Sustainable Consumption and Production Hotspot Analysis Tool - Introduction

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HOTSPOT ANALYSIS TOOL
FOR SUSTAINABLE
CONSUMPTION AND PRODUCTION
to support science-based national policy frameworks
VIEW MODULES
UN environment programme
Life Cycle Initiative
One planet handle with care
International Resource Panel
WU
CSIRO

SCP, Sustainable Consumption and Production

- **Aims to minimize negative environmental impacts** from consumption and production systems while **enhancing quality of life** for all
- **Considering all stages of the life-cycle of products and services**
- **Many operational solutions:** resource efficiency along the value chain, life-cycle thinking, eco-innovation, sustainable procurement, eco-labelling…
- **Decoupling** economic prosperity from environmental degradation

- Requirement for countries to **design policies for SCP and SDGs**
- Often, there's a **lack of knowledge** about **what areas to tackle**
- Tool to **support countries in prioritizing sectors and value chains for intervention**, while avoiding unintended trade-offs



SCP HOTSPOT ANALYSIS

The SCP Hotspots Analysis Tool (SCP-HAT)

- …can be found at scp-hat.lifecycleinitiative.org;
- …was commissioned by the Life Cycle Initiative together with the One Planet Network and the International Resource Panel;
- **…aims at supporting science-based policy frameworks for SCP → SDG monitoring**;
- …identifies hot spot areas of unsustainable production and consumption, to support setting priorities in national SCP and climate policies;
- **…identifies hotspots related to domestic pressures and impacts** (production perspective) **and** impacts occurring in foreign countries **linked to domestic consumption** (consumption or footprint perspective);
- ...provides a wide-range of analytical options related to production and footprint-type indicators through an intuitive and flexible online app;
- …enables national offices to insert their own data;
- …was developed by WU Vienna, in collaboration with CSIRO and kindly supported by Sydney University (GLORIA database).

SCP-HAT method

- Tool requirements: for different levels of expertise
- Tool implementation: Interactive online tool
- Data/method requirements: open access, global coverage, high quality, scientifically sound
- Multi-regional input-output model: GLORIA (UN IRP) → 97 sectors
- Extended by environmental data on materials, land, emissions, air pollution, energy, water, and water pollution
- Extended by socio-economic data on population, employment, value added
- Pressures linked with impacts: Life Cycle Assessment (LCA) → coefficients as recommended by the Life Cycle Initiative

SCP-HAT method: Consumption footprint

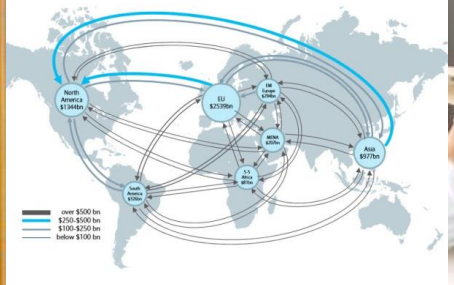
Domestic production

Consumption footprint

Domestic production → Processing/ Manufacturing → International trade → Final consumption









