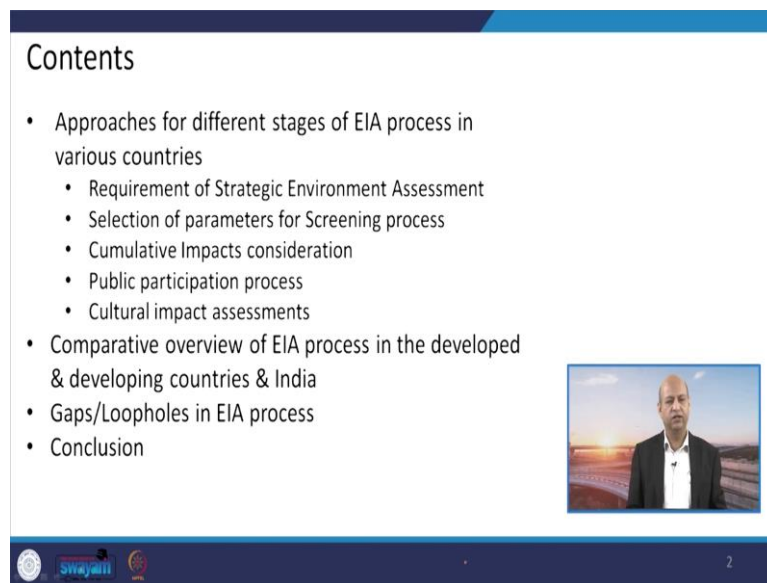


Sustainable Transportation Systems
Professor. Bhola Ram Gurjar
Department of Civil Engineering
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Lecture No. 16
Global Practices in EIA Process


Hi, friends. So, in the series of different aspects and dimensions of environmental impact assessment that is EIA process, today we will discuss about Global Perspectives or Global Practices related to EIA process, so that we can know about certain strengths or weaknesses of EIA processes, which are followed across the world.



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Contents

- Approaches for different stages of EIA process in various countries
 - Requirement of Strategic Environment Assessment
 - Selection of parameters for Screening process
 - Cumulative Impacts consideration
 - Public participation process
 - Cultural impact assessments
- Comparative overview of EIA process in the developed & developing countries & India
- Gaps/Loopholes in EIA process
- Conclusion



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So, today's lecture content is listed here for example, approaches for different stages of EIA process in various countries, we will discuss that, we will include like requirement of a strategic environmental assessment that is SEA and then selection of different parameters for screening processes, which also vary from country to country.

Some countries discuss about independent impacts on certain aspects or components of the environment, whereas other countries, they take the cumulative or combined effect of the different activities on the environment. And also, like public participation varies from country to country. Some countries are very particular about it, and they include public participation, feedback and their constructive involvement at several stages of the complete project whereas in other countries, it may be a little bit symbolic or at preliminary stages only.

Then there are cultural impact assessments, which are extension of social impacts or socio-economic dimensions. So, that is also one part which some countries give quite significant

emphasis and other countries just to do it superficially, you can say. Then, we will see like comparative overview of EIA process in developed countries and in comparison to developing countries plus some aspects of Indian EIA system we will discuss in that context.

And last, we will see what are different gaps or loopholes in EIA process which sometimes, some agencies or they use to cut short or to get those kind of short directions rather than going in very integrated way. So, those things we can discuss, and at last we will conclude this lecture.

(Refer Slide Time: 3:01)

Requirement of Strategic Environment Assessment (SEA) in different countries

- Legal provisions have been integrated within EIA legislation
 - Ex.- Kenya (Africa) and Tanzania (Africa)
- Separate laws or regulations for SEA
 - Ex.- Indonesia (South-east Asia) and Canada (North America)
- Legal requirements have been integrated within other Sectoral legislations (Transport, Energy etc.)
 - Ex.- New Zealand

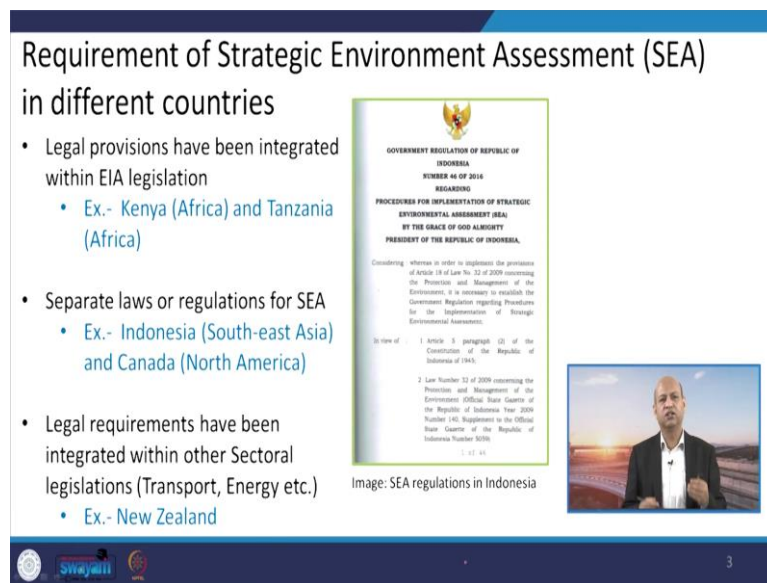


Image: SEA regulations in Indonesia

So, first of all, we see like requirement of SEA that strategic environment assessment in different countries have different ways of doing it, for example, in Kenya in Africa and Tanzania in these two countries, the legal provisions have been integrated along with EIA legislation, whereas in some countries they are separated.

