, you look at the can how do we look at the alternatives?

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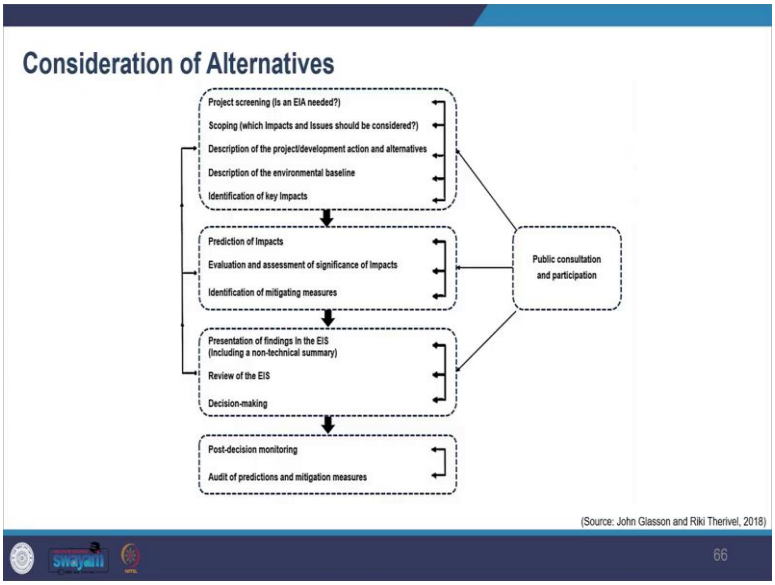

So, how many alternatives will be considered what has to be considered? So, that can be like you can consider many alternatives. So, what is enough, and what kind of how do you choose to discuss and evaluate more? So, the US Council for Environmental Quality calls the discussion of alternatives a very important part of the environmental impact statement. So, in EIA you look at various alternatives, to see that, whatever decisions are made are made at their best, it is not guaranteed, and it is not assured that, the selected alternative is the best, but it gives you the optimum optimized approach to the particular problem and problem at hand.

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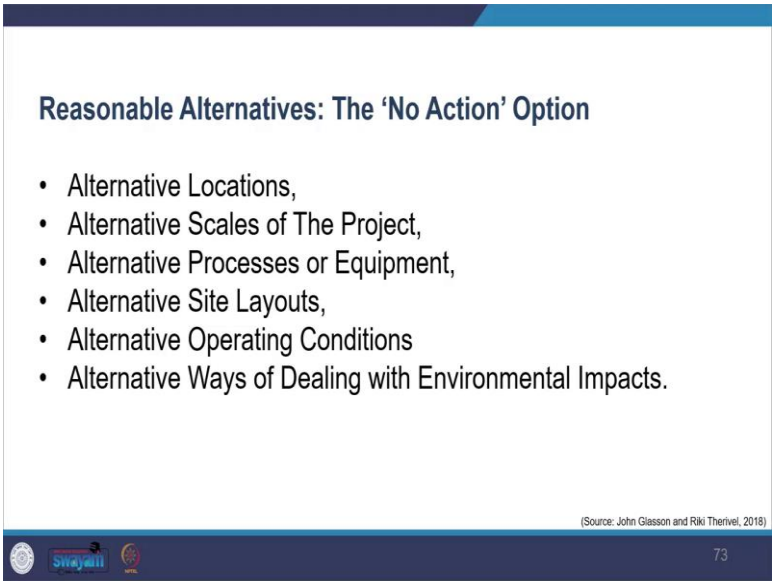

So, you need to identify reasonable alternatives, so, many decisions are to be made based on scale type location, and details. So, and so, the EIA team works to ensure the inclusion of environmental criteria for alternatives and this consideration for alternatives starts at a very initial stage even before EIA it starts at the very initial stage and but then, starts mostly with the economic aspects of the functioning aspect of it.

So, a number of the broad types of alternatives are considered by looking at the alternatives, so, you have one option which is no action option. So, you look at that, if nothing is done if no development project comes so, that is the no action option what is happening then you have an alternative location, then you have the alternative scale of the project or you can have alternative processor equipment's, then you can have alternative site layouts and alternative operating conditions and alternative ways of dealing with the environmental impact.

