

Environmental Impact Assessment
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Lecture 09

EIA Origin in USA and World Wide Development

Welcome to the course Environmental Impact Assessments. Today we see that EIA is almost in all the countries across the world in various forms. In the previous lectures, we also saw that EIA is a process and a legal tool. However, you may note that you may see how an EIA system is, for example, it is compulsory or flexible in a country, what level of engagement people will have? What type of action EIA would require, and how effectively it will be implemented on the ground will differ from country to country.

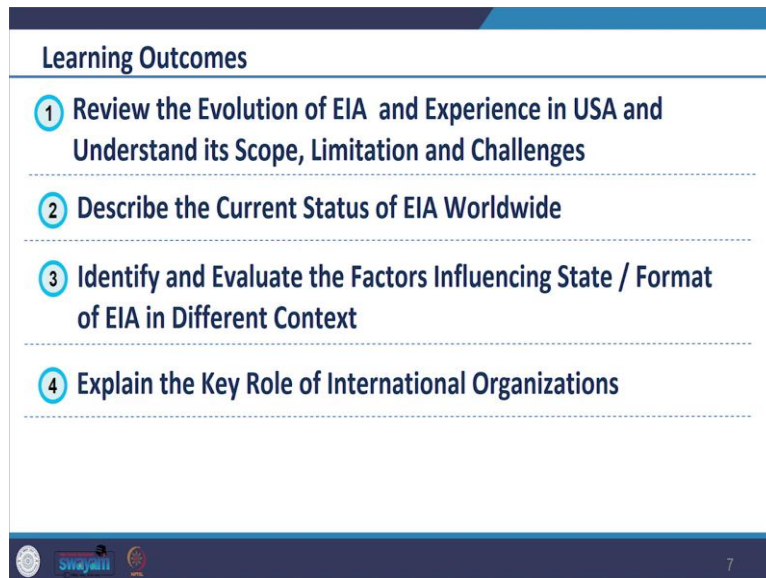
So, the USA had a key role to play in formally setting it up, setting up the EIA process, and eventually, the process eventually spread across to many more countries. In the USA it was established in 1969 and in India in 1994. Reviewing the journey of EIA as a legal tool helps us to understand its potential limitations and challenges. So today, we will see the evolution of EIA in the context of the USA.

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Coverage	
①	Evolution of EIA and Experience in USA
②	Current Status of EIA Worldwide
③	Factors Influencing Form of EIA systems
④	Key Role of International Organizations

Therefore in this session, we will look into how EIA evolved and the experience of EIA in the USA. What is the current status of EIA worldwide? What factors influence the form or the format of the EIA system? What role key international organizations have played in the IEA procedures and adaptation?

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Learning Outcomes

- 1 Review the Evolution of EIA and Experience in USA and Understand its Scope, Limitation and Challenges
- 2 Describe the Current Status of EIA Worldwide
- 3 Identify and Evaluate the Factors Influencing State / Format of EIA in Different Context
- 4 Explain the Key Role of International Organizations

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Accordingly, the learning outcomes will include that you should be able to review the evolution of EIA and experience in the USA and understand its scope, limitations, and challenges. You should be able to describe the current status of EIA worldwide and reflect upon why it is different. Identify and evaluate the factors influencing the state of EIA, and its format in different contexts, and explain the key role of international organization.

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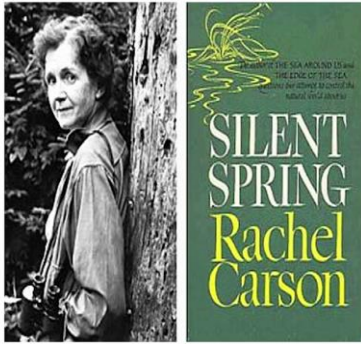
**Evolution of EIA
and
Experience in USA**

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Rachel Carsons' Silent Spring (1962)

(activist culture specially youth)

Silent Spring (1962)



The book was published on September 27, 1962.

During the 1960s and 1970s, an awareness of the environmental risks of many commonly used insecticides brought changes in museum practice, following the example of other major insecticide users such as the agricultural industry. Rachel Carson's groundbreaking *Silent Spring*, first published in 1962, is widely regarded as one of the most influential books in the history of the environmental movement. There is no doubt of its role in the banning of DDT throughout the "developed" world in 1973, although DDT continues to be produced and exported to developing countries. In the following excerpt, Carson explains the title of her book, asking the reader to imagine a world in which there is no hibiscus. She traces the impact of DDT as it is absorbed by creature after creature in the food chain, until eventually birds' eggs are unable to hatch, because their shells have become so brittle that they break when the birds sit on them. The effects of DDT on other species, including humans, is equally serious. In the second part of the excerpt, from the book's last chapter, Carson suggests biological control as an alternative to the chemical control of insects.

For this section, our key reference is chapter two from the book Introduction to EIA, by Glasson and Terrible. So you may recollect that from our very first lecture, we talked about Rachel Carson, who strongly brought up environmental risk through her writing on Silent Spring in 1962. She highlighted the environmental risk of commonly used insecticides.

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The Population Bomb: Book by Paul R. Ehrlich

climate one

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THE POPULATION BOMB, 50 YEARS LATER: A CONVERSATION WITH PAUL EHRLICH

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Corporate Net Zero Pleasures Ambitious (Climate One, 2022)

This program was recorded at Stanford University

So in addition, there was a writing by Paul Ehrlich, The Population Bomb in 1968. He warned of the dangers of overpopulation, mass starvation, societal problems, and environmental deterioration, as we reviewed in the first week of our lectures. At that time, the book was criticized for projecting a darker picture. And Think of it like where we are right now what kind of problems you are facing? I have given you the link to this particular talk you can, if you are interested, you can see it further.


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The Cuyahoga River Fire, 1969



June 29, 1969



Fire on the Cuyahoga River



In 1969, the Cuyahoga River in Ohio becomes so polluted that it catches on fire. The fire helped spur an avalanche of water pollution control activities such as the Clean Water Act and the Great Lakes Water Quality Agreement. By bringing national attention to water pollution issues, the Cuyahoga River fire was one of the events that led to the creation of the federal Environmental Protection Agency and the Ohio Environmental Protection Agency.