For example, in Canada, the separate laws are there and regulations for SEA, so means of course, they are considered and they are incorporated in a larger framework, but they are not linked within a single document as some countries do. And then there are like, hybrid approach where these requirements are dealt with sectoral basis like for particular sector, transport sector or energy sector. So, those kinds of sectors are, taken care of through different legislations as New Zealand has done for this.

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Approaches of selecting parameters for EIA

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    graph TD
      A[Approaches for selection of parameters] --> B[Environment-centered parameters]
      A --> C[Development-centered parameters]
      A --> D[Hybrid approach]
  
```

- **Environment-centered:** Listing of factors/criteria/parameters for assessing the likely Impact
- **Development-centered:** Listing development activities
- **Hybrid:** Between two approaches

Now, we see the different approaches of selecting various parameters of EIA. So, there are three broader framework like environment centred parameters, where we discussed lot of things from environmental perspective. Other one is development centre means the primary objective is to have development related projects and their implications are considered with more focus.

And then, there is third hybrid approach where both environmental as well as development related parameters are considered and discussed in detail. So, for example, in environmental centred, you know factors criteria, we see that what are the impacts on the environment, that is the primary thing. And in development, those activities or projects are primary things.

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Environmental impact centered parameters for EIA screening

| S.No. | Information/Checklist confirmation | Yes/No | Details thereof (with approximate quantities/rates, wherever possible) with source of information data |
|-------|--|--------|--|
| 5.1 | Emissions from combustion of fossil fuels from stationary or mobile sources | | |
| 5.2 | Emissions from production processes | | |
| 5.3 | Emissions from materials handling including storage or transport | | |
| 5.4 | Emissions from construction activities including plant and equipment | | |
| 5.5 | Dust or odours from handling of materials including construction materials, sewage and waste | | |

Sample Check list for project screening in India

Would you consider these information asked as **Environmental impact centered?** (Yes, these are..)

For screening process, India follows hybrid approach

- Information asked in Checklist contains both development/ activity and environmental centered parameters

So, you can see this one table, where environment related impact centred parameters are considered for screening, that means, we see like, how much emissions are there of different pollutants. So, this is one example and then what will be the impact on the air quality, how much it will deteriorate or there will not be an impact those kinds of things.

So, in screening process, this hybrid approach India follows, basically in India, in our country, we follow this hybrid approach where environmental and development concerns are taken together, but in some countries like only environment is more important and development factors are taken secondary position.

Then there is as we discussed the development related centred or development centred parameters are taken into account as a priori thing in EIA screening. So, that way we see like pre construction activities or their impact, socio economic impacts. So, suppose some project is giving lot of employment, then that is considered more important in certain economies.

So, that way some differences are there, but ultimately of course, environment is there and we cannot ignore the environmental impact and that is why this EIA is there after all environmental impact assessment in totality.


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Parameters for EIA Screening: European Union (EU)

Sample Check list for project screening in EU

- Is this check-list development centered or environment centered?
 - (This is an example of hybrid approach..)

| |
|--|
| 1. Will construction, operation, decommissioning or demolition works of the Project involve actions that will cause physical changes in the locality (topography, land use, changes in waterbodies, etc.)? |
| 2. Will construction or the operation of the Project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or are in short supply? |
| 3. Will the Project involve the use, storage, transport, handling or production of substances or materials which could be harmful to human health, to the environment or raise concerns about actual or perceived risks to human health? |
| 4. Will the Project produce solid wastes during construction or operation or decommissioning? |
| 5. Will the Project release pollutants or any hazardous, toxic or noxious substances to air or lead to exceeding Ambient Air Quality standards in Directives 2008/50/EC and 2004/107/EC)? |



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Well, if you see like European Union, EIA screening related parameters, so, you can see like for example, topography, land use changes, water bodies, those kind of things, then, perceived risk on the human health all these, parameters are taken care of in that particular screening activity with the basis of some checklists like we have earlier discussed in the

checklist that this will impact positively yes or no, negatively yes or no those kinds of things are there for screening purpose.

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Screening Process for EIA in European Union

- In the European Union, member countries are required to **classify projects in two categories (I & II)**
- Determination based on a **case-by-case examination or the setting of thresholds criteria or a hybrid of both by countries separately.**



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Screening Process for EIA in Peru

Screening through three project categories:

- Category-I projects:** Only an Environmental Impact Statement (EIS) needs to be prepared, **(expected low environmental impacts)**
- Category-II projects:** Need to undergo a Semi-detailed Environmental Impact Study (EIA-SD) **(expected moderate impacts from projects)**
- Category-III projects:** Need to undergo a Detailed Environmental Impact Study (EIA-D) **(expected significant environmental impacts)**


Artículo 4°.- Categorización de proyectos de acuerdo al riesgo ambiental

4.1 Toda acción comprendida en el listado de inclusión que establece el Reglamento, según lo previsto en el Artículo 2° de la presente Ley, respecto de la cual se exige la certificación ambiental, deberá ser clasificada en una de las siguientes categorías:

- a) Categoría I - Declaración de Impacto Ambiental: Incluye aquellos proyectos cuya ejecución no origina impactos ambientales negativos de carácter significativo.
