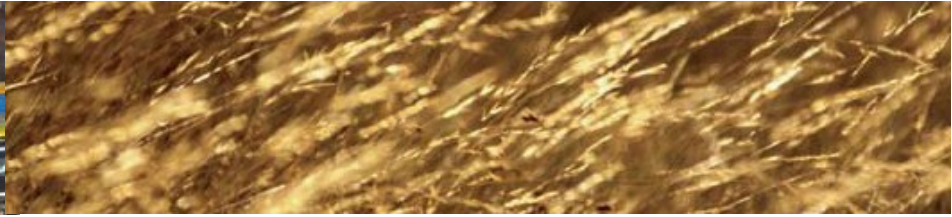


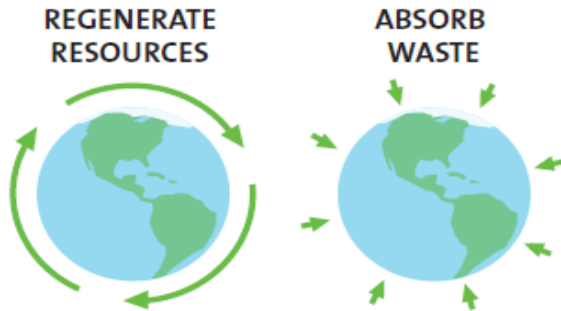
Ecological Footprint: Competitiveness Metric for a Resource-Constrained World

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New Indicators...
Rio de Janeiro, Brazil
21 June 2012

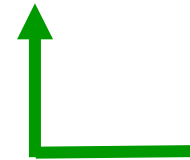


The Ecological Footprint is an environmental accounting tool identifying the extent to which human activities exceed two types of **environmental limits:**



SUPPLY = BIOCAPACITY

How much bioproductive area is **available to us?**



DEMAND = ECOLOGICAL FOOTPRINT

How much bioproductive area do we **use?**





The Ecological Footprint is a “resource and energy flows” indicator; however, it is measured in terms of the bioproductive land needed to generate such flows (global hectares - gha).

$$EF = \frac{P}{Y_N} \cdot YF \cdot EQF$$

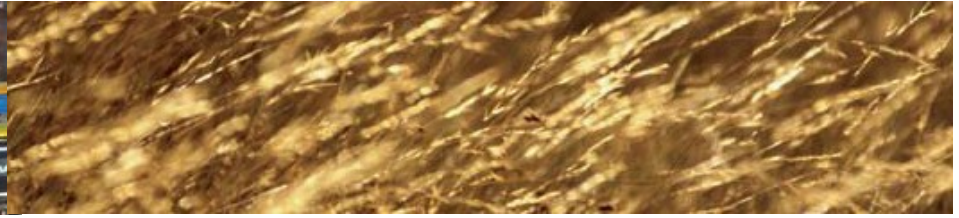
Input variable: flow of physical resources used by humans. NEED to be aligned with SEEA Chapter 3

$$EF_C = EF_P + EF_I - EF_E$$

From FLOW to AREA:

Y_N is used to convert the consumption of a resource flow into the correspondent amount of area locally required to produce that flow
YF is used to scale national to world average productivity for a given land use type

EQF is used to arrive at gha.

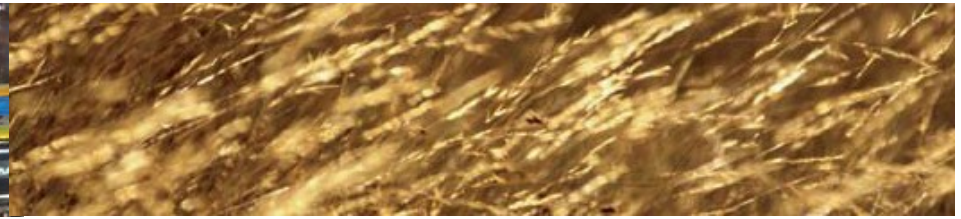


Normalization system: Equivalence Factors

- Footprint functional unit is global hectare
- EQFs translate the area of a specific land use type into units of world average bioproductive area (gha).
- This step is needed to weight different land types according to empirical data on their relative productivity (**Quantity and Quality of production**)
- This normalization is based on observable characteristics of the land and sea areas: currently the GAEZ model is used