So, you can see, what happens with or without a project or if you see an alternative like if the project is done in this location compared to the other location or if you see that, the project is done with a smaller size if he can serve the same purpose with a smaller size with lesser impact then what will happen and then what if you change the process or you have a better design or you change the layout of the project or you change the conditions under which it works, and so, this way, these are the general broad types of alternatives which are considered. So, you see that no action or business-as-usual option is sometimes considered to be mandatory and when this is taken then it also justifies that, whatever project is been undertaken is a required project and all the alternatives have been considered for that,

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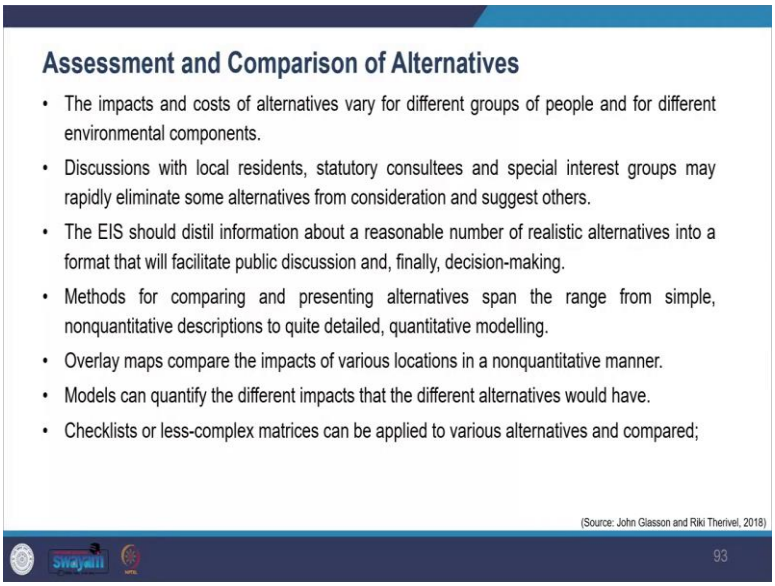

So, that, is about the alternatives and now, we look at the comparison of alternatives, how do we compare and assess the alternatives. So, the impact and cost of alternatives also vary with different groups of people and different environmental components. And so, when you discuss with, when you have a consultative process, so, many of the alternatives will go out from the process itself they will not be included.

So, that would save you time. So, you will you can have the local perspective on which alternatives have to be considered and it is quite like you may not expect that, whichever alternative comes up will be acceptable by all the parties here. So, that usually does not happen. You need to have a reasonable number of realistic alternatives to undertake because it is intensive work and that, should support your decision-making.

So, there are methods for under-reviewing your alternatives and comparing your alternatives, including methods for comparing and presenting alternatives, they are they can be non-quality, quantitative, they can be descriptive, then can have quantitative modeling. So, you can have numbers in all the alternatives and you can quantitatively explain which one is better.

And then you can also have overlay maps where you can undertake the analysis and then show which one where you have better results. Then you can also have models that can quantify the different impacts that, different alternatives would have. So, you can also use checklists or less complex metrics can be used to communicate this.

So, using all these techniques you can compare. And then you would also be required to explain why you chose one alternative over the other. So, in this section of your report, you have to justify all your alternatives, why certain alternatives have been taken, and why certain alternatives have been not taken. And you may think about a range of projects like a mining project has to be closer to the resource and then the highway project has to depend a lot on the engineering details of it. So, there will be a lot of limitations on how many alternatives they can try.

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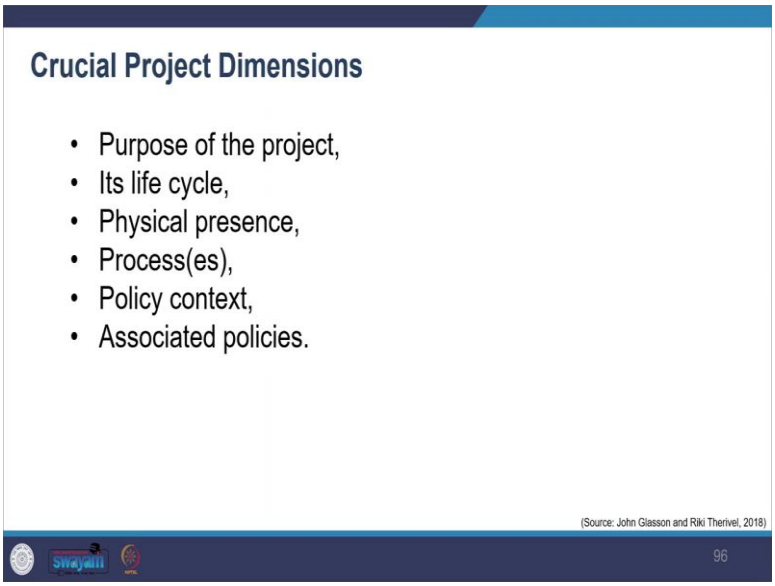

So, now moving on, we will see project development actions and then the project dimensions in a report you are required to give the project dimensions in detail. So, a project has many dimensions for what the project is been done, what will be the life cycle of the project 60 or 70 years 100 years or so, and then how what will be the physical presence of the project, will be the process involved, what will be the under which policy context which has been done, and what are the related policies with that, project.