- b) Categoría II - Estudio de Impacto Ambiental Semidetallado: Incluye los proyectos cuya ejecución puede originar impactos ambientales moderados y cuyos efectos negativos pueden ser eliminados o minimizados mediante la adopción de medidas técnicamente aplicables. Los proyectos de esta categoría requieren de un Estudio de Impacto Ambiental detallado (EIA-D).
- c) Categoría III - Estudio de Impacto Ambiental Detallado: Incluye aquellos proyectos cuyas características, envergadura y/o localización pueden producir impactos ambientales negativos significativos, cuantitativa o cualitativamente, requiriendo un análisis profundo para revisar sus impactos y proponer la estrategia de manejo ambiental correspondiente. Los proyectos de esta categoría requieren de un Estudio de Impacto Ambiental detallado (EIA-D).

4.2 Esta clasificación deberá efectuarse siguiendo los criterios de protección ambiental establecidos por la autoridad competente.

Image: Categorization of projects, Article 4, Law 27446



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When we go further in the screening process, like European Union member countries, which classify projects in terms of category I and category II, so, those categories are different and then some case-to-case basis things are considered as per their total impact, whether it is category I or category II, or the category III, which is kind of very severe.

So, here it is, you know, it is clearly mentioned that category I projects as in Peru, this is one example for screening, in the Peru, one country. So, only an environmental impact statement or EIS is required, means that means those category projects are not very highly impactful in

terms of negative influences on the environment. So, that is basically low environmental impacts. So, those projects are listed as category I projects.

Then category II are like moderate impact. So, semi detailed environmental impact study is carried out EIA-SD which is called in category II. And then category III are like detailed environmental impact assessment is carried out because those projects are supposed to give very large impacts on the environment.

(Refer Slide Time: 8:31)

The slide is titled "Special feature of EIA screening process in Kenya". It contains two main bullet points in a light blue box on the left:

- The Kenyan EIA legislation is one of the few that requires the **involvement of an environmental practitioner at screening stage.**
- Knowingly providing false or misleading information is considered an **offence and leads to the punishment.**

On the right, there is a red-bordered box containing a legal snippet:

CAP. 387 [Rev. 2012]
Environmental Management and Co-ordination

(c) fraudulently makes false statements in an environmental impact assessment report submitted under this Act or regulations made thereunder.

commits an offence and is liable on conviction to imprisonment for a term not exceeding twenty four months or to a fine of not more than two million shillings or to both such imprisonment and fine.

Image: Article 138, Section C, EIA legislation of Kenya

At the bottom right of the slide, there is a small video thumbnail showing a man in a suit speaking. The bottom of the slide features a dark blue footer with logos for "Swayam" and "10".

Well, like there is another example of Kenya. So, in this some special features of EIA are considered in a screening process. So, those are like, involvement of environmental practitioners at screening stage. So, those who have special knowledge of those particular projects, so, they are taken into those committees and if some misleading information is supplied by the, project proponents, then there are provisions for punishment like imprisonment or large fine those kinds of things are there.

(Refer Slide Time: 9:15)

Consideration of cumulative impacts during scoping stage

Impacts of project are considered in regional perspective rather than local or independent, called cumulative impact.

Ex.- China

- No mention of cumulative impact assessment for EIA


Ex.- Canada

- Study of cumulative effects of physical activities in a region and their consideration in environmental assessment

(ii) in a province other than the one in which the act or thing is done or where the physical activity, the designated project or the project is being carried out, or

(iii) outside Canada; and

Image: Consideration of impact (Sub section ii, iii, section b, article 5, Canadian EIA legislation 2012)



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Then cumulative impacts are also important in certain countries, cumulative impacts are given importance, because, as you know, sometimes whole is greater than part, it is, there is a saying that the whole is greater than the total sum of the parts, that is the synergic impact you can call that.

So, like in Canada, the cumulative effects are taken care of physico chemical impact, then biodiversity impacts, all total impacts are taken, whereas in China only individual impacts, only component related impacts are taken care of, they do not go for detailed, cumulative impacts.

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Examples of cumulative impacts

In Megacity Delhi,

- Vehicle and industrial sources are the main contributors of pollution.
- But in winter season, sudden rise in pollution is observed
 - Experts believes that stubble burning in the neighboring states adds a large chunk of pollutants to Delhi's environment.

Do you think, to lower this pollution, Management should be in a macro (Regional) or micro level (state boundaries)?
(Cumulative impacts needs to be addressed at regional levels..)





Image source: theprint.in



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So, the example of cumulative impact to illustrate or to visualise for example, if we want to study the air quality of Megacity Delhi, so, it is not only the local source, if, if we want to assess the air quality, then it is not only the emission inventory of the local sources, but because it is in the downwind direction of several other prominent sources of air pollution like stubble burning in nearby states. So, those also really impact the air quality of Delhi.

So, that means, if you want to study the air quality of Megacity Delhi, then you have to take the regional contributors into account otherwise, your modelling efforts will not be proper, you may end up like less prediction or the estimation may be lower than what can be actual in the real sense. So, those are the community impacts which should be taken into account if you want to go for these kind of air quality assessment in cities which have more than localised sources or regional sources impact is quite prominent.

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Mitigation Measures for individual impacts

Example: China

- Mitigation measures for each likely adverse environmental impact should be considered during scoping process.
- Installations for the prevention and control of pollution at a construction project must be designed, built and commissioned.

Chapter IV Prevention and Control of Pollution and Other Public Hazards