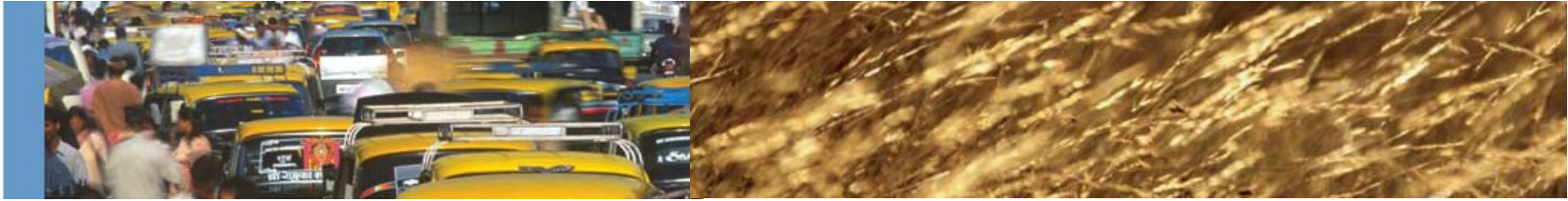
• land type	• EQF
• Cropland	• 2.51
• Grazing	• 0.46
• Forest	• 1.26
• Fishing	• 0.37
• Carbon	• 1.26
• Built-up	• 2.51