[Read more about the Cuyahoga River fire](#)

(epa, Cleveland Press Collection, 2022)



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Then, there was a fire incident on the Cuyahoga River in Ohio, The river in Ohio became so polluted that it caught fire, and the fire shot an avalanche of falling water pollution control activities such as the Clean Water Act and the Great Lakes Water Quality Agreement was aligned with the entire process.

So this led to increasing concerns in the USA result of that was the formation of the US National Environmental Policy Act. NEPA of 1969. NEPA was the first major environmental law in the USA and is often referred to as the Magna Carta as a key document of the US federal environmental laws.

So, NEPA was the first legislation that required EIA. So it was, in this document, the legislative document you find EIA. EIA in the USA became a reference point for learning for other countries based on its experiences and developments of the process, everyone was watching them.

You may also know that any legislation also has the challenge of falling into a range of lawsuits, litigation based on its functions and interpretation, because of this case series of litigation falling NEPA's, so there were a lot of court cases, many other countries were careful about creating law and implementing it related with environment.

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Legislative History- USA

Bill S1075

- In February 1969, Bill S1075 was introduced in the Senate; it proposed a programme of federally funded ecological research and the establishment of a CEQ

HR6750

- A similar bill, HR6750, introduced in the House of Representatives, proposed the formation of a CEQ and a brief statement on National Environmental Policy

(Glasson, J., & Therivel, R., Routledge, 2019, Pg. 33)

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So following several proposals, like when all this was happening, there were several proposals were made the formation of Council on Environmental Quality happened and was established as a high-level committee. The National Environmental Policy Act NEPA was a form of unified environmental policy. This came into existence in February 1969 through a series of bills, you can see the series of bills here.

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Legislative History- USA

Fundamental right to assurance of healthful environment

- A proposed statement **'each person has a fundamental and inalienable right to a healthful environment'**

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- Later statement in §101 (c) that **'each person should enjoy a healthful environment'**

(Glasson, J., & Therivel, R., Routledge, 2019, Pg. 33)


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There were a series of discussions also to declaring a National Environmental Policy which is NEPA, they proposed the statement that the attention to statement that each person has a fundamental and inalienable right to a healthful environment, which would put environmental health as the fundamental right, it was later. So first, they claimed it to be fundamental, then later, it was slightly diluted by saying that each person should enjoy a healthful environment.

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Legislative History- USA

- **'Finding'** proposed to be reviewed by those responsible for environmental protection



- **'Detailed Assessment'** subject of external review and challenge;
- Public availability of the detailed statements

(Glasson, J., & Therivel, R., Routledge, 2019, Pg. 33)

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In the initial form of the proposal. It was also seen that it is required that the proponent provide the findings, the word findings was used, which would be further reviewed by the environmental protection body, reviewed by the Environmental Protection body by a proponent here remains the one who is proposing the development activity, we refer to them as proponent. The literature suggests that this innate had intended to weaken the bills, the bill which was being processed by requiring only a detailed statement.

So instead, a detailed assessment was required. Rather, it became much stronger. This statement was required to be evaluated by the external reviewer. So earlier it was in by the internal agency, but then it became an external reviewer, and could also be challenged, meaning can be taken to court as well. So it would be reviewed by the external review, as well as it can be challenged. It also required that the detailed statement be made available to the public. So the entire information should be shared with the public.

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Legislative History- USA

NEPA became operational on 1 January 1970

(Glasson, J., & Therivel, R., Routledge, 2019, Pg. 33)

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With all these discussions, dilutions, and strengthening NEPA became operational on 1st January 1970.

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United States Environmental Protection Agency

Legislative History

What is the National Environmental Policy Act?

The National Environmental Policy Act (NEPA) was signed into law on January 1, 1970. NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. The range of actions covered by NEPA is broad and includes:

- making decisions on permit applications,
- adopting federal land management actions, and
- constructing highways and other publicly-owned facilities.

Using the NEPA process, agencies evaluate the environmental and related social and economic effects of their proposed actions. Agencies also provide opportunities for public review and comment on those evaluations.

On this page:

- [What does NEPA require?](#)
- [How do federal agencies carry out the NEPA requirements?](#)

Link: <https://www.epa.gov/nea/what-national-environmental-policy-act>

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NEPA GOV NATIONAL ENVIRONMENTAL POLICY ACT

NEPA, 1969

Laws

National Environmental Policy Act of 1969

Public Law 91-191, 84 Stat. 1073, 16 USC 4321-4342, 44 USC 3601-3607, January 1, 1970. As amended by Public Law 96-480, 110 Stat. 2011, 16 USC 4321-4342, 44 USC 3601-3607, October 2, 1978. As amended by Public Law 101-508, 114 Stat. 1654, 16 USC 4321-4342, 44 USC 3601-3607, October 15, 1996. As amended by Public Law 104-102, 110 Stat. 512, 16 USC 4321-4342, 44 USC 3601-3607, August 5, 1996. As amended by Public Law 104-172, 110 Stat. 1861, 16 USC 4321-4342, 44 USC 3601-3607, October 13, 1996. As amended by Public Law 106-396, 118 Stat. 1418, 16 USC 4321-4342, 44 USC 3601-3607, December 12, 2004. As amended by Public Law 108-281, 118 Stat. 801, 16 USC 4321-4342, 44 USC 3601-3607, September 15, 2004. As amended by Public Law 108-281, 118 Stat. 801, 16 USC 4321-4342, 44 USC 3601-3607, September 15, 2004. As amended by Public Law 108-281, 118 Stat. 801, 16 USC 4321-4342, 44 USC 3601-3607, September 15, 2004.

