



Shifting Baselines in EIA - A Global Baseline Analysis

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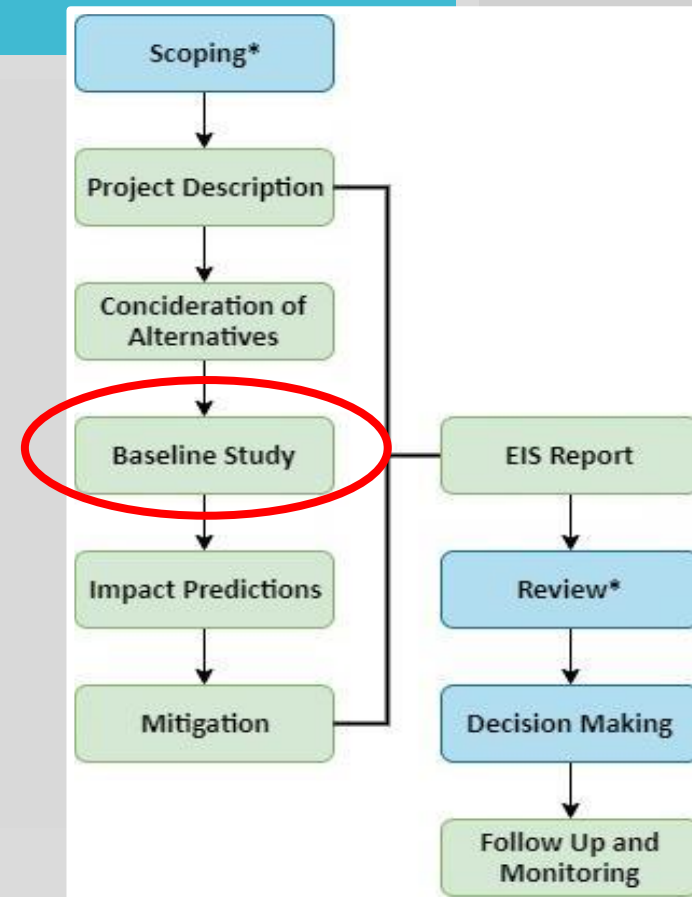


Baseline in EIA

- Collection of information that would help to assess the plans' impact on the environment
- “Description of the existing environment”
- Collection of existing data and sometimes a field survey

Main Deficiencies:

- No reference to past or future environmental processes
- No reference to cumulative and long-term environmental processes
- No seasonal variability
- No consideration of parallel or near by projects

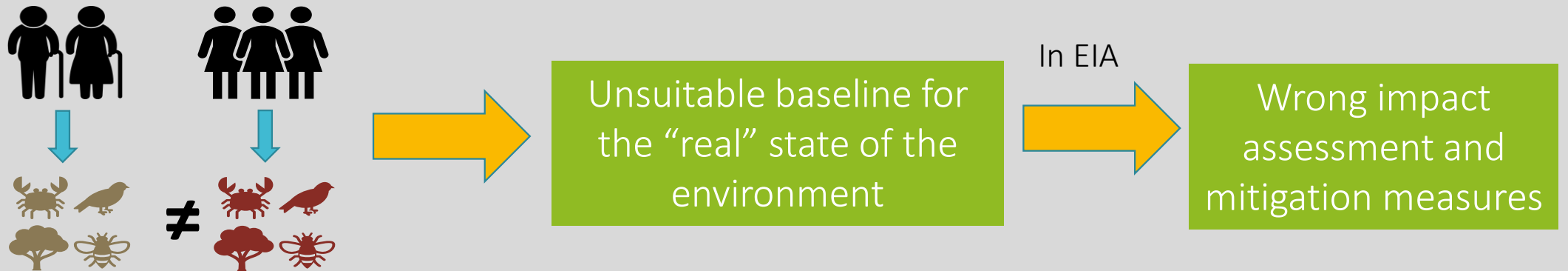




Shifting Baselines Syndrome

Pauly, D. (1995). Anecdotes and the shifting baseline syndrome of fisheries. *Trends in Ecology & Evolution*, 10(10), 430.