Raw Input Data

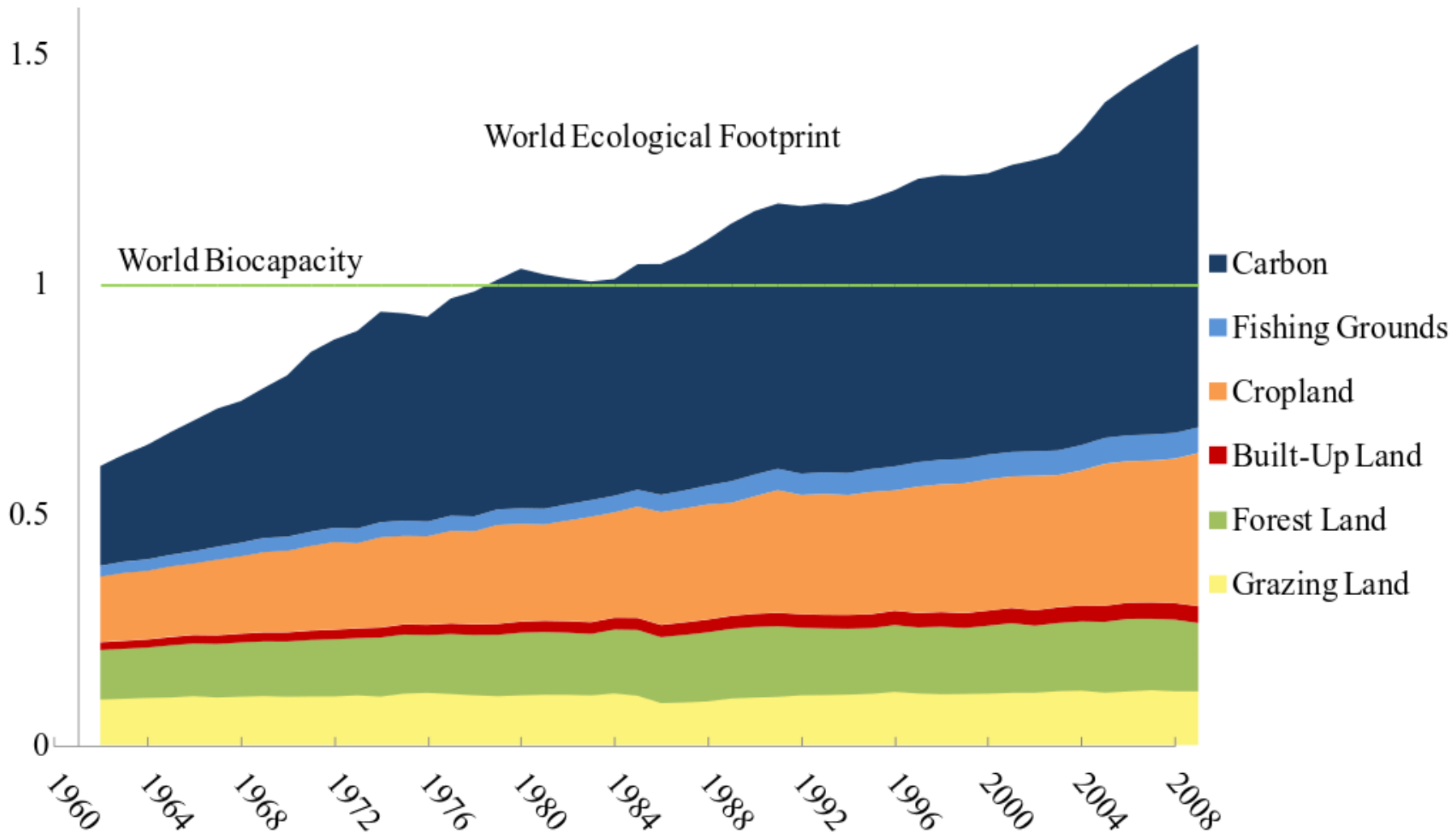
Dataset	Source	Description	Actual completeness and coverage	Action to achieve required dataset
Production of primary agricultural products	FAO ProdSTAT section of the FAOSTAT web-site: http://faostat.fao.org/site/567/default.aspx#ancor	Data on physical quantities (tonnes) of primary products produced in each of the considered countries.	Data are available for almost 229 countries for the period 1961-2009 covering 164 primary crop products. Data coverage and reliability changes depending on the reporting countries.	None
Import and Export of primary agricultural products	FAO TradeSTAT section of the FAOSTAT web-site: http://faostat.fao.org/site/535/default.aspx#ancor Detail trade data obtained from Faostat on special request.	Data on physical quantities (tonnes) of products imported and exported by each of the considered countries.	Data are available for almost 229 countries for the period 1961-2008 covering approximately 570 agricultural and livestock products. Data coverage and reliability changes depending on the reporting countries.	None
Consumption of seeds	Data on crops used as seeds is calculated by Global Footprint Network based on data from the FAO ProdSTAT section of the FAOSTAT web-site: http://faostat.fao.org/site/567/default.aspx#ancor	Data on physical quantities (tonnes) of seed	Data are available for almost 229 countries for the period 1961-2009. Data coverage and reliability changes depending on the reporting countries.	No adjustments needed.
Crop consumption by livestock	This dataset is calculated by GFN by the % feed-mix of crops using market feed supply mapping obtained by GFN; feed demand calculated from the feed efficiency (kg dry matter head ⁻¹ day ⁻¹) (Haberl et al, 2007) and feed intake (tonnes dry matter year ⁻¹ and finally the total stock of livestock. Based upon the following datasets: - FAO Production for Livestock primary http://faostat.fao.org/site/569/default.aspx	Data on crop-based feed for livestock (tonnes of dry matter per year), split into different crop categories.	Data available for 17 livestock groups and 15 crop categories	None