Environmental Quality Improvement Act of 1970

Public Law 91-224, 84 Stat. 1417, 16 USC 1501-1507, 44 USC 3601-3607, October 2, 1970. As amended by Public Law 96-480, 110 Stat. 2011, 16 USC 1501-1507, 44 USC 3601-3607, October 2, 1978. As amended by Public Law 101-508, 114 Stat. 1654, 16 USC 1501-1507, 44 USC 3601-3607, October 15, 1996. As amended by Public Law 104-102, 110 Stat. 512, 16 USC 1501-1507, 44 USC 3601-3607, August 5, 1996. As amended by Public Law 104-172, 110 Stat. 1861, 16 USC 1501-1507, 44 USC 3601-3607, October 13, 1996. As amended by Public Law 106-396, 118 Stat. 1418, 16 USC 1501-1507, 44 USC 3601-3607, December 12, 2004. As amended by Public Law 108-281, 118 Stat. 801, 16 USC 1501-1507, 44 USC 3601-3607, September 15, 2004. As amended by Public Law 108-281, 118 Stat. 801, 16 USC 1501-1507, 44 USC 3601-3607, September 15, 2004.

Clean Air Act, Section 309

Public Law 91-204, 84 Stat. 813, 42 USC 1752a, 42 USC 1752a-1752a-10, 42 USC 1752a-1752a-11, 42 USC 1752a-1752a-12, 42 USC 1752a-1752a-13, 42 USC 1752a-1752a-14, 42 USC 1752a-1752a-15, 42 USC 1752a-1752a-16, 42 USC 1752a-1752a-17, 42 USC 1752a-1752a-18, 42 USC 1752a-1752a-19, 42 USC 1752a-1752a-20, 42 USC 1752a-1752a-21, 42 USC 1752a-1752a-22, 42 USC 1752a-1752a-23, 42 USC 1752a-1752a-24, 42 USC 1752a-1752a-25, 42 USC 1752a-1752a-26, 42 USC 1752a-1752a-27, 42 USC 1752a-1752a-28, 42 USC 1752a-1752a-29, 42 USC 1752a-1752a-30, 42 USC 1752a-1752a-31, 42 USC 1752a-1752a-32, 42 USC 1752a-1752a-33, 42 USC 1752a-1752a-34, 42 USC 1752a-1752a-35, 42 USC 1752a-1752a-36, 42 USC 1752a-1752a-37, 42 USC 1752a-1752a-38, 42 USC 1752a-1752a-39, 42 USC 1752a-1752a-40, 42 USC 1752a-1752a-41, 42 USC 1752a-1752a-42, 42 USC 1752a-1752a-43, 42 USC 1752a-1752a-44, 42 USC 1752a-1752a-45, 42 USC 1752a-1752a-46, 42 USC 1752a-1752a-47, 42 USC 1752a-1752a-48, 42 USC 1752a-1752a-49, 42 USC 1752a-1752a-50, 42 USC 1752a-1752a-51, 42 USC 1752a-1752a-52, 42 USC 1752a-1752a-53, 42 USC 1752a-1752a-54, 42 USC 1752a-1752a-55, 42 USC 1752a-1752a-56, 42 USC 1752a-1752a-57, 42 USC 1752a-1752a-58, 42 USC 1752a-1752a-59, 42 USC 1752a-1752a-60, 42 USC 1752a-1752a-61, 42 USC 1752a-1752a-62, 42 USC 1752a-1752a-63, 42 USC 1752a-1752a-64, 42 USC 1752a-1752a-65, 42 USC 1752a-1752a-66, 42 USC 1752a-1752a-67, 42 USC 1752a-1752a-68, 42 USC 1752a-1752a-69, 42 USC 1752a-1752a-70, 42 USC 1752a-1752a-71, 42 USC 1752a-1752a-72, 42 USC 1752a-1752a-73, 42 USC 1752a-1752a-74, 42 USC 1752a-1752a-75, 42 USC 1752a-1752a-76, 42 USC 1752a-1752a-77, 42 USC 1752a-1752a-78, 42 USC 1752a-1752a-79, 42 USC 1752a-1752a-80, 42 USC 1752a-1752a-81, 42 USC 1752a-1752a-82, 42 USC 1752a-1752a-83, 42 USC 1752a-1752a-84, 42 USC 1752a-1752a-85, 42 USC 1752a-1752a-86, 42 USC 1752a-1752a-87, 42 USC 1752a-1752a-88, 42 USC 1752a-1752a-89, 42 USC 1752a-1752a-90, 42 USC 1752a-1752a-91, 42 USC 1752a-1752a-92, 42 USC 1752a-1752a-93, 42 USC 1752a-1752a-94, 42 USC 1752a-1752a-95, 42 USC 1752a-1752a-96, 42 USC 1752a-1752a-97, 42 USC 1752a-1752a-98, 42 USC 1752a-1752a-99, 42 USC 1752a-1752a-100.

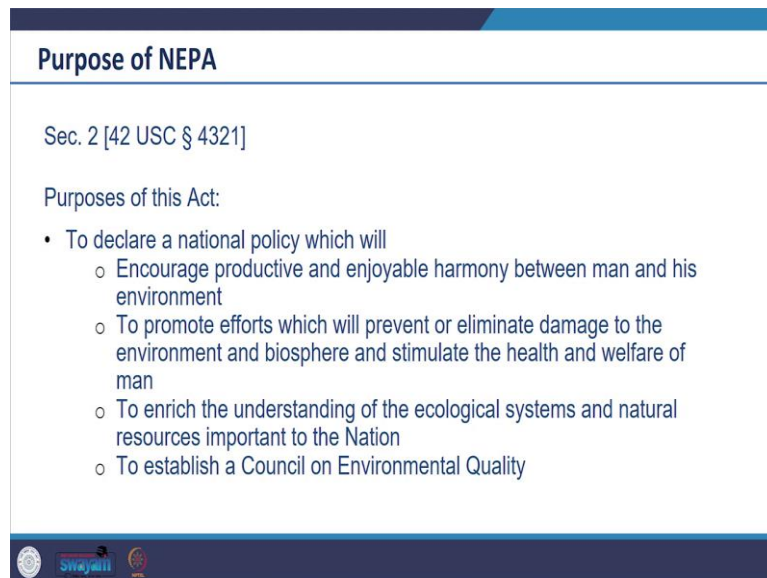
Link to Laws and Regulations: <https://ceq.doe.gov/laws-regulations/laws.html>

Link to NEPA of 1969: https://www.energy.gov/sites/default/files/nea/pub/nea_documents/RedDontReq-NEPA.pdf

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So looking at the key points of NEPA, what we were coming up here with, that the NEPA requires federal agencies to assess the environmental effects of their proposed actions before making decisions, the range of actions are covered by NEPA, key to our concerns, there are a range of actions, but key to our concern is making decisions or permit applications that means allowing them giving permit and adopting federal land management actions. So, how the land should be managed? So, the link is provided to you in this you can see here to the official website. So, you can see all those provisions here.