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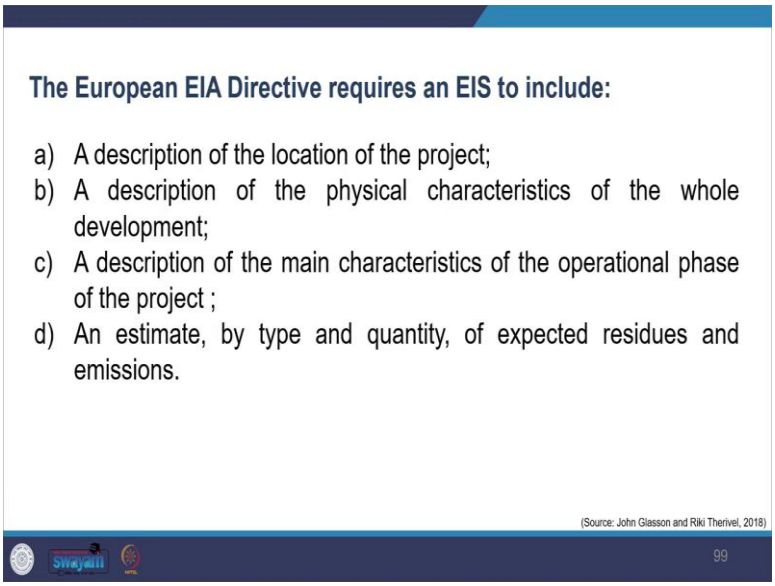

So, there are directives and legislation, that tell what kind of descriptions have to be given for a particular project. So, the European EIA directive gives like, gives guidance on like, there should be a description of the location there should be a description of the physical characteristics, there should be a description of the main characteristic of the operational phase of the project. Then there should be estimates by type and quantity of expected residues and what kind of waste and emissions will be generated from the project.

So, that, all has to be given in the description of the project. In the Indian context, you have all these secretarial manuals, which give you details on how you have to provide the project descriptions. So, you

show various physical characteristics. Then you show socio-economic characteristics, which may include labor requirements, provision of other housing, direct services, flow of expenditure, and so on. And then you also need to look at how you are going to present this data in a very systematic manner and what information you will be able to gather. that, gather, and then communicate.

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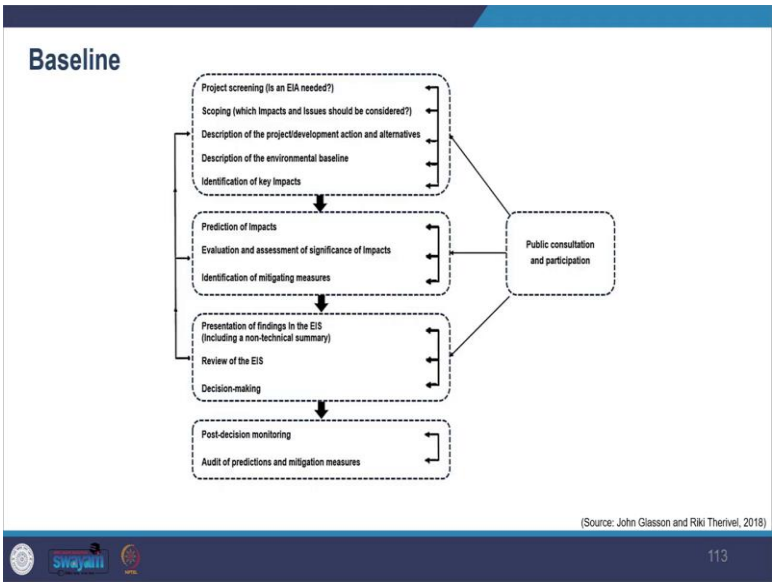