- Each generation is setting his perceptions of “natural” from his own experience as an **ecological baseline**
- The ecological baseline is used as a reference point for **ecological management decisions**



Hypothesis

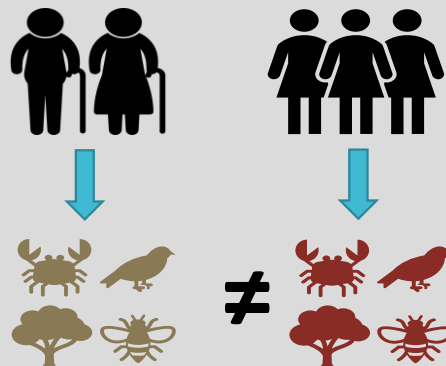
In EIA, a baseline that does not consider past and future environmental conditions, and a spatial scale beyond the planning' boundaries, will present low ecological quality

Motivation

What defines the baseline in EIA practice?



Defined by the **Guidelines**



Baseline



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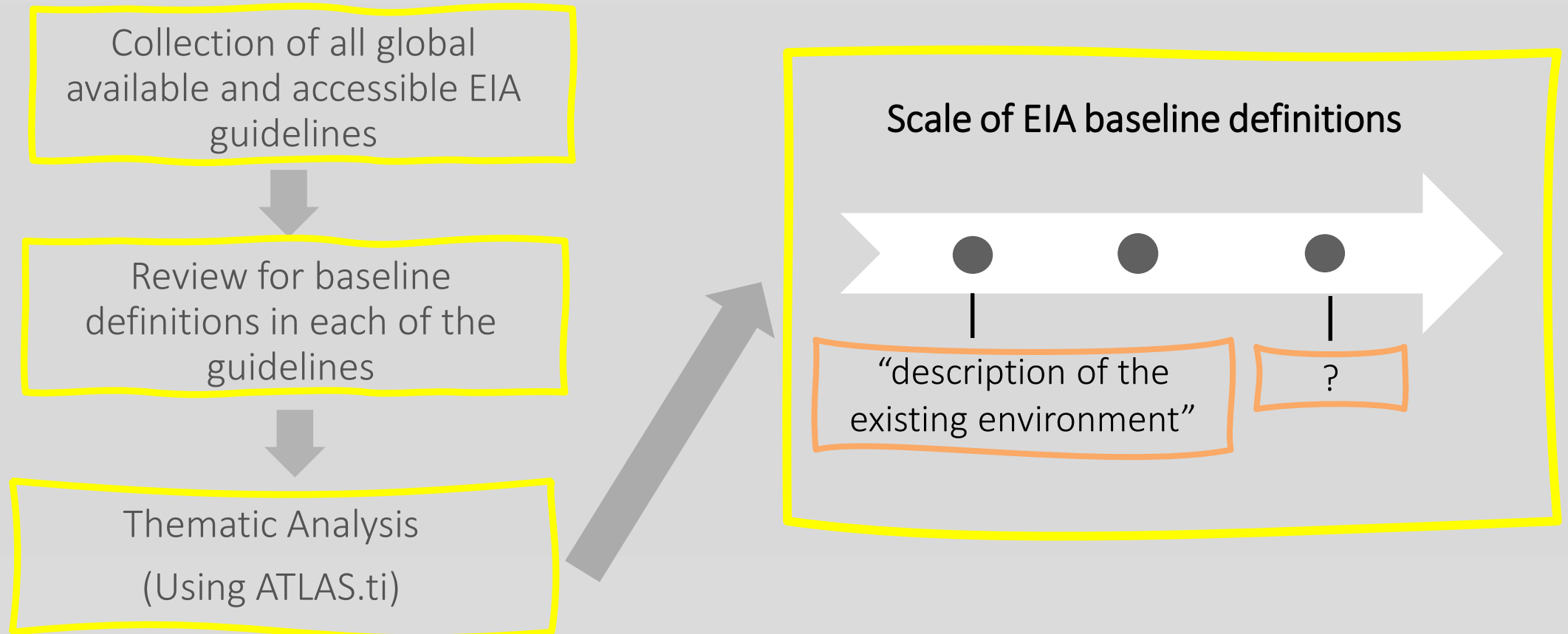
Baseline

Research Questions

How is the baseline defined by EIA guidelines globally?

1. What are the different baseline definitions in the field of EIA?
2. Which countries use the most extensive baseline practice in EIA and why?