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Purpose of NEPA

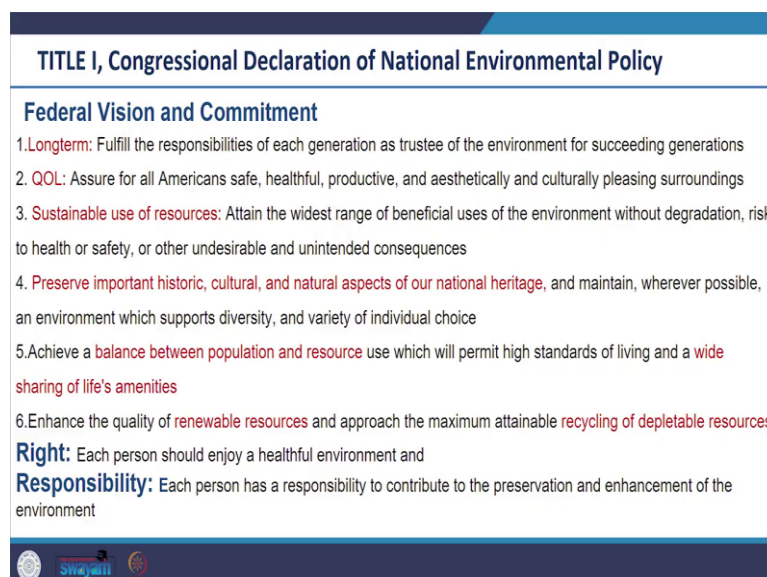
Sec. 2 [42 USC § 4321]

Purposes of this Act:

- To declare a national policy which will
 - Encourage productive and enjoyable harmony between man and his environment
 - To promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man
 - To enrich the understanding of the ecological systems and natural resources important to the Nation
 - To establish a Council on Environmental Quality

The purpose of this act was to declare a national policy, which would like to encourage productive and enjoyable harmony between man and his environment. So, that balance was looked up to and to promote efforts that will prevent or eliminate damage to the environment and biosphere stimulate the health and welfare of man enrich the understanding of ecological systems and natural resources important to the nation, and establish the Council of Environmental Quality.

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TITLE I, Congressional Declaration of National Environmental Policy

Federal Vision and Commitment

1. **Longterm:** Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations
2. **QOL:** Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings
3. **Sustainable use of resources:** Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences
4. **Preserve important historic, cultural, and natural aspects of our national heritage,** and maintain, wherever possible, an environment which supports diversity, and variety of individual choice
5. Achieve a **balance between population and resource** use which will permit high standards of living and a **wide sharing of life's amenities**
6. Enhance the quality of **renewable resources** and approach the maximum attainable **recycling of depletable resources**

Right: Each person should enjoy a healthful environment and

Responsibility: Each person has a responsibility to contribute to the preservation and enhancement of the environment

So you see what was the target and what they were trying to promote, and then how it was also leading to like better understanding as well as the creation of a body that will take care of this. So looking at the federal vision behind it, the commitment behind this was long-term, that is to fulfill the responsibility of each generation as trustees of the environment for succeeding generations. So the idea and vision were long term, plus it was of assuring the quality of life, ensuring all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

Then it is the vision was about the sustainable use of resources like were used. Likewise, you see, there was the importance given to the preservation of important historic cultural and natural aspects of the national heritage. As well as you see there was a target to achieve a balance between population and resources as well as enhance the quality of renewable resources and approach maximum attainable recycling of depletable resources.

And you will also see that it talked about in part C, it talked about right. At the same time, it also talked about responsibility. And right was also Congress here recognized that each person, so it was not just the government, but the right was also for individual, citizen person should enjoy a healthful environment at the same time not only having rights, but they also had a responsibility that each person has a responsibility to contribute to the preservation and enhancement of the environment.

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What does NEPA require?

Title I of NEPA contains a Declaration of National Environmental Policy. This policy requires the federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony.

Section 102 in Title I of the Act requires federal agencies to incorporate environmental considerations in their planning and decision-making through a systematic interdisciplinary approach. Specifically, all federal agencies are to prepare detailed statements assessing the environmental impact of and alternatives to major federal actions significantly affecting the environment. These statements are commonly referred to as Environmental Impact Statements (EIS) and Environmental Assessments (EA).

Title II of NEPA established the President's [Council on Environmental Quality \(CEQ\)](#) to oversee NEPA implementation. The duties of CEQ include:

- Ensuring that federal agencies meet their obligations under NEPA
- Overseeing federal agency implementation of the environmental impact assessment process
- Issuing regulations and other guidance to federal agencies regarding NEPA compliance.

Learn more about the [National Environmental Policy Act](#).

(Epa, 2022)

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So looking at what NEPA requires, and what you need to do so, title One NEPA, there are two titles this title one of NEPA contains the declaration of national environmental policy. This policy requires the federal government, you may see here the federal government to use all practicable means, so all the practicable, which are, which one can implement to create and maintain conditions under which man and nature can exist in productive harmony.

So, you may note that it makes the federal government, the central government responsible for creating and maintaining conditions under which man and nature can exist in productive harmony. So and then also press, it takes care of the requirement of the future generation of Americans.

It also made them responsible for adapting all practical means. And by this, it was important that everything was consistent with the other essential considerations of national policy. It should be consistent so that the negative environmental impact can be reduced and not only to reduce the negative impact but also preserve and enhance the environment through federal plans and programs.