Article 40 The State shall promote clean production and resources recycling. Relevant departments of the State Council and local people's governments at various levels shall adopt measures to promote the production and use of clean energy.

Enterprises shall give priority to the introduction of clean energy, adopt process and facilities with higher resource efficiency as well as low pollution discharges, and apply comprehensive waste utilization technologies and waste disposal technologies to reduce pollutant generation.

Article 41 Installations for the prevention and control of pollution at a construction project must be designed, built and commissioned together with the principal part of the project. Installations of the pollution prevention and control facility shall comply with the requirements of the approved environmental impact assessment report, and shall not be dismantled or left idle without authorization.

Article 42 Enterprises, public institutions and other producers and business operators that discharge pollutants shall take measures to prevent and control the

Image: Article 40,41,42; Environment Protection Act, 2014



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Example of mitigation measure for individual impacts

- Surrounding the noise making facility/machine/road with noise barriers
- Treatment of sludge of factories before dumping it into rivers.
- Using efficient machines in a manufacturing unit (less fuel consumption & pollution)




Image: Noise barrier along the road




Image source: perforated-pipe.com,

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Well mitigation measures for individual impacts are taken into certain countries for example, one is for the China. So, they are some legislations which take into account and only component wise component like only air quality, then water quality or a particular ecosystem and it is compartment kind of impact studies taken care of.

Well, one another example of individual impact can be like some highway is going through some let us say town or village nearby and there may be like a lot of noise. So, we have to have barriers. So, those noise barriers along the road, they are kind of addressing only the individual impact, means they will only cater for the noise related impacts.

Otherwise, if you go for other activities like sludge related treatment before dumping into the river, so, that the quality of the sludge after treatment must be okay as per the laws. Similarly, some efficient machines are used, so, that less fuel is burned, last air quality deterioration is there because of that, so, these individual or compartment related activities may be their concern, there may be some activities according to the case by case.

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Offset for adverse environment impacts

Example: Brazil

- Projects subject to environmental licensing must offset their impacts on protected areas.

Example: Mexico

- Sustainable Forest Development Act of 2003 requires offsets for impacts that result in land-use change to forested areas.
- Recently enacted Environmental Liability Act (2013) also requires offsets, but only when impacts are not predicted or approved in the EIA and are an environmental offence.



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Well, then there are offsets of adverse environmental impact that means, by law some projects, they they give the licence only when it is given some detailed project management plan that these negative impacts will be completely taken care of means, those kind of major technological measures or policy measures will be implemented before the end of the project, so, that there is no negative impacts. So, in Mexico, in Brazil, those kinds of approaches are included in their legislation.

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Example of offset for impacts: Antamina mines

- Polylepis (a shrub) habitat is indirectly impacted by the Antamina mine
- The EIA concludes that overall impacts to flora and fauna are limited. The key concern identified in the EIA was the **potential for destruction of the endangered shrub species (Polylepis)**
- **Conservation programme was carried out at large scale**





Image: Antamina Mines in Peru
Source: bhp.com



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Well, then, for example, one offset of the impacts related case study is there for in this particular Peru, in this Peru mines related activity was there and there was impact assessment study, which did not give much care for other or much impact for the other activities or

components, but there was only one aspect that potential destruction may be there for endangered shrub species, means overall, EIA was goody-goody, but this particular aspect was quite negative. And so, the conservation program was carried out properly at the large scale and only then this EIA was given.

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Responsibility of preparing EIA reports

- **Government agency**
Ex. - U.S.A.
- **Government licensed or registered consultants or agencies**
Ex. - Vanuatu, Cameroon, Peru, China, Mongolia, Oman, Lebanon
- **Individual with certification**
Ex. - Indonesia

In India, EIA reports are prepared by agencies registered under QCI (Quality Council of India) or notified by Ministry of Environment, Forest & Climate Change (MoEF&CC)

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Responsibility for preparing EIA reports also vary from country to country for example, in India, we have this Quality Council of India, the employment is given for certain organisations and individual experts, only those can carry out the EIA, this is the recent development and as per the notification only those kind of organisations should carry out. Otherwise, earlier, there was this practice that some people will having not even the right qualification, they could carry out the EIA studies and there were very low quality of EIA studies earlier.

But later on, this very good important provision was made. In USA government agency is more responsible for carrying out EIA studies, but in other countries, there are licencing process means some registered consultants or agencies are given permission for carrying out these studies.

In Indonesia individual with some certification. So, every country has their own way to allow or disallow who can carry out the EIA, there may be review process also after certain years, and whether their expertise are giving good EIA reports or not. So, those things are also considered after renewing the licence.


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Public Participation in Canada

- Public is invited to submit comments for a period of 20 days after project is subject to a screening & similarly at other stages.
- Any comments received must be considered by the Canadian Environmental Assessment Agency.

In Canada, public participation is a multi-stage process.

- It starts from screening stage up to monitoring stage which is against general practice in most of the other countries.