Systematic review and analysis of worldwide EIA guidelines for baseline definitions



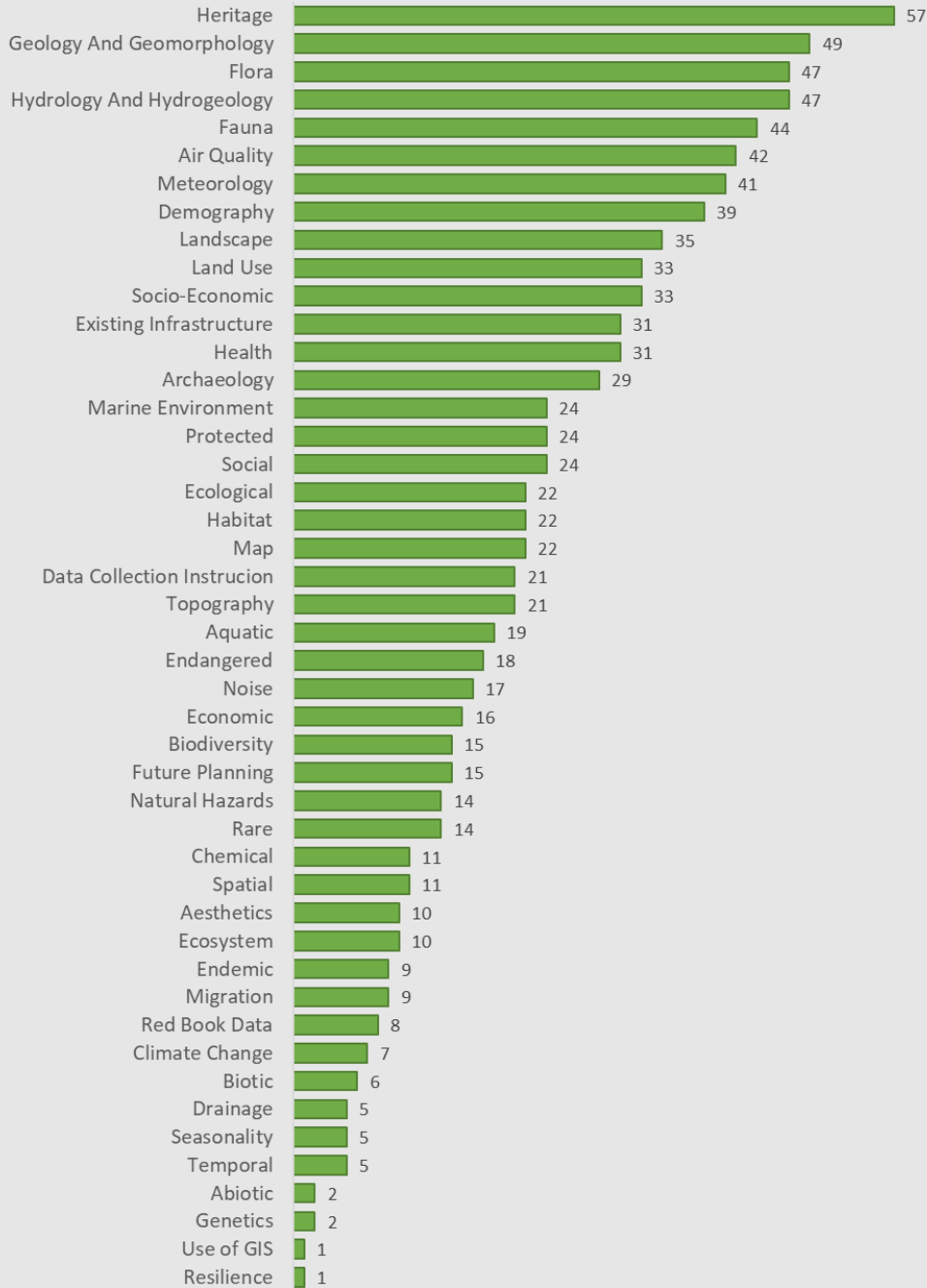
Results

- A total of 141 EIA guidelines were collected and reviewed

Examples of
baseline names:

Frequency	
47	Baseline
10	terms of reference
9	description of the environment
4	affected environment
3	existing state of the environment
3	initial state of the environment
3	initial state of the site
2	current state of the environment
2	description of the location
2	existing environmental conditions
2	receiving environment
1	base conditions
1	base scenario
1	characteristics of the receiving environment