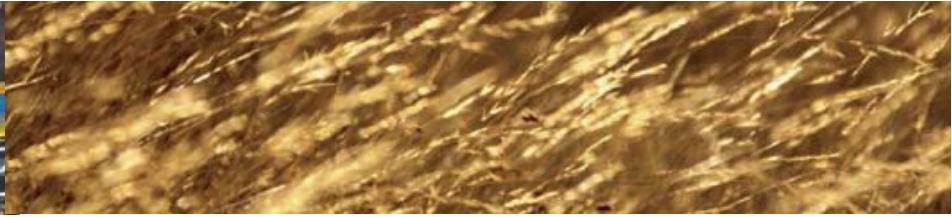


• Outcomes: National Footprint Accounts - NFA

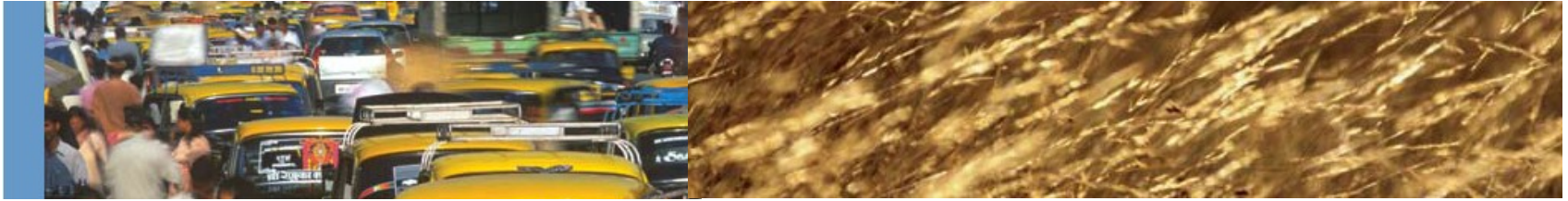
$$EF_C = EF_P + EF_I - EF_E$$

- **Every year** Global Footprint Network releases an updated version of the NFA, which is based on the most up-to-date Footprint methodology
 - **Each edition** of the NFA tracks EF and BC values for almost 200 countries (and the World), over about 5 decades (1961-2008) and with different level of aggregation:
 1. *Aggregate national EF and BC values (most known)*
 2. *EF and BC values by land type*
 3. *EF values by variable*
 4. *EF values for all individual products*
 5. *Values are provided both per capita and total*
- *Results in both ha and gha (not for totals)*

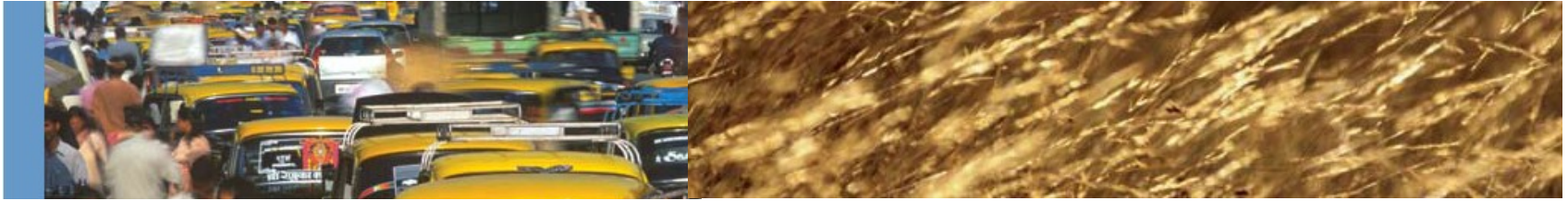




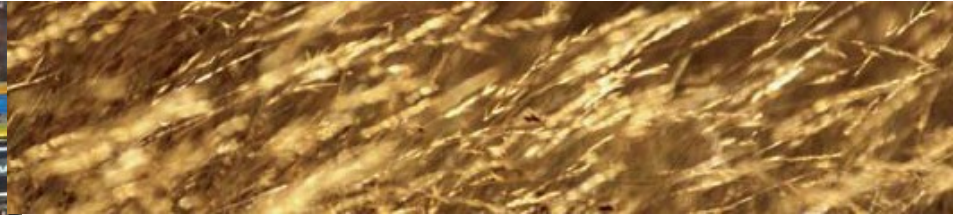
Ecological Footprint and National Competitiveness



- Prices are rising, supplies are constrained
 - World Bank data show significant rise in prices for many basic materials in last 10 years
- Using more biocapacity than is renewed within your borders every year has a direct monetary cost
 - The global auction for resources in a full world



- Because of this, countries have a competitive self-interest in safeguarding their ecological assets
 - No matter what the outcome at Rio+20
- Ecological Footprint provides a way to understand your resource risk exposure and plan, validate, & track solutions



Thank You

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