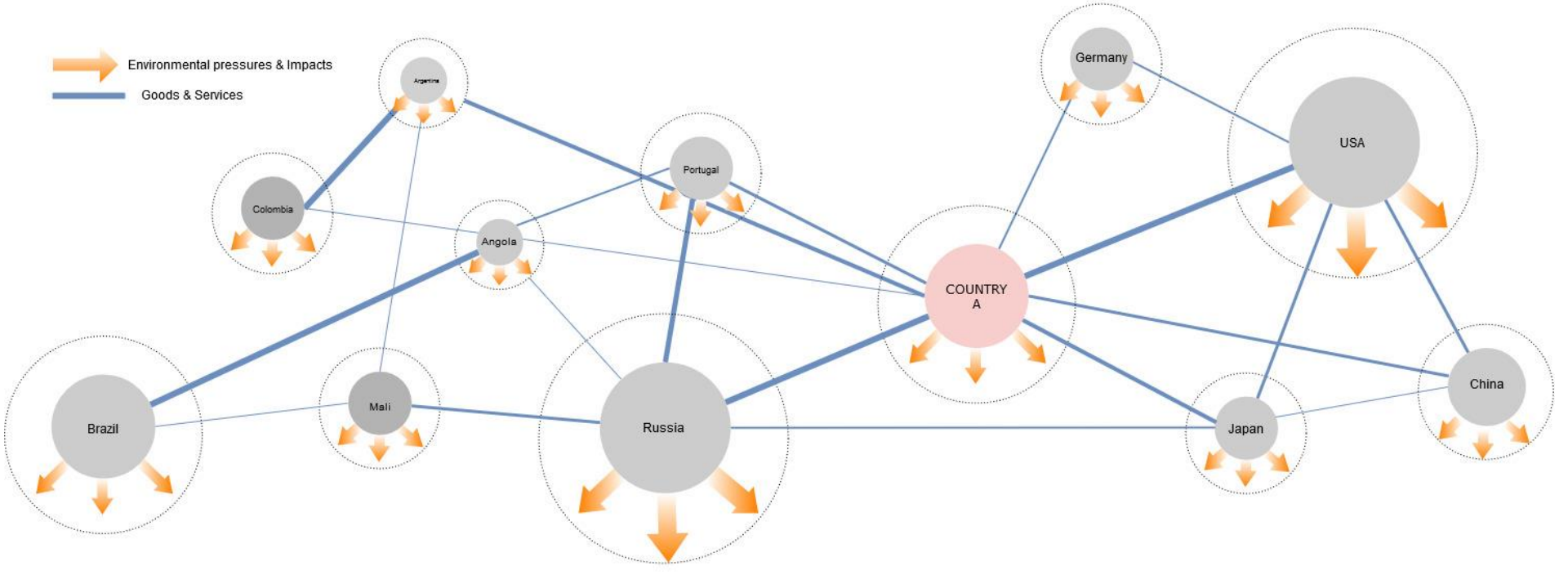
Value chain→ direct use→ indirect flows→ „Footprint"

SCP-HAT method

- **Domestic production ("territorial" approach"):** environmental pressures and impacts are allocated to the country where they physically occur, irrespectively where goods and services are finally consumed.

- **Consumption footprint ("footprint approach"):** environmental pressures and impacts are allocated to the country where final consumers reside, irrespectively to where those pressure and impacts physically occur.

Linking the monetary model ('MRIO') with environmental pressures and impacts



Global MRIOs databases and models describe the **global economy** and how **environmental deterioration** and **international trade** relate to each other.

SCP-HAT – thematic linkages

Current SDG coverage



UNEP LCI endpoint indicator

UNEP LCI midpoint indicator

Non-UNEP LCI indicator

Environ-mental pressures	Environ-mental impacts	Socio-economic data
RAW MATERIAL EXTRACTION (t)	MINERAL/ FOSSIL DEPLETION (Recipe)	VALUE ADDED
GHG EMISSIONS (kg)	SHORT-TERM CLIMATE CHANGE (GWP 100 AR5)	EMPLOYMENT By sex/skill
	LONG-TERM CLIMATE CHANGE (GTP 100)	
LAND USE (km^2)	BIODIVER-SITY LOSS (PSLglo + PSLreg)	FINAL DEMAND CATEGORIES
AIR POLLUTION (kg)	HUMAN HEALTH (DALY)	HDI / vulnerability
WATER CONSUMPTION (km^3)	WATER SCARCITY (AWARE)	GDP / Income
N-emissions (kg)	MARINE EUTROPHICATIO N (N-eq.)	
ENERGY USE (J)		

Possible expansion areas

- Sustainable Food Systems
- Sustainable Buildings and Construction
- Sustainable Public Procurement



Supply chain analysis



Data hub

SCP-HAT – how to use it?

- SCP-HAT is not targeted at providing the reporting for specific SDGs or policy questions, but to **inform policy strategies**.
- Strength: Using the same methodology and homogenous datasets for all countries in the world
- Advantage: Capability to **compare** different environmental categories, pressures and impacts, domestic and footprint perspectives and countries among each other
- SCP-HAT can provide **trends** at national and sector group level.

SCP-HAT – how to use it?