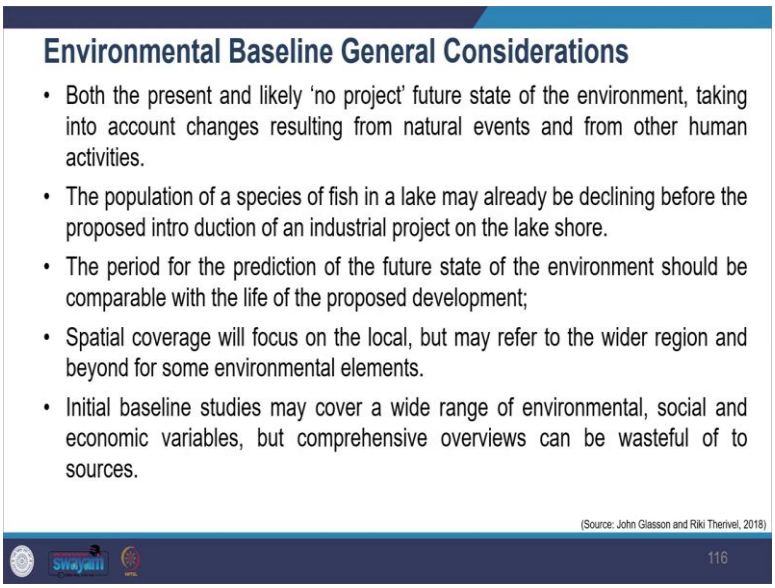

Now, moving on to the baseline study. So, here in this particular segment, you have to establish an environmental baseline. So, you have general consideration and the baseline. So, here you can use both the present and likely no project future scenario also, so, you have to give the current environmental status currently and what will happen in the future with project or no project.

So, those kinds of information have to be given and you need to look like while you give that information like. for example, it is quite possible that, without your project also the environmental quality is degrading. So, you can give like what is the existing happening like what is happening with the current, what is the forestation status, what is the fish status in the lake, what is the water quality in the local environment, and so on. So, that can be given.

So, your initial study may cover a wide range of environmental, social, and economic variables. So, all those have to be taken care of. And you may also refer to all the sectoral manuals given by the MOEFCC. So, you can see that, what kind of baseline studies have to be covered. So,

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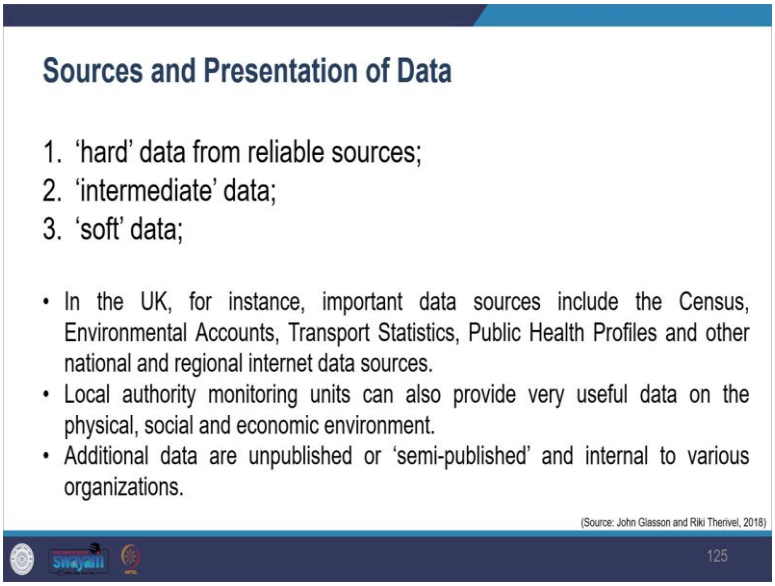

When you would undertake this baseline study, you have a certain source of data. So, you have like secondary data or hard data which can be taken from the agencies and then you have soft data which you can do by the primary service and all. So, hard data is collected from secondary sources, and this should be much more reliable and easy, easy to communicate.

So, you have loads of information sources, like you can use sensors, you can have other environmental accounts, transport, statistics, public health profiles, all these can be used. And then the local authority may also provide a lot of information on this. And as a professional, you might have to present this data in a variety of ways.

So, you can have like all these range of data that, can be presented. Usually, you will see that, maps are used, which are not necessary, but maps are very well for communication. So, you can also use GIS, and Geographic Information System maps to communicate your baseline environmental status, and what would happen with or without the project. So, that was about the baseline, and we are going to in the impact section.

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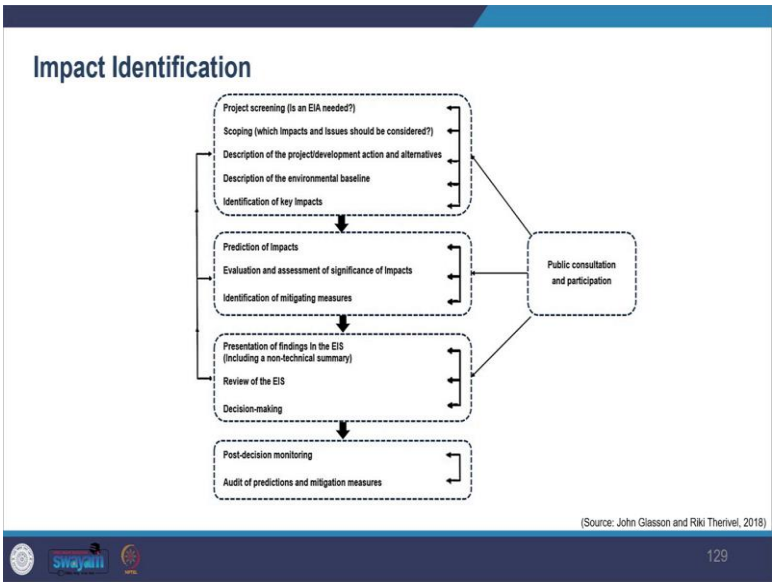