So, they had to make policies consistent for the reduction of the negative impact, as well as they were supposed to take other steps to preserve and enhance the environment through plans and programs. So NEPA has two parts set as titles, so title one sets national policy on the protection and restoration of Environmental Quality.

Title two sets up a member Council of Environmental Quality, so there is a set of laws and then the other is the body that will take care of it. So the Council of Environmental Quality, CEQ would review environmental programs and progress and would advise Presidents on these matters. And then the Presidents would be required to submit an annual environmental quality report to Congress.

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TITLE I, Congressional Declaration of National Environmental Policy

Sec. 102 [42 USC § 4332]. The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, and (2) all agencies of the Federal Government shall --

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(NEPA, 1969)

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So, we see that in section one naught two requirements are procedural. So it talks about the process that has to be followed and you will see that the federal agencies are required to undertake a very systematic interdisciplinary approach, identify and develop methods and procedures. So you can see here what all the details statement should contain.

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Detailed Statements on

- (i) The environmental impact of the proposed action
- (ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented
- (iii) Alternatives to the proposed action
- (iv) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity
- (v) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented

(Sec. 102 [42 USC § 4332]- (C) The National Environmental Policy Act of 1969, as amended)



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So what all should be there like you can see here in the image, the detailed statement should provide the environmental impact of the proposed action, it should identify adverse impact environmental effects, it should provide alternatives as well, so the proposed action, and it should indicate the relationship between short term users and the long term productivity, plus decision on implementation of any irreversible and early tribal commitments. So what decision has been made and which are of what nature and in the proposal?

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TITLE I, Congressional Declaration of National Environmental Policy

Sec. 103 [42 USC § 4333]. All agencies of the Federal Government shall review their present statutory authority, administrative regulations, and current policies and procedures for the purpose of determining whether there are any deficiencies or inconsistencies therein which prohibit full compliance with the purposes and provisions of this Act and shall propose to the President not later than July 1, 1971, such measures as may be necessary to bring their authority and policies into conformity with the intent, purposes, and procedures set forth in this Act.

Sec. 102 [42 USC § 4333]- The National Environmental Policy Act of 1969, as amended



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Sections one through three require federal agencies to review their regulations and procedures to identify any deficiencies, or inconsistencies, As we said, they were responsible for identifying this so they would be taking care of it and this section gives those instructions here.

So the NEPA is generally worded law. So it is all in words, and it depends considerably on the interpretation. So to assess the CEQ-prepared guidelines for assisting in interpretation, CEQ would come up with all the guidelines and standards.

So, a lot of strengthening of the act has happened, falling court decisions. So we see that because it was open for interpretation. As soon as it was implemented a lot of legal litigation came into the picture and a court ruling came and that somehow allowed to strengthen the EIA process.

So, the guide of court cases came was like, one of the studies, it showed that some challenged proponents, so the proponents of the development projects or agencies decided to not prepare EIA. So like how were they deciding when to prepare EIA and when not to prepare EIA which meant interpretation of whether the project was major or by government or related project activities that had insignificant or significant environmental impact? So, how do they come to that judgment? So that kind of court case came in.

Some of the objectives were related to the quality of EIA. So they were also questioning the quality of EIA, which raised concerns about the completeness of the assessments if it covered all ranges. Like was it adequate? Did it address all the concerns of the environment or not? So that kind of court case also came up, and whether the alternatives were considered or not by the proponents? So even the adequacy of the report was also, of the assessment was also challenged.

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The image shows a document page with a blue header and footer. The main title is 'Calvert Cliffs' Coordinating Committee, Inc., et al., Petitioners, v. United States Atomic Energy Commission and United States of America, Respondents'. Below the title is a table of metadata including Title, Party, Region, Type of document, Date of text, Date source, Court name, Justices, Reference number, ECOLEX subjects, and Abstract. The abstract text is partially visible, starting with 'In 1969 the United States Congress passed, and President Nixon signed, the National Environmental Policy Act (NEPA) to protect natural resources in the United States. Section 101 NEPA requires the Federal Government to use "all practicable means and measures" to protect the environment, and to consider environmental costs and benefits in Government decisions. Calvert Cliffs Coordinating Committee Calvert Cliffs brought this action against the Atomic Energy Commission, alleging that its newly adopted procedural rules failed to satisfy the demands of NEPA that this Commission give consideration to environmental factors. The Court decided that the Atomic Energy Commission's procedural rules did not comply with Congressional policy enunciated in NEPA. The case was remanded for further rule-making consistent with the Court's opinion. NEPA made environmental protection a part of the mandate of every Federal agency and department, Federal agencies and departments had to consider environmental issues just as they considered other matters within their mandate. The Court emphasized that Section 102 (2) (A) and (B) required a balancing process between environmental amenities and economic and technical considerations. Section 102 (2) (C) required responsible officials to prepare a concise statement covering the environmental impact of major Federal projects, and to develop appropriate alternatives. These procedural duties had to be performed to the fullest extent possible. Section 102 mandated a particular sort of careful and informed decision-making process and created judicially enforceable duties. There was a requirement for agencies to "use all practicable means consistent with other essential considerations" set forth for substantial duties under Section 101. This would probably not allow reviewing courts to reverse a substantial decision unless it was shown that the actual balance of costs and benefits was arbitrary. However, if a decision was reached procedurally without individualized consideration and balancing of environmental factors, it was the Court's responsibility to ensure. In this case, the Court had to review the Atomic Energy Commission's rule governing the consideration of environmental values. The Commission's rule allowed its NEPA responsibilities to be carried out in lots subject the hearing process, and the environmental records to incorporate the application through the Commission's review process when no party to a proceeding raised any environmental issue. The Court decided that these rules made a mockery of NEPA's procedural requirements. Environmental factors had to be considered through the Agency review processes, and not merely accompany other records through the Federal bureaucracy. In unbalanced hearings the Atomic Energy and Licensing Board needed not necessarily to go over the same ground covered in its staff's statements, but it had to determine if the review by the staff had been adequate.