- **Caution:**
  - SCP-HAT cannot explain the reason behind the trends.
  - Global data bases will necessarily harmonise data – national data will differ from data included in SCP-HAT.
  - Sector detail will always be restricted – sector comparisons are valuable; sector-specific analyses are feasible only to a certain extent.
  - SCP-HAT does not provide information about products or technological processes.
  - Allocation of pressures to specific sectors underlies assumptions – results have to be interpreted bearing these assumptions in mind.
  - 68 Countries with input-output data (~40%). The rest estimated on the basis of macroeconomic and trade data

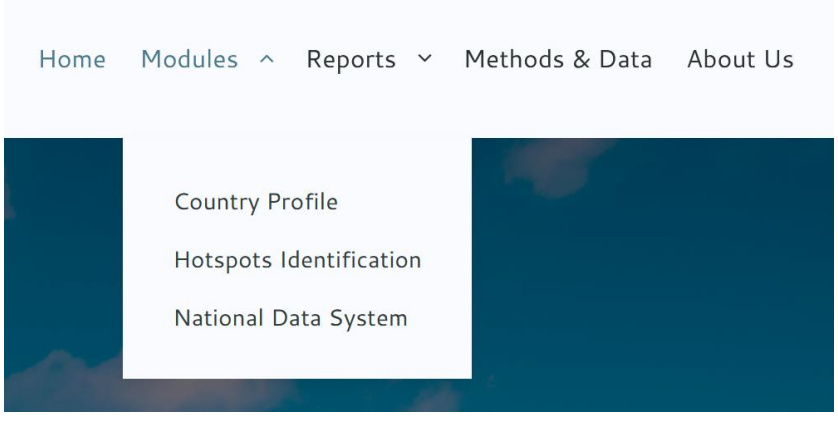
Potential applications of SCP-HAT

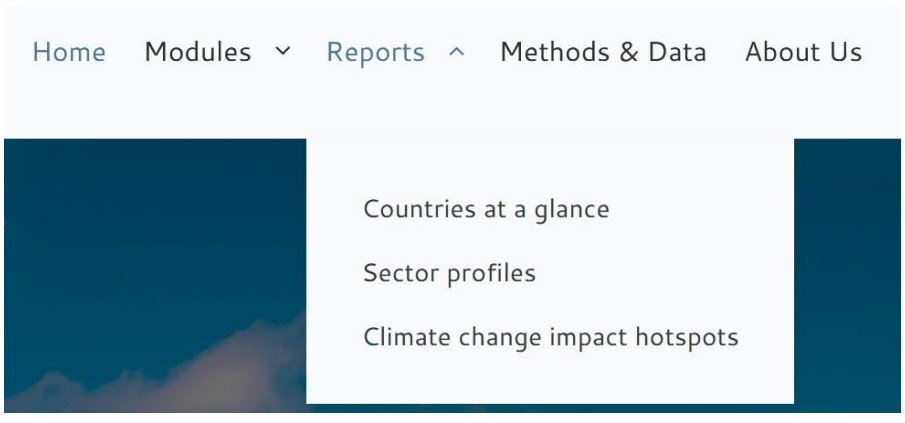
- Answering **policy questions** like…
  - How efficient is a country's economy in using domestic natural resources for production?
  - Is a country increasing its carbon productivity/efficiency?
  - Does a country manage to decouple (economic) development from environmental degradation (GHG emissions, biodiversity loss, air pollution…) – in relative or absolute terms?
  - Where do environmental and social pressures and impacts caused by domestic production and consumption occur?
  - Where are the hotspots in production and consumption where action is needed? → largest impacts / largest gains?

→ Informing **policy areas related to resource efficiency, climate action (NDCs), etc.**