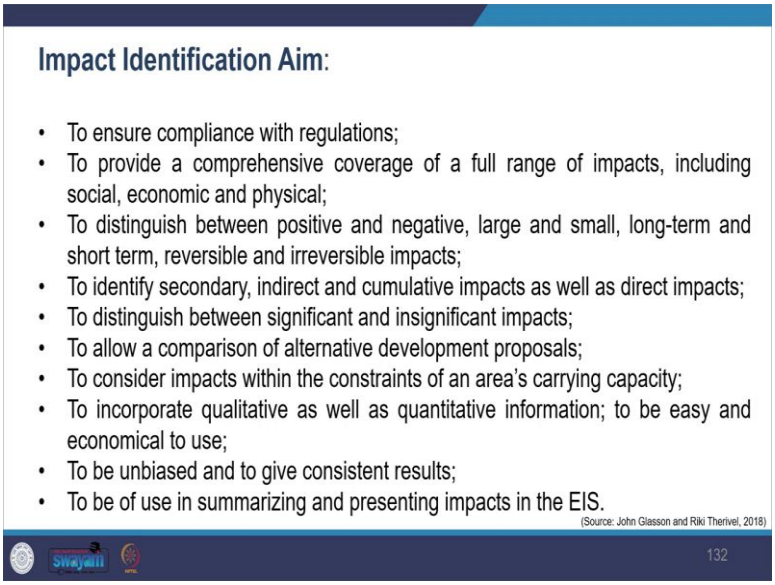

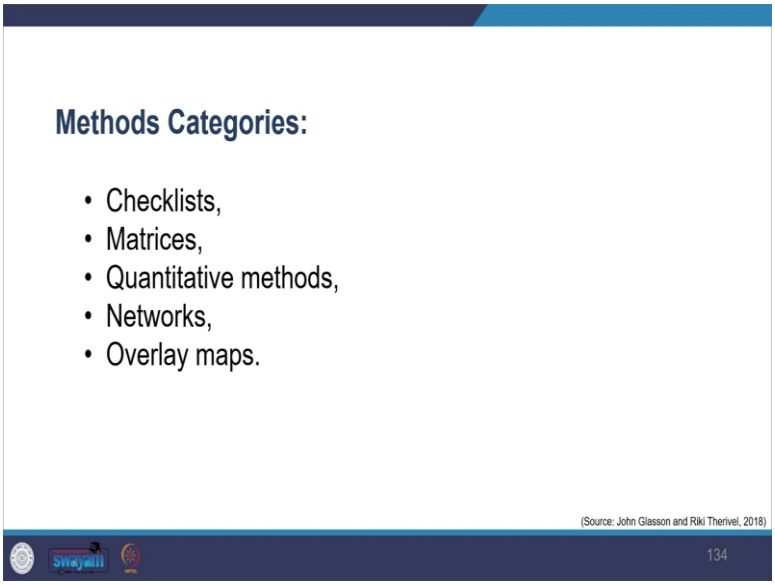

We are going to look at how to undertake those baseline studies. So, now looking at the impact identification. So, impact identification is like in the initial stage, you find out what kind of impact would happen in the project. So, you look at that, aspect. And then there are and with that, basic impact you would

like you would try to find out what is the positive impact and what is the negative impact and there are methods which are available to check the impact such as like the checklist methods, matrices, method quality, quantitative methods, network overlay maps, so you can hear just look at these like, we will cover them in detail later.