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Public participation is one more aspect which is quite varying from country to country for example, in Canada, they have, at several stages, they invite the public for their feedback and they consider their feedback as the positive aspects and according to they address their issues.

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Definition of Public 1/2

Example: China

- 2014 Environmental Protection act: make public the full text of the EIA report.
- Opportunity to participate in hearings or to make oral or written submissions to the Pollution Control Boards is restricted to residents, environmental groups and others located at the project site and likely to be affected.

Article 57. Citizens, legal persons and other organizations shall be entitled to report and complain environmental pollution and ecological damage activities of any units and individuals to competent environmental protection administrations or other departments with environmental supervision responsibilities.

In the event the local people's government and its environmental protection administrations or any other relevant departments fail to fulfill their responsibilities in accordance with the law, any citizen, legal person or other organizations have the right to report it to the competent higher level governments or the supervisory department according to law.


The authorities receiving the report shall keep confidential the relevant information of the informant, and protect the legitimate rights and interests of the informant.

Article 58. For activities that cause environmental pollution, ecological damage and public interest harm, social organizations that meet the following conditions may file litigation to the people's courts:

(1) Have their registration at the civil affair departments of people's governments at or above municipal level with sub-districts in accordance with the law;

(2) Specialize in environmental protection public interest activities for five

Image: Article 57, 58; Environment Protection Act, 2014



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Well, but public is also defined public participation is defined in different way. So, in case of like China, they say that some participate in hearing is there or some groups are there. So, they just consult them and they say that, okay, this public hearing is done, which may not be as exhaustive as done in other countries, for example, in Canada.

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Definition of Public 2/2

Example: Denmark

- One or more natural or legal persons (companies, etc.) directly or indirectly affected or likely to be affected
- Associations and organizations that have the protection of the landscape, cultural heritage, natural or environmental interests as objective



Source: swajail


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In Denmark like some legal persons or some companies which are directly or indirectly affected, they are the part of this process and some associations also they can be invited for their feedback.

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Example of public participation: Light Rail Project, Baltimore, U.S.A.

- 52 Pre-scoping "Listening Tours"
- Initial scoping meetings/written comment period
- Published reports on website
- Designation of community liaisons
- Four Public hearings
- Citizens' Advisory Council
- Speaker's Bureau Meetings/Neighborhood Events/Community Meetings
- Study Area Resource Hubs and designated liaisons for specific communities



Source: epa.gov

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Well in USA, this is one illustration of the public participation, how detailed public participation was carried out, see 52 pre-scoping listening tours were carried out. So, that is the very detailed one, which is one example, how public really participate in decision making of those projects, which are related to socio economic as well as environmental impacts and four public hearing was carried out after this liaisoning was there and then some community

meetings were there. So, it was a complete detailed, participation of the public before getting this project.

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EIA Review process in the European Union (EU)

- EU guideline suggests to review the EIS (Environment Impact Statement) report before any decision making.
- Review should be done either by govt. agencies or professional asked to do so on behalf of government.

A3 Implementation of Review in the EU

In some Member States review of the adequacy of EIS before they are used for decision-making is a mandatory stage in the EIA procedure. In these cases the review may be undertaken by the competent authority or by an independent organisation on behalf of the competent authority. Where the EIS is considered to be inadequate, the developer will be asked to provide additional information and the development consent decision process will not start until this information has been provided. There will usually be a procedure for appeal against requests for further information.

In other Member States there is no formal stage of review in the EIA procedure but competent authorities will usually undertake some sort of review before starting the decision-making process, to ensure that the requirements of the legislation have been met. They will then usually have the power to ask for further information from developers before the decision-making process starts, if they consider the EIS to be inadequate. Review may also be undertaken informally by the developer prior to submitting the EIS to the competent authority or by consultants after it is submitted, to check that the information is adequate.

Various professional bodies, for example the Institute of Environmental Management and Assessment in the United Kingdom (<http://www.iem.org.uk>) and EIA research institutions (see <http://europa.eu.int/comm/environment/eia/contacts2.htm> for a list of EIA Centres) will provide EIS review as a service to competent authorities, developers and other parties if required.

An overview of Member State requirements for review as they were in August 1999 can be found in a report at <http://europa.eu.int/comm/environment/eia/eia-studies-and-reports/study1.htm>.




Image: Section A3, Eu guidelines for review



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There are certain review processes for EIA, like European Union has given very detailed guidelines for review process of environment impact statement, and before decision making, all those impact assessment related statements are studied and all components are critically examined, before it is given permission. So, it is done either by the government agencies or some professionals are requested or they are given some honorarium for carrying out these activities.

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EIA Review process in Cameroon

- After the Environmental and Social Impact Assessment (ESIA), report submits to the Ministry of Environment, Nature Protection and Sustainable Development
- Ministry can undertake on-site visits to qualitatively verify the information included in the assessments and to obtain feedback by the concerned public