Available in: UNEP/WHO/Dutch Government Joint Project on Environmental Law in Africa. Compendium of Judicial Decisions on Matters Related to Environment. National Decisions, Volume 1, Page 191

So, as you can see here in the court case of 1971 of this is the case of Calvert Cliffs, the Coordinating Committee brought this action against the Atomic Energy Commission. So it was the project of the Atomic Energy Commission. This Calvert Cliffs charged Atomic Energy Commission, that its recently adopted procedural rules, what they were adopting, failed to satisfy the demands of NEPA, it was not as per the law that this Commission considered environmental factors.

So, it was challenging the process, the court decided that the Atomic Energy Commission's procedure rules did not comply with Congressional policies spoken in NEPA, so it was not aligning and it was inadequate. So the court did come to that ruling.

Some cases charged that agencies' decision, one of the early court decisions guided the review of the decision. So like EIA reports, and EIA assessments, the decision was made in favor or against, where there was a case, there were cases which were challenging the decisions.

So, here the court noted that the court's function is to ensure the agency has taken a hard look. So it has looked well into the thing. Whereas the court is not going to supplement their decision but only going to check whether they have considered it substantially or not.

So, many initial litigation. These are the kinds of litigation court cases that the US after the implementation of NEPA, they were facing so many initial litigation and court decisions that helped to improve the entire system. So there were also delays and execution of the project, making the project unfeasible.

So, you think of the period it would take for a court case to resolve and the project to see the light. So there were also declarations of protected areas. Some projects did not work, and then the areas were protected, such as National Park and wildlife areas.

As suggested due to many court cases at the beginning of the EIA system, many countries had their learning about the processes, challenges, and possibilities, so they were learning from the case of the US. So, later many guidelines were set up to ease the interpretation.

So within the US system, various other guidelines were set up to easily interpret help others to interpret well, and then implement. Well, further efforts were made to reduce paperwork also and reduce delays targeting significant environmental issues only, and look at the whole alternatives as well.

So, USA policy has led to the formation of the EIA process and legal system and also reduced the cost and also by improving the system they could do this, number of EIA reports has considerably improved, the design of projects has also improved. So the targets of overall having a sustainable development was like really, the projects were much more environmentally aligned.

(Refer Slide Time: 20:33)

The slide is titled "EIA systems in USA" and features a blue header and footer. The main content is a bulleted list of three items: "State-level EIA systems in USA (in addition to NEPA)", "City Level EIA systems in USA - New York and San Francisco", and "California Environmental Quality Act (CEQA) of 1973". At the bottom right of the slide, there is a citation: "(Glasson, J., & Therivel, R., Routledge, 2019, Pg. 39)". The footer also contains logos for "Swayam" and "60".

So many, we also see that many state-level EIA systems have been established in the USA, in addition to NEPA, so, every state, most of the states has its own EIA system. As they require EIA for state actions, actions that require state funding or permissions, and other projects, in particularly sensitive areas, every state can have its sensitive areas. So some cities, such as New York and San Francisco also have their own EIA system. So that also, it is interesting to see that cities also have.

It is particularly like it is considered one of the exemplary is the California Environmental Quality Act, which like provides it have exemplary it is considered exemplary for its scope, and procedure requirements that ensure state and local agencies engagement.

So, they work together to adapt feasible mitigation measures, they come together and then see how the environmental impact can be mitigated, and mitigated and alternatives can also be reviewed. So, they have also added greenhouse gas emissions to the list of environmental impacts for analysis under the California Environmental Quality Act.

So, the strength of this system and its evolution in the USA includes the early inclusion of EIA in the project planning. So, we see that they engage in the EIA process in the early stage and it is said to be more comprehensive planning, there have been cases of changes in locations of the project and there have been also cancellations of projects.

So, there has been the avoidance of the EIA process like a reconsideration of, like if you look at the negative points, there has been a reconsideration of socio-economic and environmental justice, then also cumulative impact has been not very well implemented. Monitoring and auditing and the relationship between EIA and environmental management systems still stand some right, but some of the literature still stands weak.

So, there have been also recently, in the recent past, there has been radical change with changes in the government with a reduction in the environmental protection measures, and clean energy programs and then

pulling out of the Paris Climate Change Agreement and loosening of regulations on toxic air pollution and wildlife protection and so on. So, they had been changes in the recent past.

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Acts, Guidelines and Activities Followed From Earth Day Celebration

April 22, 1970: First Earth Day
The first Earth Day was held on April 22, 1970. It was a nationwide demonstration in support of environmental protection. Over 100 million Americans participated in the day's activities, which included clean-ups, tree-planting, and other environmental projects.

December 31, 1970: Clean Air Act of 1970
Congress passed the Clean Air Act of 1970, which set national air quality standards and required the EPA to regulate air pollution. The act was a landmark piece of legislation that led to the development of the Clean Air Act of 1990.

January 13, 1971: Lead-Based Paint Restriction
The Toxic Substances Control Act (TSCA) was passed, which gave the EPA the authority to regulate hazardous chemicals. This led to the restriction of lead-based paint in homes and on toys and furniture.

April 30, 1971: EPA Takes National Action on Air Quality
The EPA issued its first air quality criteria for particulate matter, carbon monoxide, nitrogen dioxide, and hydrocarbons. This was the first step toward the regulation of air quality set by the Clean Air Act.

October 16, 1971: EPA Defines Air Pollution Danger Levels
The EPA defined the levels of the most common air pollutants, the levels at which significant harm to the health of persons might occur.

December 31, 1971: Vehicle Fuel Economy Testing
The EPA began testing the fuel economy of cars, trucks, and other vehicles. The first step toward reducing our dependence on oil and the gas mileage of our vehicles.

April 15, 1972: Great Lakes Water Quality Agreement
The U.S. and Canada agree to clean up the Great Lakes, which contain 65 percent of America's fresh water and supply drinking water to approximately 60 million people.

May 23, 1972: EPA and Russian Scientists Join Forces
The U.S. and the U.S.S.R. sign a agreement on taking the Joint Committee on Environmental Protection. The committee went on to research carboniferous production, air and water pollution control, and pollution abatement techniques in areas with forest growth.