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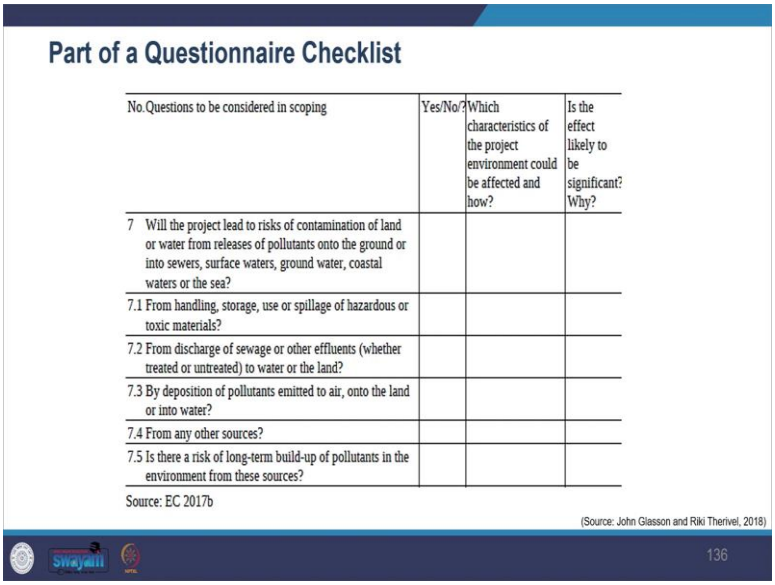

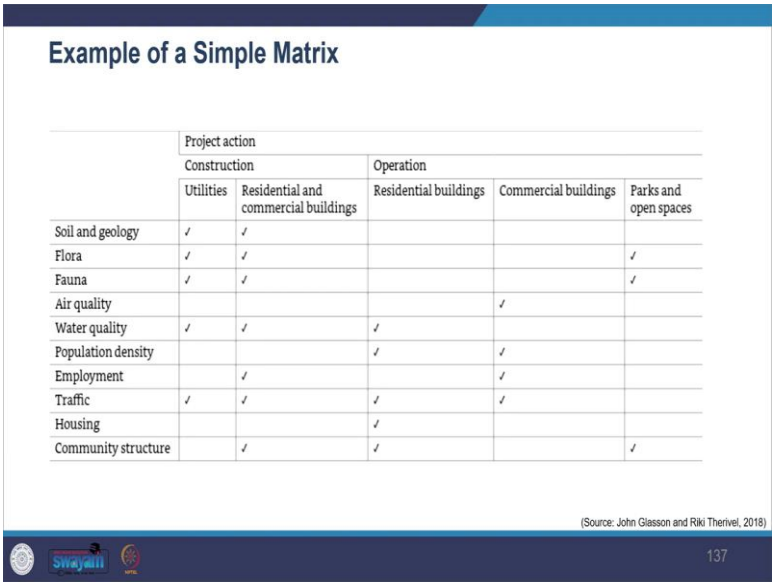

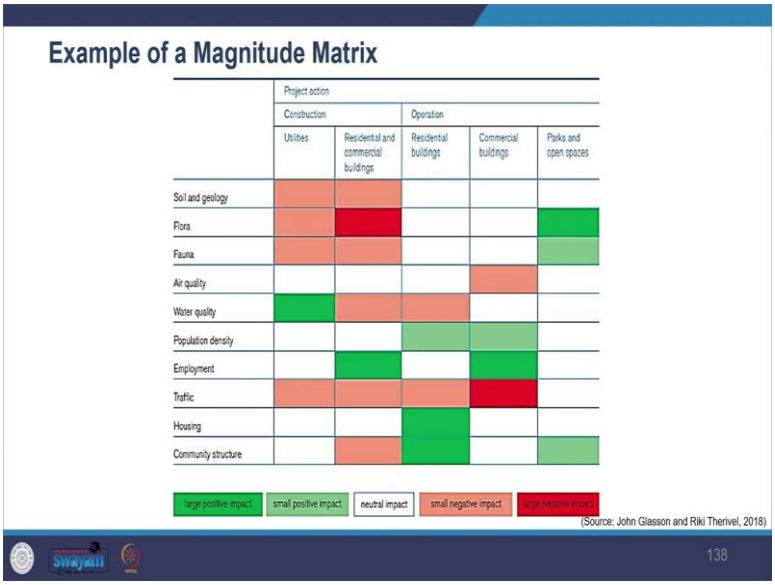

But then they can be simple checklists, which help you to understand what kind of like to just to see whether those impacts will happen or not. And then you have matrices to matrix to see and to communicate what kind of impact you are going to see at the initial stage.

