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# ESTEEM

A DECISION SUPPORT TOOL  
FOR DECARBONIZED HORIZONS

#WorldInCommon

# At a glance

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It is becoming necessary to **initiate profound transformation processes in our lifestyles and production methods** to set up societies whose functioning no longer runs counter to their survival. However, implementing these changes toward a low-carbon economy is accompanied by risks to which the Global South is particularly vulnerable.

The ESTEEM model proposes to **identify certain transition risks** (external, fiscal, and socio-economic) **arising from economies' dependence on high greenhouse gas emitting industries**.

By taking into account the specific structures of the economies of the Global South and their productive and commercial relations with other economies, this model works **in favor of a just transition**.

The ESTEEM model also seeks to **assist decision-making** by considering the economic, social, and environmental specificities of the countries concerned, so that they can achieve their nationally determined contributions (NDCs), pursue long-term strategies within the framework of the Paris Agreement and the 2030 Agenda, and ensure a transition trajectory toward a desirable state.

## The ESTEEM modelling tool

[ Exposure to Structural Transition in an Ecological-Economic Model ]

identifies  
transition  
risks

works in favor  
of a just  
transition

seeks to assist  
in decision-  
making



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# Why model the low carbon transition with ESTEEM?

While our link with nature is waning, our production and consumption patterns are increasingly threatening living organisms. At the current rate of greenhouse gas emissions, the **critical threshold of a 2°C rise in global temperature** will be exceeded before the end of the century. This jeopardizes the sustainability of the current production model due to an irreversible increase in climate changes, which are already exerting intense pressure on biodiversity. With these disruptions' threats to human well-being, **society's commitment to ecological transitions has become necessary.**

## A SCIENTIFIC TOOL TO IDENTIFY AND ANTICIPATE **TRANSITION RISKS**

These ecological transitions involve **profound transformations with significant effects on our economies.** For example, the development of green industries (such as renewable energy) and the decline of high-emission industries (such as coal) are a type of structural change that can affect the productive, commercial, and financial structures of countries and **lead to transition risks.**

**These risks can arise from economies' dependence on industries that emit large amounts of greenhouse gases, thus constraining their low-carbon transition.** The ESTEEM model makes it possible to identify these risks and, by extension, to anticipate them to ensure the transition's success.



While transition risks may result in financial losses due to the rapid adoption of climate policies unfavorable to specific sectors of activity (fossil fuels, transportation, etc.), they may also be due to the acceleration of technological progress.



## A TOOL TO SUPPORT THE **JUST TRANSITION**

All countries are concerned by the ecological transition. However, they are **not equal when faced with transforming our ways of life and production matrixes** to establish a society whose functioning no longer goes against its survival. The Global South, often dependent on the extraction and export of natural resources, is affected differently by these changes, **depending on the structure of their economy and their trade relations with other economies**.

**The ESTEEM quantitative modelling tool considers these vulnerabilities** and economies' difficulties in adapting their productive structures. Through the analysis it allows, this tool echoes **the Green Pact Just Transition Mechanism's objectives set in EU's borders**: helping regions that are heavily dependent on fossil fuels and carbon-intensive industries with particular attention to regions, sectors and workers.



## A TOOL FOR **PUBLIC POLICY DIALOGUE** BASED ON STRONG SUSTAINABILITY

**Transitions require a global rethinking of countries' trajectory.**

Therefore, it is essential to **develop modeling tools that estimate the risks** associated with a low-carbon transition **while considering that the ecological, social, economic, and financial objectives must be addressed together** and cannot be substituted.

Accompanying these transformations over the long term with the ESTEEM tool means **allowing decision-makers to test different scenarios** to define the best trajectory(s) for each country by identifying:

- **External, fiscal, and socio-economic vulnerabilities** associated with transition risks, and providing relevant information to address them;
- **Effects of transition policies** from multidimensional economic and biophysical indicators (water and land resources, greenhouse gas emissions...).