October 23, 1972: Ocean Dumping Act
Congress enacts the Marine Protection, Research, and Assessment Act, or Ocean Dumping Act, to reduce ocean waste pollution. With this act, EPA had decided to control, many of them for chemical dumping.

<https://www.epa.gov/history/milestones-epa-and-environmental-history>

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So, many acts, guidelines, and activities followed like after NEPA, we would see that many of activities followed a long list you would see like Earth Day celebration, the Clean Air Act, lead-based paint restrictions, defining of air pollution danger levels regulations on vehicles, protection of lakes, and many more changes came as per the requirements and technology development, you may follow the timeline the link is also provided for your reference here.

So, now EIA has been implemented in many countries. So, since NEPA now, there are nearly 180 countries that have EIA systems. So that is a large number we are looking and we can see how it is being adopted in various contexts.

EIA systems Worldwide

Country	Year of EIA Act	Country	Year of EIA Act	Country	Year of EIA Act	Country	Year of EIA Act	Country	Year of EIA Act	Country	Year of EIA Act
Western Europe		Ghana	2011	Hongkong	1994	Moldova	1996	Romania	1995	South Africa	1999
Austria	1993, 2000	Iraq	1996-2000	Kenya	2000	Montenegro	2005	Poland	1990-2008	Russia	1999
Belgium	1985-1992	Israel	1982, 2003	Kenya	1997 (partial)	Peru	2009	Romania	1995	Saudi Arabia	2000 (partial)
Denmark	1989, 1999	Jordan	1989	Kenya	2000-2003	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Finland	1984, 2004	Kenya	2000-2003	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
France	1976	Kuwait	1990, 1995-1996	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Germany	1990, 2005-2006	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Greece	1988, 2002	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Ireland	2000, 2005	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Italy	1989-1994	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Luxembourg	1994	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Netherlands	1985, 2002	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Norway	1990	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Portugal	1987	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Spain	1984, 2008	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Sweden	1987-1991	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Switzerland	1985	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
United Kingdom	1988	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Central and Eastern Europe		Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Palestinian Auth.	2000	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Albania	2004, 2013	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Belarus	1992	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Bosnia & Herz.	2000, 2012	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Bulgaria	2002, 2009	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Croatia	2006	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Cyprus	1995	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Czech Rep.	1991, 2001	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Estonia	1993, 2005	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Hungary	2005	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Kosovo	2009	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Latvia	2004	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Lithuania	1994-2005	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Malta	2007, 2013	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
Macedonia	2005	Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
		Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)
		Lebanon	2002, 2012	Kenya	1997	Romania	1995	Russia	1999	Saudi Arabia	2000 (partial)

(Glasson, J., & Thriver, R., Routledge, 2019, Pg. 44-45)

Factors Influencing Form of EIA systems

So, looking at the current status of EIA worldwide, in the image table, you can see the EIA systems worldwide here. So, now looking at the factors that influence the structure of EIA.

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Contextual Factors influencing EIA System

- Political system
- Environmental status
- International convention
- Civil rights
- Culture of public participation
- Influence the EIA system in each country

(Glasson, J., & Therivel, R., Routledge, 2019, Pg. 43)

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So, the literature identifies contextual factors, something that is specific to the place we are talking about such as political systems. So, regarding how the EIA is we cannot generalize how he is, will depend a lot on the political system, and environmental status of that particular place.

International Convention is what they have signed to, civil rights, the culture of public participation, so even if the in the EIA how much the public participation would also depend upon how much public is aware, how engaged it is, and how much even the government opens up. So, all these infants have the EIA system in each country.

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Key Actors and Capacities influencing EIA System

- Parliament
- Sector authority
- Donors - European Bank for Reconstruction and Development ; UK Overseas Development Administration; DFID , UNEP and World Bank
- Business
- Human resource
- Community Based Organisations / Leadership

(Glasson, J., & Therivel, R., Routledge, 2019, Pg. 43)

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So, we also see actors and the capacity at different levels influence the form of EIA in a country such as rulemaking bodies, the parliaments, the sector authority, different, different sector energy, and infrastructure. So we see that sector authority also, how they, what rules they lay out would also influence the EIA.

Then the donors, some of the international funding, say funding agencies have set up EIA guidelines including the European Bank of Reconstruction and Development, UK Overseas Development Administration, DFID, UNEP, and World Bank, so they have all set the guidelines for EIA, so which makes people applying for funding to adopt the format.

A business that can influence also has a role to play experience in EIA and human resources which is already there in the context and the civil society community-based organization their activities also play a role.

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Key Role of International Organizations

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ESPOO Convention, 1991

The Espoo (EIA) Convention sets out the obligations of Parties

- To assess the **environmental impact** of certain activities at an **early stage of planning**
- General obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse **environmental impact across boundaries.**



The Convention was adopted in 1991 and entered into force on 10 September 1997

(United Nations Economic Commission for Europe, 2022)

So looking at now, now looking at the key role of international organizations. So in Europe, the United Nations Economic Commission for Europe has been doing considerable work. One of the notable ones is in 1991 Convention on EIA in the trans boundary context Espoo convention, it is primarily to assess the negative environmental impact across borders. So it is till now we have been talking about the country context, but this convention, talking about infrastructure, which would affect different countries.

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International Bodies and EIA Procedures

- Espoo Convention 1991
- *Equator Principles*
- Environmental and social procedures by EBRD, the Asian Development Bank and the African Development Bank
- Performance Standards on Environmental and Social Sustainability (World Bank)

(Glasson, J., & Therivel, R., Routledge, 2019, Pg. 48)



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You will also find Equator Principles of private sector initiative, which provides EIA guidelines for financial institutions about funding decisions on major projects over a financial threshold of 10 million Dollars. By 2017, there were 92 signatories to Equator Principles in 37 countries. So international banks such as ABRD, the Asian Development Bank, African Development Bank have introduced environmental and social procedures. So you see that they have an influencing rule here.