Frequency in Baseline Guidelines



Thematic Analysis Results

- 46 themes were found in all guidelines
- The themes are the components of baseline definitions in EIA guidelines

Most Common

Heritage
 Geology and Geomorphology
 Flora
 Hydrology and Hydrogeology
 Fauna
 Air Quality
 Meteorology
 Demography
 Landscape
 Land Use
 Socio-Economic
 Existing Infrastructure
 Health

Least Common

Resilience
 Use of GIS
 Genetics
 Temporal scale
 Seasonality
 Drainage
 Climate Change
 Red Book Data
 Migration
 Endemic species

Heritage in EIA

Built Environment

Natural Environment

Artifact

(Jones & Slinn, 2008; Patiwael et al., 2018)

- Threatened by increasing pressures of development
- Crucial component of sustainable development
- Directive 85/337/EEC specifically mentions the impact on cultural heritage as one of the factors that should be assessed within an EIA
- EIA is one of the mechanisms to manage heritage values for the benefit of present and future generations

Is this the most important topic an EIA baseline should address ?

The least common topics as a benchmark for improvement

Least Common

Resilience
Use of GIS
Genetics
Temporal scale
Seasonality
Drainage
Climate Change
Red Book Data
Migration
Endemic species

Resilience: “resilience is a measure of the ability of a system to withstand stresses and shocks—its ability to persist in an uncertain world” (Perrings, 1998)

* According to Mahmoudi et al. (2018), resilience was announced as one of the major themes at the 16th IAIA conference held in 2016

Remote Sensing: easy, open-source, increases accuracy

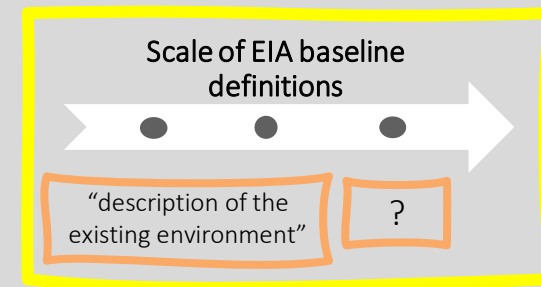
* Acknowledged as an important part of EIA data collection more than 20 (!) years ago

Critical issues for a successful EIA that are underrepresented in baseline data

Top 10 Countries in baseline score

Country	Baseline Score
Costa Rica	30
Guatemala	30
India	29
Cyprus	29
Nauru	28
Dominica	28
Myanmar	27
Turkey	26
Kyrgyzstan	26
Peru	25

