UNCTAD National Green Export Reviews

NGERs respond to emerging country demand for assessments of national potential to advance the development of national green sectors to generate new employment and export opportunities while promoting sustainable development.

Many developing countries require technical assistance to identify and construct effective policy reform packages needed to ensure development gains from a greening global economy.

Each UNCTAD NGER is centered on a national multi-stakeholder process in requesting countries. Using UNCTAD's green product space methodology, national stakeholders first identify green sectors with promising export prospects. The NGER subsequently guides stakeholders through an interactive review of the economic, regulatory, institutional and trade policy environments characterizing these sectors.

National teams including two or more experts work closely with national stakeholders to coordinate and conduct the NGER activities and prepare final project reports. Stakeholders, including national policy-makers, are involved through direct interviews and questionnaires, and through their participation in national stakeholder workshops that serve to define each NGER's objectives and review its findings and policy-relevant conclusions. Results of this review assist policymakers to design policy packages to support the development of productive capacity and tap external markets for green products and services in which their country has a demonstrated comparative advantage. Project reports are published and disseminated by UNCTAD. Through intergovernmental fora organized regionally and in Geneva, study results are also reviewed and discussed by researchers, national decision-makers and trade negotiators in the wider trade and development community. National experiences and best practices are exchanged.

NGERs guide national stakeholders through a structured process to identify and develop new export opportunities in green goods and services.

UNCTAD NGERs will assist developing countries and countries with economies in transition to improve the capacity of public and private stakeholders to:

1. Identify and select sectors for national production and export of green/sustainable products;
2. Assess the policy, regulatory and institutional requirements for supporting the development of selected sustainable product sectors;
3. Prepare and adopt recommendations and action plan for building productive and export capacity in selected sustainable product sectors.

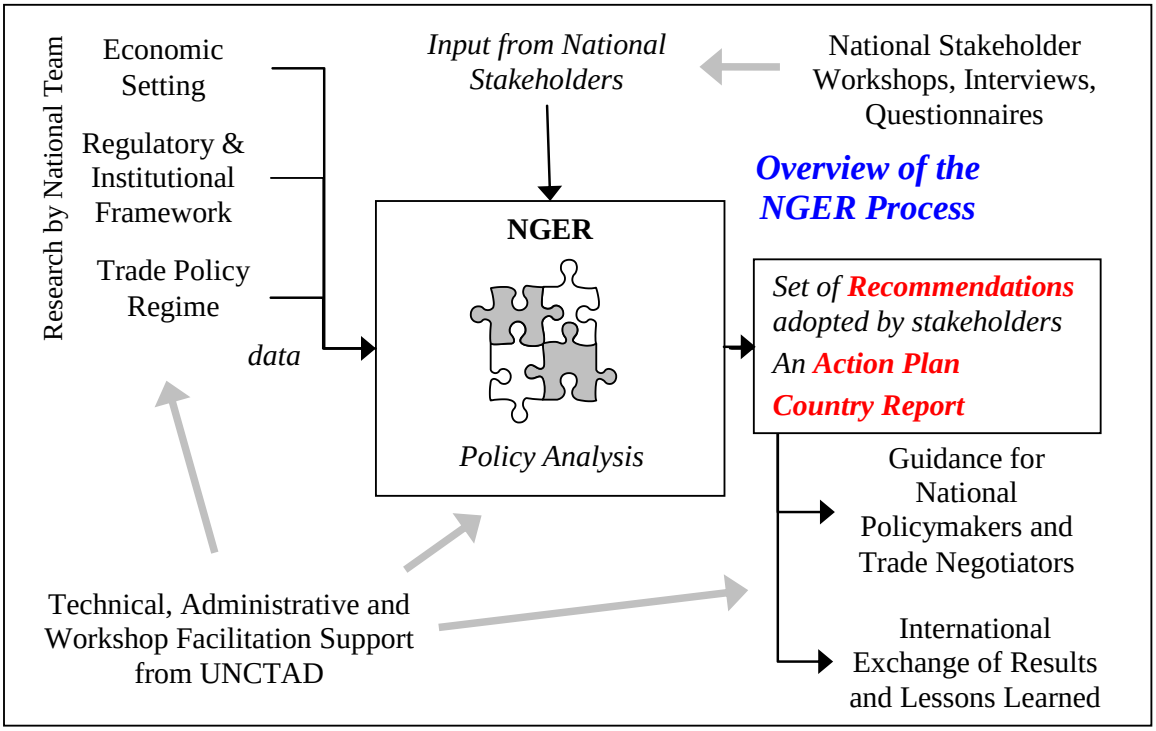
NGERs aim to assist beneficiary countries to devise national strategies and action plans to advance green product export development.