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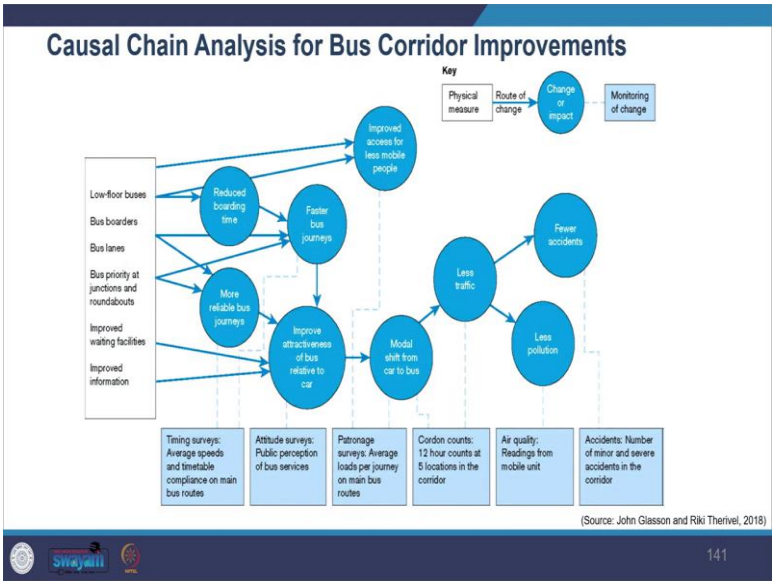

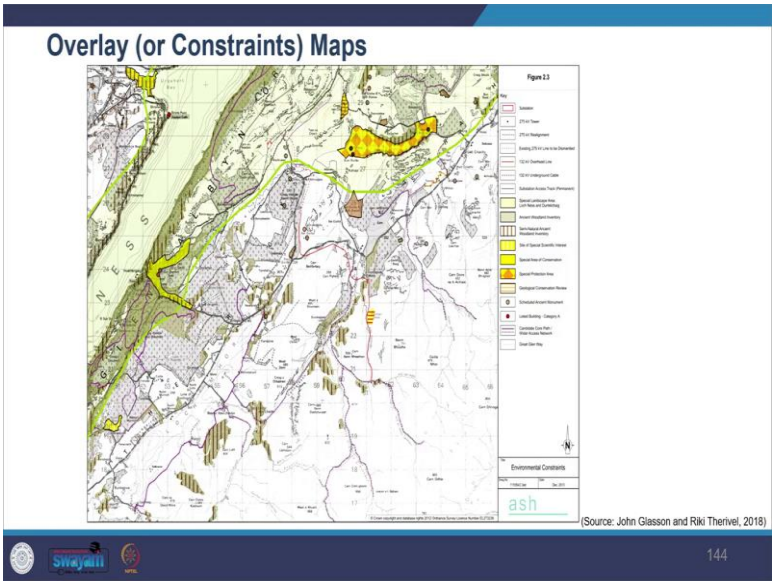

Then you also have network and causal change and chain analysis which can be undertaken, you can look at the diagram here. And then you can have overlay maps over the GIS. So, you can see the maps here. So, you need to carefully choose different methods and you can use a combination of methods for impact assessments.

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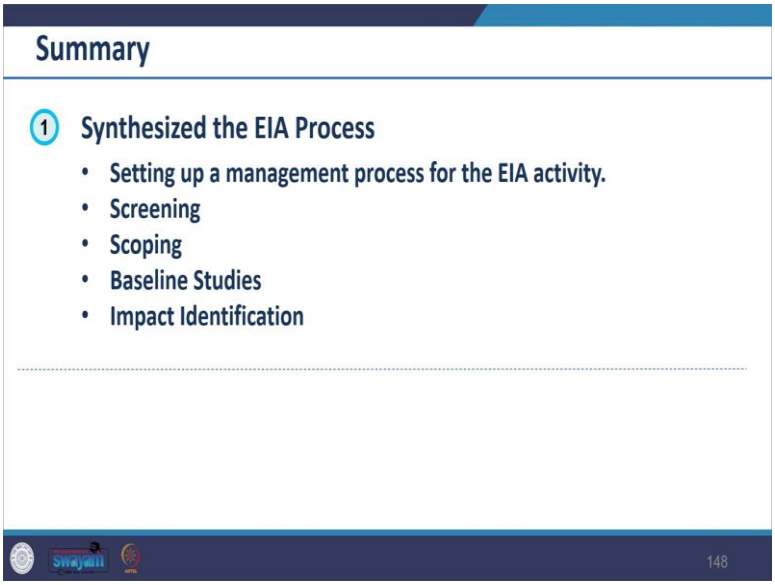

So, to summarize, that is all for this session. To, summarize, in this session, we looked at the initial stage of the EIA process and we looked at the management aspect and then we looked at the screening aspects how we took care of the scoping and baseline studies, and then eventually how the impact identification was done. So, that was the coverage of this particular session.