- The outcomes are transmitted in a report to the Inter-ministerial Committee.



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In like, Cameroon this is one example of Ministry of Environment Nature Protection and Sustainable Development. So, they do environmental and social impact assessment, ESIA, and this can undertake on site visits to qualitatively verify the information included like assessment and the feedback by the concerned public and outcomes are transmitted in a report. So, they also do very systematic way, very systematic way and participation of the public is there and it is well documented.

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Global best features for follow up/monitoring as suggested by the UNEP (United Nations Environment Programme)

- Sufficient information available at regular intervals ✓
- Manage adverse impacts based on monitoring data (if any)
- Ensure indigenous community participation in environmental management /
- Expend the powers of the competent enforcement agencies
- Create regional monitoring networks

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Then if we talk about like global best features, which should be followed or for monitoring purpose as given or and listed by United Nations Environment Program, so, at regular intervals sufficient information should be available, and they should be able to manage the adverse impacts based on the monitoring data.

If there are availability of the data is there, then it should ensure indigenous community participation in environmental management that is very important, because, at times you might have seen various agitations when local population feel that some project has been imposed on them. So, that is a very negative outcome of the project proposal. If you cannot, build that trust in the public, there may be several problems in the future when you are going to implement the project.

So, the local indigenous people should be taken in faith, in trust by giving them full information about the project's benefits, which will be for them and for the society at large. Then, competent enforcement agencies are there which can be there for their powers are there legal status, then they can create some regional monitoring networks also so that proper feedbacks are always available.

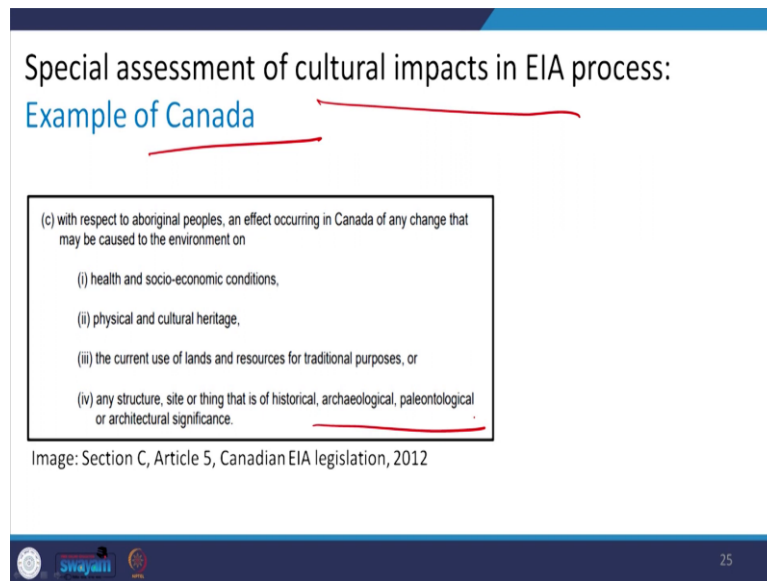
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Special assessment of cultural impacts in EIA process: Example of Canada

(c) with respect to aboriginal peoples, an effect occurring in Canada of any change that may be caused to the environment on

- (i) health and socio-economic conditions,
- (ii) physical and cultural heritage,
- (iii) the current use of lands and resources for traditional purposes, or
- (iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.

Image: Section C, Article 5, Canadian EIA legislation, 2012



Well, this is one example like, so, best practices examples are taken from different countries. So, like for in case of Canada, cultural impacts in EIA process is very important. So, that the local population like tribes and their customs or their historical and archaeological those places they should not be disturbed, they should not be disturbed and their conservation is the prime importance of that whole process.

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Example of Laurentia Project in Canada

Laurentia Project: Port of Quebec Deep-Water Wharf – Beauport

EIA report concluded: Significant adverse environmental effects to fish and fish habitat, air quality and human health, socio-economic conditions, and the current use of lands and resources for traditional purposes by Indigenous peoples.

- Ultimately, this project was not commissioned.

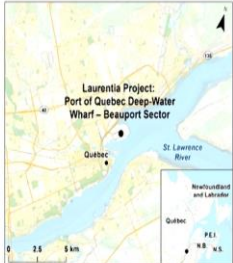
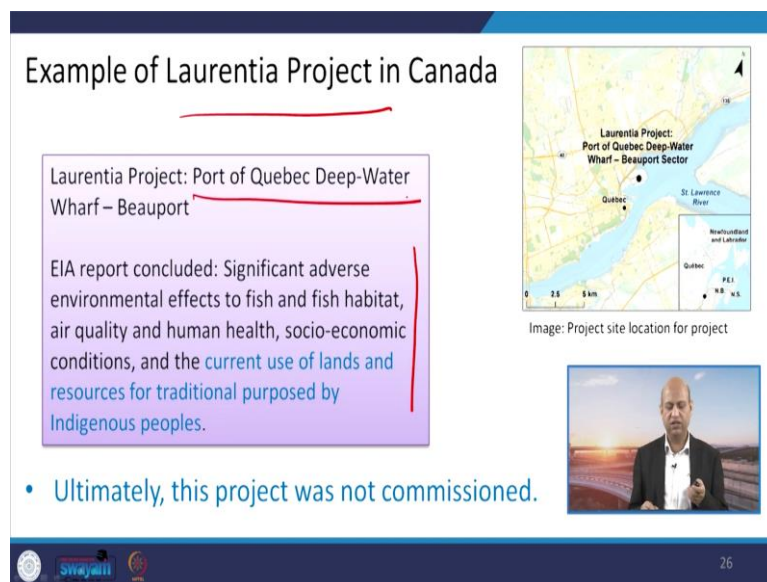



Image: Project site location for project



So, one interesting example here of this Laurentia project in Canada, where significant adverse environmental effects to the fish and fish habitat and air quality, human health, socio economic, those kinds of entities were estimated because of this particular port related project and it was estimated that those those impacts may be very high or very negative.


So, ultimately this project was not commissioned. So, that means, if you do the detailed analysis of the environmental impacts of different components, whether aquatic life and the human health etcetera and you carry out critical examination, then decision making can be quite objective rather than subjective.

(Refer Slide Time: 21:32)

Special assessment of cultural impacts in EIA process:
Example of New Zealand

For aboriginal peoples (indigenous tribal people), environmental effects that are to be considered in EIAs are:

- Health and socio-economic conditions;
- Physical and cultural heritage;
- Current use of lands and resources for traditional purposes
- Structure, site or objective that is of historical, archaeological, paleontological or architectural significance
- Impact on community knowledge and aboriginal traditional knowledge.



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There are you know in New Zealand also cultural impacts related provisions are there in their EIA related process. So, health and socio-economic conditions are given prime importance, physical or cultural heritage, if there are some places like that, so, they should be intact. Then the current use of the lands and resources for traditional purposes, if it is impacted drastically, then it should be avoided, other methods should be used, some alternative methods can be proposed.


Then structure, site or objective that is of historical or archaeological significance, so, that should not be disturbed. And the impact on community knowledge those local communities they have some traditional knowledge and if some project influence that community living in such a way that that knowledge can be lost in future, so, again, that should not be there. So, some alternative approaches should be there, so, that the preservation or conservation of those local practices or traditional knowledge can be ensured.

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Formal & legal basis: Comparative Overview of EIA process

| Developed Countries | Developing Countries | India |
|--|---|--|
| <ul style="list-style-type: none"> Well-framed EIA legislation in place. For instance, in Canada, Canadian Environmental Assessment Act regulates EIA, while EU countries are guided by Directive on EIA (1985) | <ul style="list-style-type: none"> Lack of formal EIA legislation in many developing countries. For instance, EIA is not mandatory in many African countries | <ul style="list-style-type: none"> Formal legislation for EIA. It has been enacted by making an amendment in the Environment Protection Act 1986. |

Source: Industry & Environment Unit, Centre for Science & Environment