In focusing a particular green sector in a national economy, and assessing the impacts of economic and market trends, and of regulatory, institutional and trade reforms on its future performance, an NGER leads national policymakers and other stakeholders to examine a range of important issues for the green sector(s) under study within the context of the overall policy framework for the sector. Issues examined include:

NGERs rely on the use of various national and international databases, analytical tools and sector-specific questionnaires for use in surveys of national stakeholders.

- National development objectives for the sector;
- Areas of effectiveness and weakness in the current policy framework for the sector;
- Regulatory and institutional challenges inhibiting sectoral development;
- Innovative approaches to strengthening backward and forward inter-sectoral linkages within the national economy;
- The role of women and youth in the sector and how employment conditions and opportunities can be improved going forward;
- The likely impacts of sectoral reforms on access to essential services, especially for the poor;
- Prospects for trade liberalisation to generate increased efficiency, employment and access to foreign markets, particularly among SMEs;
- Short-term adjustment costs and how to address them;
- The impact of trade liberalisation on foreign and domestic investment;
- The overall impact of domestic reform and trade liberalisation on sectoral development.

Figure 3 – NGER process



UNCTAD's Green Product Space Methodology

One unique feature of NGERs is the use of UNCTAD's "Green Product Space" (GPS) methodology which allows national stakeholders to identify their country's potential export strengths for specific green products that a country does not yet produce and export. Rather than trying to pick winners randomly from the green product universe, the GPS methodology uses national trade data to quantitatively predict which green products the country is best positioned to competitively produce and export.

UNCTAD NGERs use GPS to quantitatively predict which green products the country is best positioned to competitively produce and export.

Policymakers face a number of challenges when designing government initiatives that aim to foster the development of new green sectors. The first and most critical challenge the encounter concerns selecting which, among many, green sectors to promote. The literature on industrial policy shows that this selection process, often referred to as 'picking winners', has more often been a failure than it has been a success. Notably, it also indicates that when governments have designed policy packages to support those sectors in which their country has a demonstrated comparative advantage, industrial policy is most likely to succeed. Following their areas of natural and comparative advantage has produced clear successes for some developing countries.

As the global economy increasingly orients itself towards a green economy, many policymakers would like to know which green sectors offer the greatest potential for diversification and growth of their economies. Based upon the 'Product Space' model pioneered by Hidalgo and Hausmann,[1] UNCTAD has developed a data-based analytical approach to help policymakers identify green sectors and green products which a country is best positioned to produce and export.

How does it work?

The methodology operates on the basis of product groups classified at the four digit level under the SITC-4 classification. National and international data will be used for the selection of groups of products. This methodology uses as factors of analysis the volume of exports, the index of Revealed Comparative Advantage (RCA) and the proximity between groups or families of products that are being exported. The RCA is an indicator that allows identifying the sectors in which an economy has a comparative advantage when comparing the interests of a country's export profile with the world average.

When a country has a revealed comparative advantage for a given product (RCA > 1), statistically, it is identified to be a competitive producer and exporter of that product relative to a country producing and exporting that good at or below the world average. We consider a country with a revealed comparative advantage in product *i* to have an export strength in that product. The higher the value of a country's RCA for product *i*, the higher its export strength in product *i*.

The method of green product space will provide a general analysis of RCA (usually in the form of a diagram or map product, identifying products and families of products based on the volume of exports and RCA).