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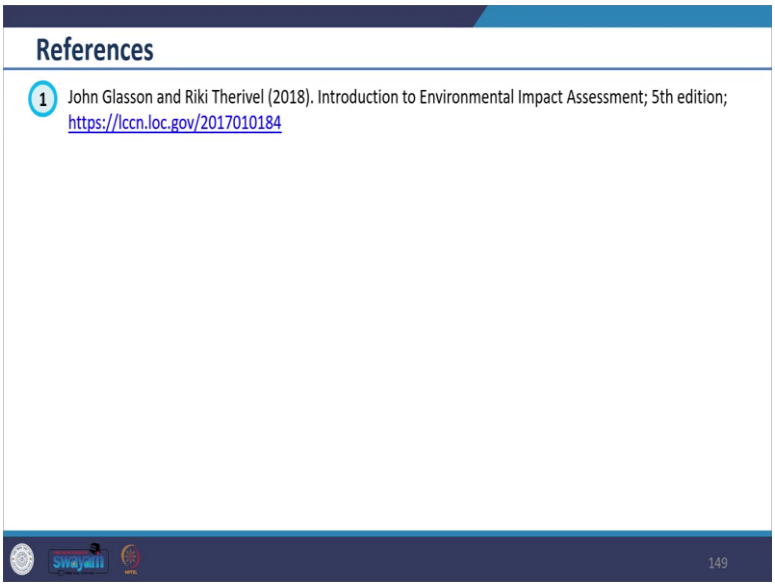

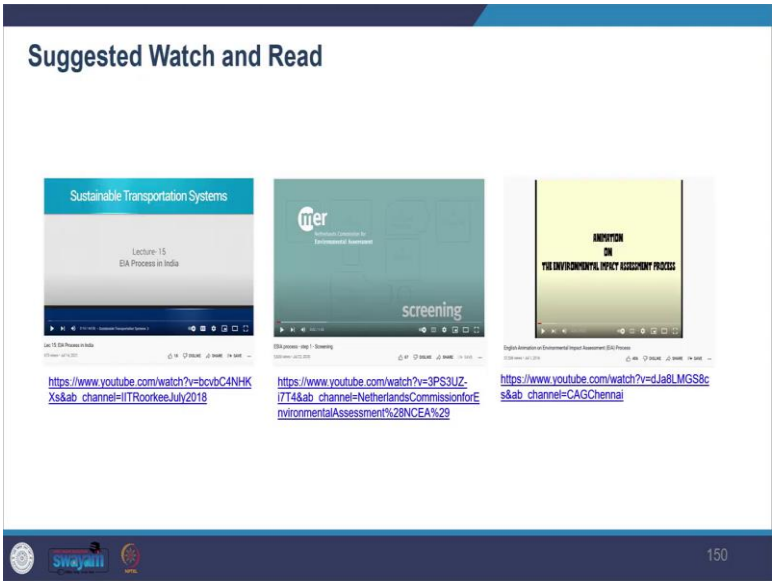

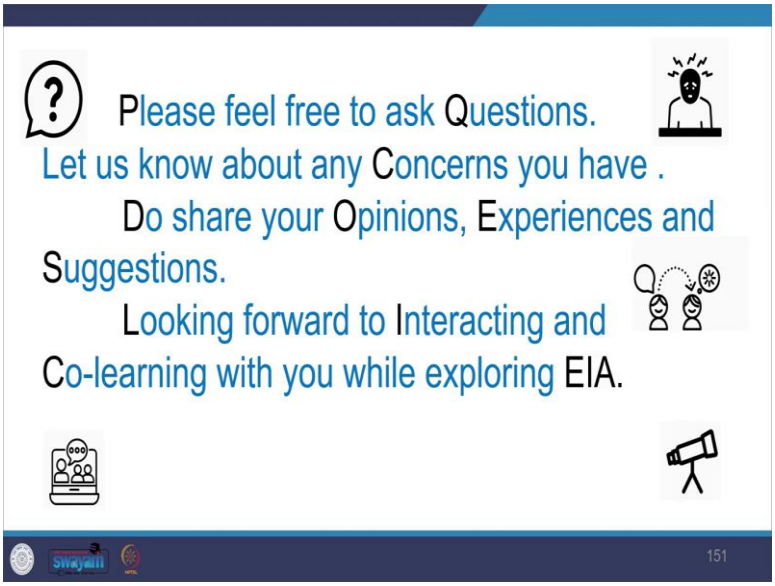

This was our key reference for this and there are suggested watch and read and all the sectorial manuals also you can see for the purpose. Please feel free to ask questions. Let us know about any concerns you have to share your opinions, experiences, and stations looking forward to interacting and Co-learning with you while exploring EIA. Thank you