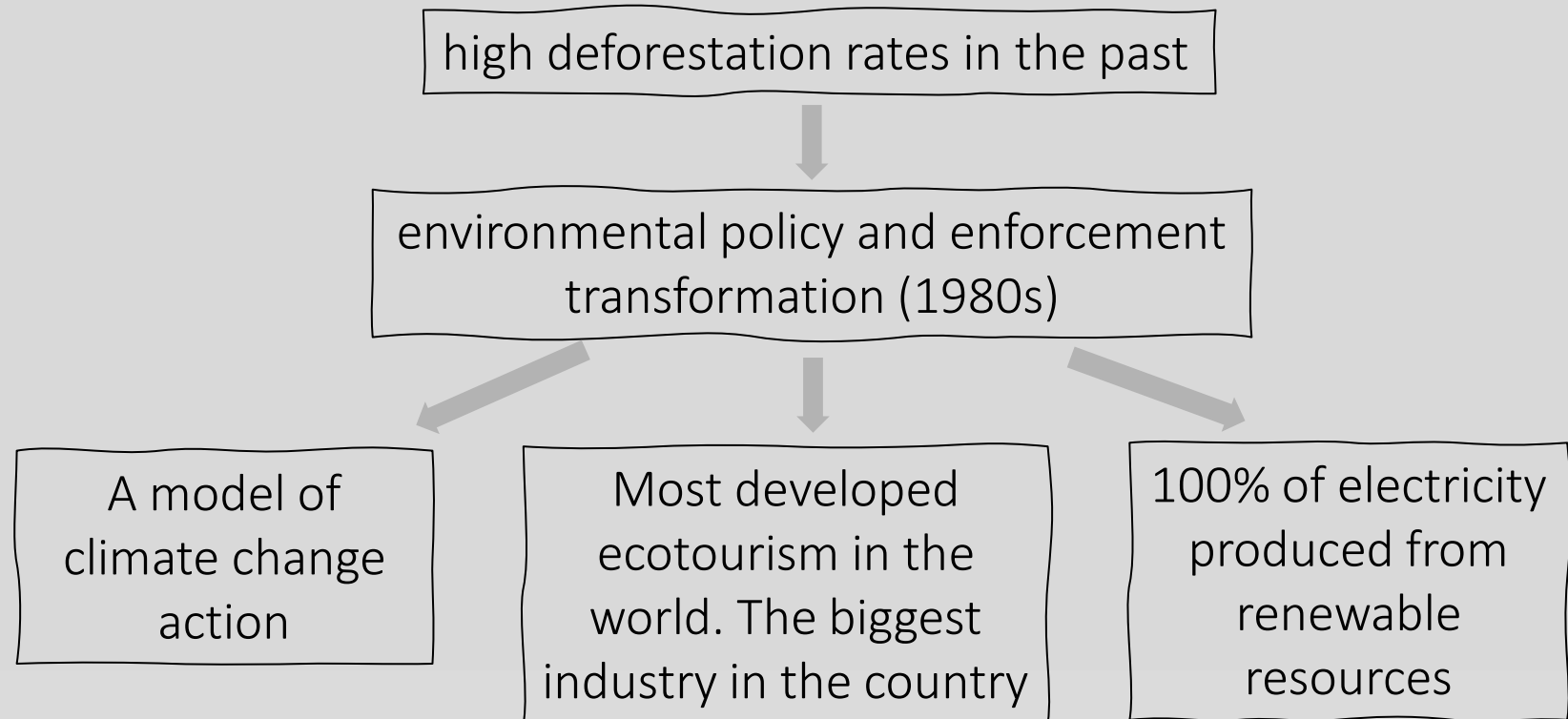
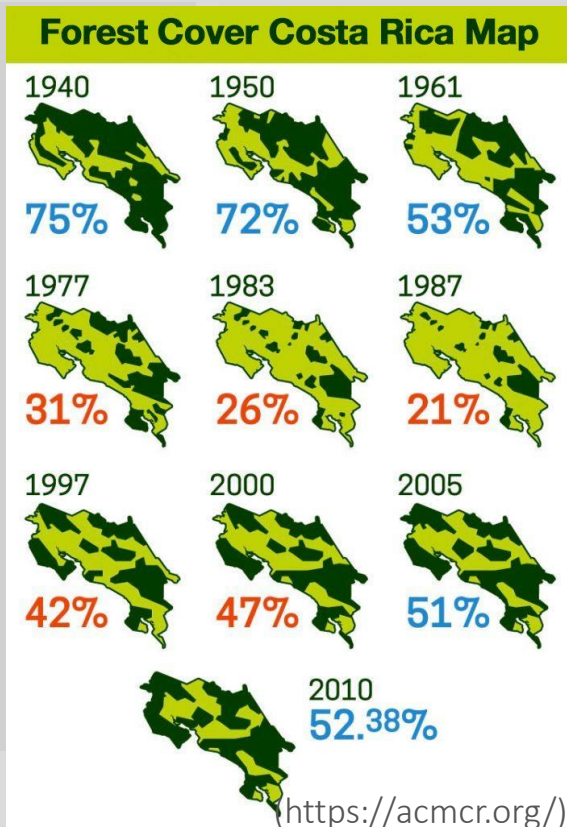
Baseline Score: how many themes were covered in the baseline definition by these guidelines



What can we learn from this?

Reasoning high baseline score – Costa Rica

(Evans et al., 2021; Korpela, 2014)



Reasoning high baseline score – Guatemala



- Democratization, modernization and rebuild of the country and its government

Reasoning high baseline score – Cyprus



2000

Adoption of hundreds of legislations in order to align with European environmental standards

2004

Acceptance to the European Union

Today

Ongoing increase in environmental awareness and legislation development

Comprehensive baseline definitions in “new” governments

- Unstable governments
- Dramatic changes- political, economical or environmental
- New environmental legislation
- Easier to built something new than to built over the existing legislation
- Seizing the opportunity of creating new environmental standards, based on best practice

How can we make environmental policy changes in EIA guidelines in existing and stable governments more effective?

Let's continue the conversation!

Post questions and comments via chat in the IAIA22 platform.



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