SCP-HAT overall structure

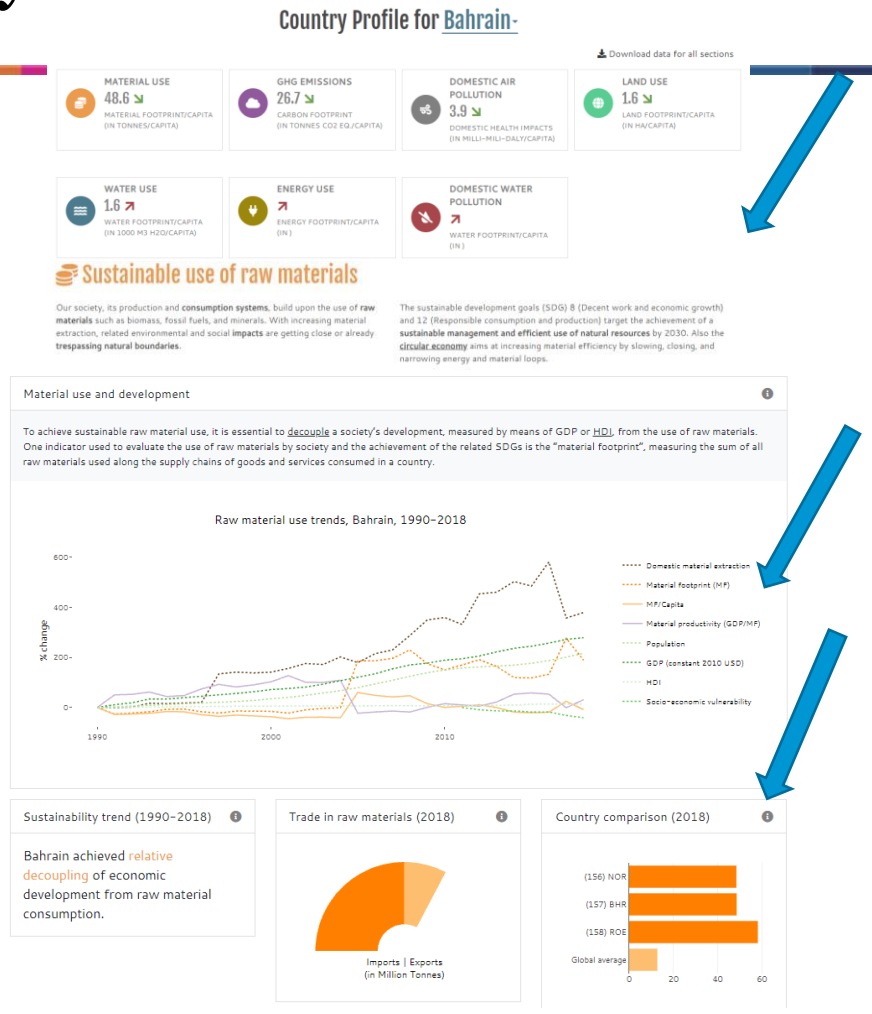
- **3 Modules:** Country profile, Hotspot identification, National data system (currently under revision and not available)
- **3 reports:** Countries at a glance, Sector profiles, Climate change impact hotspots
- **Range of** environmental and socio-economic **indicators**
- **Domestic production ("territorial" approach") vs. Consumption footprint ("footprint approach")**