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Well, then there are formal and legal basis for EIA processes, so, we can see the tabulated form comparison of developed countries and developing countries and also given for India. So, well framed EIA legislation are there in developed countries like Canada and they do very systematically and very exhaustive process is there.

In developing countries sometimes, they have some activities where even EIA is not required. In like in some African countries, still there are several activities, which are just done without any EIA. And in India, there is of course, formal legislation, which is based on Environmental Protection Act of 1986. And slowly we are moving towards those kind of well framed EIA legislation as it exists in developed countries.

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Public Participation: Comparative Overview of EIA process

| Developed Countries | Developing Countries | India |
|---|--|--|
| <ul style="list-style-type: none"> Active involvement of all participants including competent authority, government agencies and affected people at early stages of the EIA. This makes the process more robust and gives a fair idea of issues, which need to be addressed in the initial phase of EIA. | <ul style="list-style-type: none"> Limited involvement of public and government agencies in the initial phases. This often results in poor representation of the issues and impacts in the report, adversely affecting the quality of the report. | <ul style="list-style-type: none"> Limited involvement of public and government agencies in the initial phases. |




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When we talk about public participation, so, this is very active involvement in case of developed countries as we have seen the example of Canada and America at several stages, they do this public participation. In developing countries, it is picking up and in limited way, involvement of public is being encouraged. In India also now, it is going on and it is increasing day by day.

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Impact type & Alternatives: Comparative Overview of EIA process

| Developed Countries | Developing Countries | India |
|--|--|---|
| <ul style="list-style-type: none"> Integrated approach to EIA followed. All aspects including social and health considered. | <ul style="list-style-type: none"> Mainly environmental aspects considered. Poor on social or health aspects. | <ul style="list-style-type: none"> No provision in place to cover landscape and visual impacts in the Indian EIA regulations |
| <ul style="list-style-type: none"> Proper consideration of alternatives in EIA | <ul style="list-style-type: none"> The consideration of alternatives in developing countries is absent. | <ul style="list-style-type: none"> Same as developing countries |




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Well, impact type and alternatives. So, that is again part of the total EIA process in developed countries means, they, they also talk about different alternative approaches to carry out that project, not only one way of doing that project. But in developing countries, this is still not in practice. And in India also, we go for only one kind of proposal.

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Language & technical approach: Comparative Overview of EIA process

| Developed Countries | Developing Countries | India |
|---|---|--|
| <ul style="list-style-type: none"> Most reports in local language | <ul style="list-style-type: none"> Most reports in one primary language and not in the local language. | <ul style="list-style-type: none"> Most reports in English and not in the local language. In some case, executive summary is translated in local language. |
| <ul style="list-style-type: none"> A multi-disciplinary approach. Involvement of expert with expertise in different areas. | <ul style="list-style-type: none"> Lack of trained EIA professionals often leads to the preparation of inadequate and irrelevant EIA reports in developing countries | <ul style="list-style-type: none"> Preparation of EIA is done by consultants. Therefore, the selection criterion for the organization is fees/cost rather than the expertise of EIA team. |



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When we talk about, language and technical approaches, how it is communicated or disseminated, then, in local languages also developed countries they publish their reports in several languages. In developing countries, some dominating language is there, which is a primary language of communication or administration in that language those reports are available.

So, same story is there in case of India although now bilingual reports are sometimes available like in English and in Hindi, some states are also coming up with some local language translation, but still, that is not very popular. But in future it will, boost or accelerate this process.

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Expertise level: Comparative overview of EIA process

| Developed Countries | Developing Countries | India |
|---|--|---|
| <ul style="list-style-type: none">Many individuals with the capability to design, conduct, review and evaluate EIAs from countries of the North. The major portion of teaching about environmental assessment also takes place in industrial countries. | <ul style="list-style-type: none">The expertise in EIA is slowly developing. In most cases, students from the developing countries go to the developed countries to gain knowledge of the subject. | <ul style="list-style-type: none">Expertise in this area is developing. |



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Then expertise level for example, in developed countries they have many individuals who are well qualified to do EIA and very good organisations, which have the pool of experts, they can carry out EIA in very objective way. In developing countries expertise is limited and slowly expertise is building up. And in India also, as we have this organisation which do empanelment of experts and those organisations, so, we are now having the pool of experts.

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Gaps/Loopholes in EIA process: Project splitting or Salami Slicing approach

To by-pass the EIA process all together:

- Separate the project into small parts which do not cross threshold level individually but as whole may come into high impact projects
- This is very common practice in various countries where projects are splitted into many small projects



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Now, we talk about certain gaps or loopholes in EIA process, which sometimes in some countries people used to have shortcuts kind of things, which is not good in totality. For example, suppose in certain legislations, there is like length of the road after this length, the detailed EIA is required.

So, what those agencies do, they split that road project into different parts, so, that, that total length is not there, and in that case, they can do away with the detailed EIA rather they go for quick, speedy, rapid EIA kind of things and something like that. So, this is one approach, which is salami or slicing approach.