An important one, that we will come across often in the course is the performance standards on environmental and social sustainability, introduced by the World Bank Group, through the International Finance Corporation IFC on which the Equator Principles are based and the World Bank's environmental and social standards are based.

So World Bank emphasizes so like moving EIA upstream, meaning taking it at the very initial level of the project, designing like having more effective public consultation, and then integrating EIA into the program, project programming and then learning from the implementation, learning from other cases, having a feedback loop, engaging with the private sectors, and especially defend their financials and project sponsors, and then looking at how the EIA's quality is.

So there is a lot of emphasis. We reviewed the development of EIA in the USA and across the world, EIA has become an important tool, but there is variation on how the EIA system exists in a context. There is a lot of support and push from the international agency.

(Refer Slide Time: 28:51)

Timeline of the Evolution Across Globe	
Pre-1970	Project review based on the technical/engineering and economic analysis.
Early/mid – 1970s	<ul style="list-style-type: none"> EIA introduced by NEPA in 1970 in US Basic principle: Guidelines, procedures including public participation requirement instituted Standard methodologies for impact analysis developed (e.g. matrix, checklist and network) Canada, Australia and New Zealand became the first countries to follow NEPA in 1973-1974 Major public inquiries help shape the process's development
Late 1970 and early 1980s	<ul style="list-style-type: none"> More formalized guidance Other industrial and developing countries introduced formal EIA or experimentally or adopted elements Use of EA by developing countries (Brazil, Philippines, China, Indonesia) Strategic Environment Assessment (SEA), risk analysis included in EA processes Greater emphasis on ecological modelling, prediction and evaluation methods Provision for public involvement Coordination of EA with land use planning processes

(UN EIA Training Resource Manual, 2002)

So looking at the timeline of evolution across the globe taken from the UN training manual, we see here that in the like, it is a little bit of a recap here. So early-mid in 1970 you see that EIA was introduced. And then it established basic principles, standards were coming in. And then you see that developed countries are working on it.

And then later in the 1970s and early 1980s, you see that more of the formalized, guidelines were developed and then other industries and developing countries introduced formal EIA in this particular period. Then you will see that there was also a coming of Strategic Environmental Assessment SCA, which we will learn about, and then the greater emphasis was on ecological modeling, prediction, and evaluation methods.

So we see that in this particular segment, methods were evolving. And then there was also emphasis and provision for public involvement and engagement and also coordination of environmental assessment with land use planning process also was emphasized here.

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Timeline of the Evolution Across Globe	
Mid 1980s to end of decade	<ul style="list-style-type: none"> In Europe, EC Directive on EIA establishes basic principle and procedural requirements for all member states Increasing efforts to address cumulative effects World Bank and other leading international aid agencies establish EA requirements Spread of EIA process in Asia
1990s	<ul style="list-style-type: none"> Requirement to consider trans-boundary effects under Espoo convention Increased use of GIS and other information technologies Sustainability principal and global issues receive increased attention. India also adopted the EIA formally Formulation of EA legislation by many developing countries. Rapid growth in EA training

(UN EIA Training Resource Manual, 2002)

Then we see in 1980 and end of that decade, we see that there were EC directors, and EAI established basic principles and procedural aspects. Then there were increasing efforts to address cumulative effects. So here

you see the cumulative effects, which we have spoken about in previous classes as well. And then the World Bank, it is important here, World Bank and other leading international agencies, aid agencies, they established EAI requirements. So that made a major shift that most of the countries started adopting it.

And this period it spread in Asia. So here we see that at the same time, our system was also formalized. 1990 onwards, we see that here, there is more development in the transboundary effects we are looking at the Espoo convention here increased use of GIS and other techniques we see here.

And the sustainability principles came here. India also adopted the EIA formally in this period, and the formation of EIA legislation happened in many developing countries. And the rapid growth of EIA training also took place, so part of which you are also like going through this training here.

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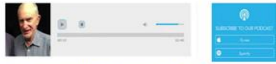
Summary

- 1 Reviewed the Evolution of EIA and Experience in USA and Understand its Scope, Limitation and Challenges
- 2 Described the Current Status of EIA Worldwide
- 3 Identified and Evaluated the Factors Influencing State / Format of EIA in Different Context
- 4 Explained the Key Role of International Organizations

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Suggested Watch and Read


THE POPULATION BOMB, 50 YEARS LATER: A CONVERSATION WITH PAUL EHRLICH



<https://www.climateone.org/audio/population-bomb-50-years-later-conversation-paul-ehrlich>

Comparative assessment of EIA systems in MENA countries: Challenges and prospects

https://www.researchgate.net/publication/222402683_Comparative_assessment_of_EIA_systems_in_MENA_countries_Challenges_and_prospects



Celebrating the Comeback of the Burning River, 1969-2019

<https://www.youtube.com/watch?v=18JpT61rX6A>



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<https://www.epa.gov/nepa/what-national-environmental-policy-act#:~:text=NEPA%20requires%20federal%20agencies%20to,federal%20land%20management%20actions%2C%20and>
- 6 Court case of Calvert Cliffs' Coordinating Committee, Inc. v. Atomic Energy Commission 1971
<https://www.informea.org/en/court-decision/calvert-cliffs%E2%80%99-coordinating-committee-inc-et-al-petitioners-v-united-states-atomic>





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 Please feel free to ask Questions. 

Let us know about any Concerns you have .

 Do share your Opinions, Experiences and Suggestions.

Looking forward to Interacting and  Co-learning with you in our discourse of EIA.





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So summarising today's session. So we reviewed the evolution of EIA and its experience in the USA and understood its scopes, limitations, and challenges. We describe the current status of EIA worldwide, we will try to identify and evaluate factors influencing state format, state, and format of EIA in different contexts and explain the key role of international organization.

So our coverage has been limited as for the scope of the subject, additional resources to read and watch are provided to you. These were the references for this particular class. Please feel free to ask questions. Let us know about any concerns you have, and do share your opinions, experiences, and suggestions looking forward to interacting and co-learning with you in our discourse of EIA. Thank you.