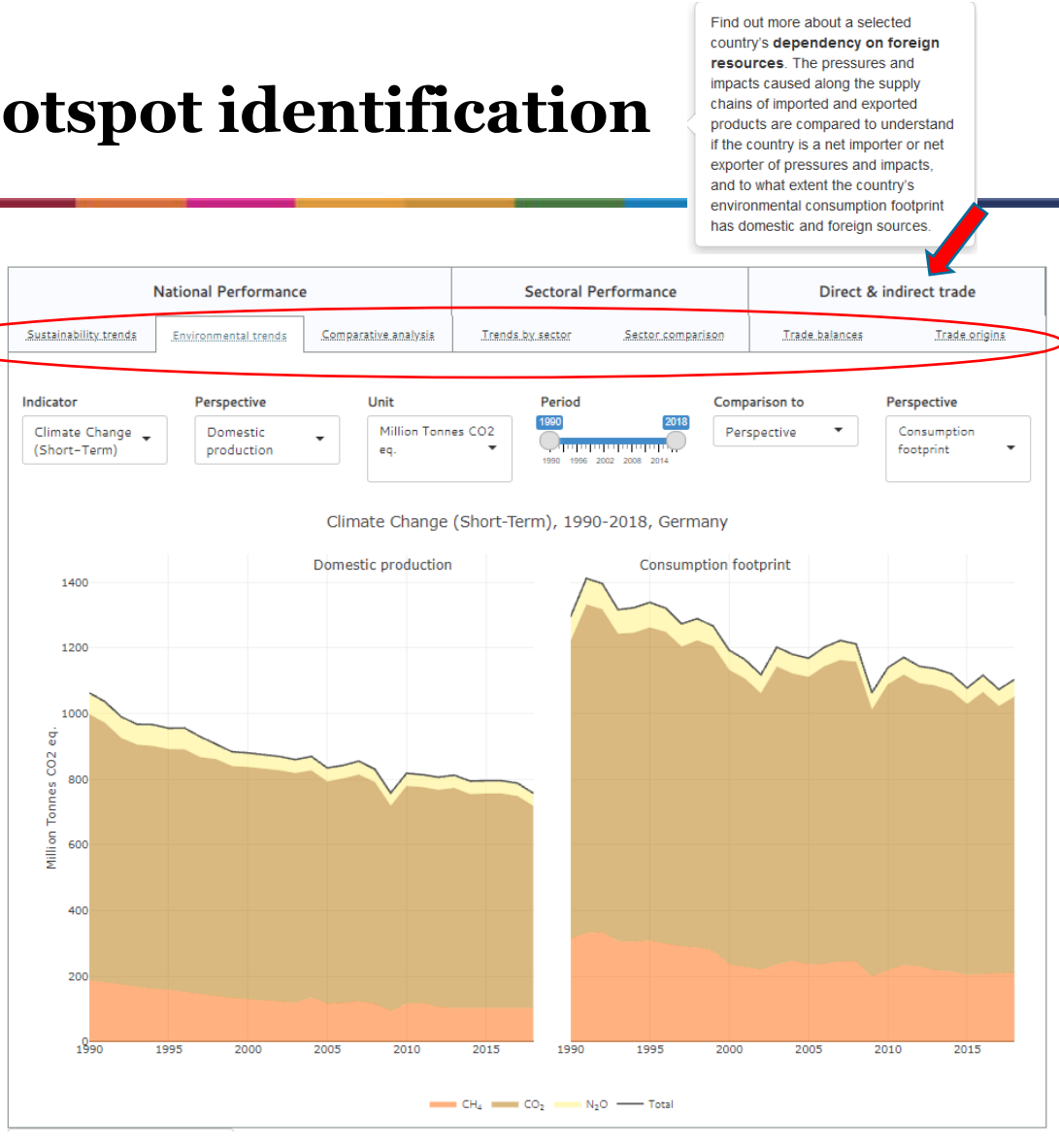
SCP-HAT Module 1: Country Profile

- **For policy makers, NGOs and the general public.**
- **Key information** on country's environmental performance
- Clustered in **seven environmental categories**
  - Raw material use
  - Air pollution & health impacts
  - GHG emissions & climate change
  - Land use
  - Water consumption and scarcity
  - Energy use
  - Water pollution & ecosystem impacts
- For each environmental category, **policy context and main indicators** used are explained.



SCP-HAT Module 2: Hotspot identification

- For **policy advisors and researchers** with expertise
- **Toolbar with a range of SCP indicators** (environmental and socio-economic indicators) **for hotspot analysis**
  - Comparison of **national vs. footprint perspective**
  - **Comparison of country to regional average/ Comparison of regions**
  - **Sector analysis & comparison**
  - **Trade balance**



Using SCP-HAT

- Is your country decoupling its economic development from material use?
  - Option 1: Module 1
  - Option 2: Module 2 – Sustainability trends

Using SCP-HAT

- How much land is your country's economy using?
  - Two perspectives: Module 2 – Environmental trends

Quiz - Question 1

- In your country, from 1990-2018, did:
  - domestic GHG emissions increase or decrease?
    - by how much? (Module 1)
  - the carbon footprint increase or decrease?
    - by how much? (Module 1)

Quiz - Question 2

- How did the material footprint per capita (consumption perspective) in your country in 2018 compare to the regional average?
  - (Module 2, Comparative analysis)

Quiz - Question 3

- Was your country a net-importer or net-exporter of indirect land use* in trade in 2018?
  - (Module 2, trade balances)

* Indirect land imports (also: land embodied in imports) contain all pressures and impacts caused abroad to produce goods and services consumed domestically.

Indirect land exports (also: land embodied in exports) contain all pressures and impacts caused domestically for the production of exported goods and services.



Thank you