Salami slicing approach is popularly known by people in this area, project splitting. So, bypassing EIA process is not a good thing, but, when unless we do this integration or holistic combined cumulative impact assessment, it is, possibility is there that people can do the, these splitting.

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Example of Project splitting in Spain

- Failing to carry out an assessment of the effects on the environment (through project splitting) of the 'project for a Valencia-Tarragona railway line, Las Palmas-Oropesa section' which forms part of the project known as the 'Mediterranean corridor,
- Spain was forced to carry out EIA

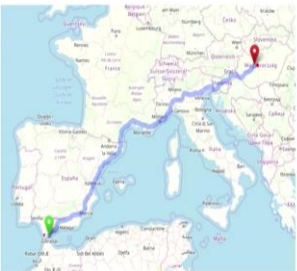



Image: Mediterranean Corridor Rail line map



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So, this is one case or example of project splitting in Spain that was a big project of this corridor from this point to that one, this Mediterranean corridor rail line map, you can see it was very long corridor and this was broken into different projects. So, ultimately, those environmental groups they agitated, they gave their representations and the Spain was forced to carry out its EIA, otherwise after splitting there was no need of detailed EIA.

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Example of Project splitting in U.K.

- Urban development projects at White City and at Crystal Palace, project was divided into small activities.
- The United Kingdom of Great Britain and Northern Ireland has failed to fulfil its obligations to carry out the EIA process.
- Project was stayed by European court





Image: Project site of White city project



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Then similarly, this of the UK some urban development related projects at White City and Crystal Palace, those were divided into small activities. So, those are the ways of splitting projects and avoiding the EIA.

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Measures to avoid project splitting: European Countries

| Country | Regulations |
|-------------------------|--|
| Portugal | <ul style="list-style-type: none">Apply EIA below the thresholds if necessary |
| Sweden | <ul style="list-style-type: none">Assess the scope of the project in the screening phase |
| Denmark, Finland, Spain | <ul style="list-style-type: none">Use case-by-case screening |
| Germany, U.K. | <ul style="list-style-type: none">Regulation for requirements to consider a project as independent |
| Austria | <ul style="list-style-type: none">Consider all the associated developments part of a project |

Source: EC (2003), IMPEL (2012), Salamanca A. (2016)



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Well, then, how to avoid those project splitting kind of things or these gaps or loopholes. So, there are ways for example, in Portugal, apply EIA below the threshold if necessary. So, that means there are legislations or agencies which can give the orders that even if this threshold limit is not crossed, EIA can be there.

So, there is a possibility means if you go and say that, we feel that although this project is not violating or exceeding those limits in terms of project cost or the length of the highway, but we feel that its activities can influence certain locations or habitat, then government can order for this EIA.

In Sweden, assess the scope of the project in the screening phase. So, at the screening phase also, one can give this order that okay, EIA will be required for this particular activity. And in case by case in case of certain countries like Spain, Finland, Denmark, as we have just seen one example of this Spain that, in this case, it was ultimately EIA was required. So, other countries examples are also there according those projects, worthiness EIA can be taken care of, even if there are some gaps or loopholes.

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Gaps/Loopholes in EIA process: Examples of exemption from EIA

Example of Nigeria

- Projects are exempted if it is in the interest of public health or safety

Example of Indonesia

- An activity can be exempted from the obligation to conduct an EIA if the location of the activity is within an area that has had an EIA already
- Location of the activity is within a district/ city that has already adopted a detailed spatial plan and/or a district/city strategic area spatial plan.




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Well, like in Nigeria, this practice is there that on the name of public health or safety, if some projects are, given that kind of category, then that is exempted from EIA. So, some people may take advantage of this. So, one has to be vigilant that if some project is titled as the health related or safety related, but ultimately its own activities may damage the public health, then the EIA must be there. In Indonesia, then there are certain activities which are exempted from the obligation of EIA. So, they those activities are listed.

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Conclusion

- The approaches for for different stages of EIA vary from . country to country.
- Best practices of EIA from countries worldwide can be adopted by other countries to minimize the significant impacts on the environment.
- More constructive public participation is required to be adopted during the EIA process to ensure transparency and increase acceptability of the projects.
- EIA process need to be implemented in spirit, not just words.



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And in conclusion, we can say that there are several approaches of different varying impacts, which are used by different countries for at different stages of the EIA, and some countries

are very good in detailed EIA, but other countries are still evolving their EIA approach to carry out an integrated and holistic environmental impact assessment.

And then there are best practices available, which are, adopted by some other countries to minimise the significant impact on the environment. And more constructive participation of public is necessary, we have seen some examples, how public participation can really improve the project's viability towards the local community and socio-economic factors.

And then EIA process need to be implemented in spirit, not just words, that is very, very important. It is our not only the legal duty, but it is so, it is also the moral obligation for us, that our activities should not harm other communities as well as other flora or fauna, that is a part of the ecosystem. So, the EIA is a very important activity which should be carried out in words as well as in the spirit so that we can ensure that environmental conservation is there and there is no degradation of the environment.

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Well, these are the references, which you can go through to get more information about this topic. And thank you for your kind attention. Now in future we will see different case studies. I am sure you will enjoy those case studies to get better visualisation of environmental impact assessment activity. Thank you.