[1] Hidalgo, C., and R. Hausmann, 2009, "The Building Blocks of Economic Complexity", Proc. Natl. Acad. Sci. 106(26):10570-10575.

This visual identification will be shown as follows:

- Each product is represented by a node:
- The colour of the node indicates which SITC group classification said product belongs to.
- When a country has revealed comparative advantage for exporting a given product, the product node is depicted with a filled circle:
- When a country has no comparative advantage and/or does not export a given product, the product node is depicted with an unfilled circle:

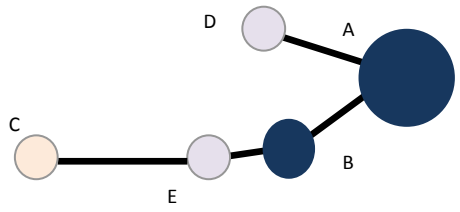
It must be noted, however, that visual maps do not show whether products are or may be green or not. This differentiation will be specifically addressed in the analysis of the visuals and during the national workshops.

In addition, nodes may be connected to each other by links:

This indicates proximity of products and potentiality for synergies. Products that are situated close to each other and connected by a link are known to be strongly correlated in countries' export profiles based on historical trade data. There may be many reasons for the close proximity of products. For example, nearby products may require the same inputs, share the same or similar production processes or, in the case of agricultural goods and minerals, share common geographical, climatic or geological factors related to their natural occurrence or production.

Therefore, when a product closely linked to another is produced and exported, there is a high propensity for the connected product to be produced and exported as well. The shorter the link is, the closer the products will be to each other.

Figure X shows an example of this product space methodology for a hypothetical country, Terra. Terra's largest exports are products A and B and the smallest, C, D and E.



From this figure we can deduct that:

- Terra has revealed comparative advantage in products A and B, depicting an RCA ≥1.
- Noticing the links and close proximity of product D to A and of product E to B, and recalling that Terra has a comparative advantage in exporting A and B, the map strongly suggests that Terra may be well positioned to build productive capacity in products D and E and competitively export them.

Green Sectors in the National Economy

There is no internationally agreed definition of a green sectors and products. However, it is generally agreed that environmental goods and services generally fall into one of two categories:

1. **Goods and services used to provide an environmental service** such as wastewater treatment, solid waste management, and air pollution control. Related goods include a wide variety of industrial products such as valves, pumps, compressors, etc. that can be specifically employed for environmental purposes.
2. **Goods and services whose production, end-use and/or disposal have reduced negative, or potentially positive, environmental impacts relative a traditional substitute good providing similar function and utility**. This category includes goods are generally used for purposes other than environmental ones. For example, related goods may include items such as chlorine-free paper, renewable energy technologies, energy-efficient office machines, organic soaps, or natural fibre packaging or floor covering materials. Such goods, sometimes referred to as environmentally preferable products (EPPs), have inherent environmentally superior qualities that compared to substitute goods. Related services include ecotourism services or renewable energy transport and electricity supply services.

It is important to note that following the logic used to identify the second category of products above, virtually any product, whatever it may be, can have a non-green and green product variant. Why? Because green products are those that have less of a negative impact on the environment than traditional equivalents. The green product variant could for example be manufactured from recycled components, be manufactured using renewable energy, be supplied to the market with less wasteful packaging, or all three.

Broadly speaking, however, it may sometimes be more practical to identify a green product following the market rather than through the rational approach as attempted above. After all, it is firms and consumers in the marketplace that will eventually purchase these goods and services, and thus their perceptions of what makes a product green should be heeded by suppliers seeking to meet market demand.

For many consumers, a green product is any product made using natural ingredients. Typically, such products concern food, medicine, nutrition and cosmetic products made using natural or organically grown ingredients. For some consumers, products that have perceived lowered negative impacts on human health are sometimes considered as green, for example, foods without artificial colouring or preservatives.

Many consumers also perceive products produced by poor rural communities through fair trade schemes are considered green. Why? Because the income from the sale of these products generates employment in poor rural communities thereby reducing poverty and placing them in a better position to sustainably manage rural ecosystems and natural resources.