# ESTEEM: Which transition risks are measured, and how?

Using a hybrid input-output table for 189 countries, this model identifies carbon-intensive industries and then estimates each country's direct and indirect dependence (due to the relationships between production chains) on these industries. It assesses three types of transition risks related to these dependencies on high-emitting industries:

## EXTERNAL RISK

If a country relies on greenhouse gas-intensive industries as a source of foreign exchange, the transition will affect its balance of payments and the country's ability to import goods and services (including the machinery and inputs needed for the transition).

## FISCAL RISK

If a country relies on emissions-intensive industries as a source of tax revenue, the transition will reduce its budgetary resources, which are needed for public investments relevant to the transition (green infrastructure, social spending, etc.).

## SOCIO-ECONOMIC RISK

If a country relies on emission-intensive industries as a source of employment, the transition will lead to the destruction of jobs in specific sectors, and will require targeted measures (social protection, training, etc.).

## ESTEEM IN VIETNAM

The ESTEEM analysis shows that **Vietnam is a highly exposed economy regarding socio-economic impacts**, primarily because high-paying jobs are in declining industries. Furthermore, the analysis of different climate scenarios shows that the economy is very exposed because the country's agriculture will be strongly impacted.

Nevertheless, Vietnam is **a very dynamic economy with a solid capacity to migrate to green products**, which can contribute to the success of the transition.

*ESTEEM has been developed for Vietnam, Armenia, Colombia, Bolivia, and Uzbekistan.*





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## How to implement ESTEEM?

The implementation of an ESTEEM analysis is carried out in close collaboration with country partners involved, is relatively fast (4 to 8 months), and requires a budget of 150K to 350K€.

### A PROCESS IN 5 STEPS

- 1. Contact with partners:** The main interlocutors are central banks and ministries of Finance, Development, and/or Environment.
- 2. Country assessment and global targeting of expectations**
- 3. Identification and gathering of data needed for the analysis:** The data used are freely available and from secondary sources (published in academic journals, provided by national accounting institutes, or universities). They are processed in a legal, accurate, and transparent manner.
- 4. Deployment of the analysis, data processing, and adjustment of priorities** according to national objectives: which sectors to prioritize, how to aggregate the data, and what country's problems to tackle.
- 5. Sharing results and use of the model** in public policies (socio-environmental, economic, financial, fiscal) and/or as a support for inter-ministerial dialogue.

## Perspectives & contacts



### Extend the operationalization of the analysis to other countries, such as:

- **Indonesia**, an initiative consistent with the objectives of the EU-Indonesia Joint Committee to deepen cooperation related to the country's climate policy;
- **Bangladesh**, where this analysis would aim, in the wake of the EU's « Green and Inclusive Development » program in the country, to support development trajectories that take into account ecological, social, and economic objectives together;
- **Brazil**, where the main areas of EU partnership focus on environmental sustainability and climate change.



### Develop other analysis based on the original ESTEEM project:

- **ESTEEM-Biodiv**, to understand risks related to ecological dimensions other than dependence on carbon-intensive industries (water stress, excessive land use, pollution...);
- **ESTEEM-Dynamic**, to understand how the systemic impacts of a transition vary according to the scenario selected and the capacity of economies to migrate towards green industries.



#### TO GO FURTHER

- **Our research paper in *World Development*:**  
"Macroeconomic exposure of developing economies to low-carbon transition"
- **Our research paper in *Climate Policy*:**  
"Impacts of CBAM on EU trade partners: consequences for developing countries"



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# Towards a world in common

AFD Group contributes to the implementation of France's policies for sustainable development and international solidarity. The Group includes Agence Française de Développement (AFD), which finances the public sector, NGOs, research and training; its subsidiary Proparco, which is dedicated to the private sector; and Expertise France, a technical cooperation agency. The Group finances, supports and accelerates the transitions needed for a fairer, more resilient world.

With our partners, we are building shared solutions with and for the people in more than 150 countries, as well as in 11 French Overseas Departments and Territories. As part of the commitment of France and the French people to achieving the Sustainable Development Goals, our teams are at work on more than 4,800 projects in the field. Our objective is to reconcile economic development with the preservation of common goods, from peace, the climate and biodiversity to health, education and gender equality. Towards a world in common.



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