Workshop 3
The ecological footprint and sustainable consumption

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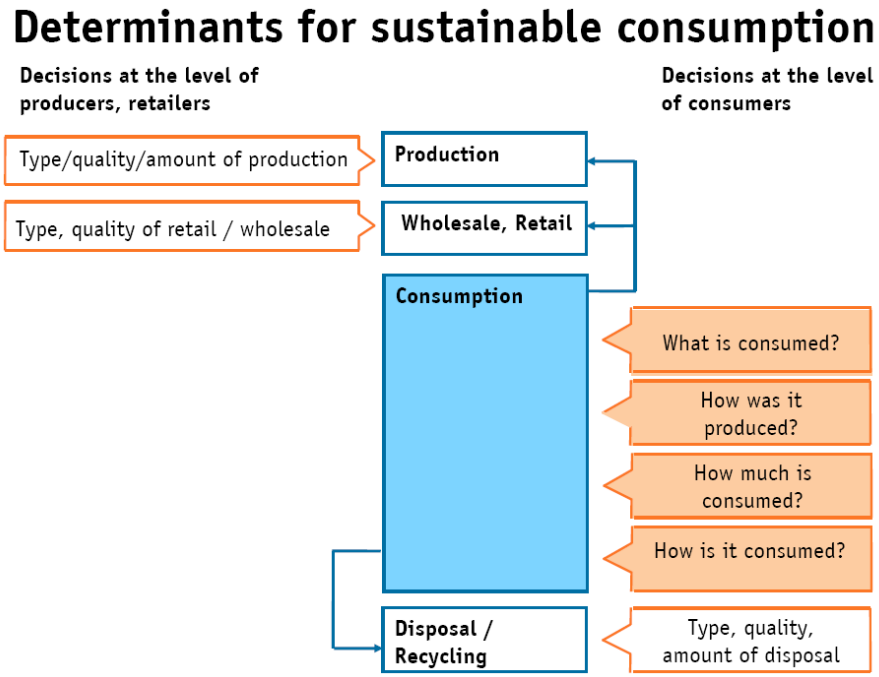
In her introduction, M. Steinimann presented the ecological footprint as a scientific method for determining where and how heavily humans impact on the environment. The method focuses on use of and stress on natural capital, such as crop cultivation or energy and wood consumption, to calculate the area that would be required to provide these resources in a sustainable manner. The result – the ecological footprint of a region, a country or the world as a whole – is expressed in a measure of area called the *global hectare*. The larger the footprint, the greater is the stress on the environment. Furthermore, the method also calculates *biocapacity* – the ability of the environment to produce raw materials and break down pollutants. When a region's footprint and biocapacity are equal, it is in harmony with its natural capacity and is sustainable. Switzerland's footprint is approximately three times as big as its biocapacity. Our country's ecological footprint has exceeded its biocapacity for several decades now. It has more than doubled since the 1960s (INFRAS 2006; *note that the calculation of Switzerland's ecological footprint has been revised since the publication of this report. The latest number for the footprint is 5 global hectares whereas the country's biocapacity is 1.8* global *hectares*).

Under the moderation of J. Heldstab, participants highlighted the **pre-eminent role of consumer information** in sustainable consumption. Knowledge about the impact of production and the manner of consumption will make it easier to choose more sustainable products. Several factors determine the degree of sustainability of products, their consumption and disposal (see red box in the figure).



Participants mentioned **several alternative methods** for measuring sustainability:

- **Carbon footprint**: a measure of the impact our activities have on climate change. There is no consensus on the exact definition of a carbon footprint. It is sometimes defined in terms of carbon emissions (e.g. by persons), or carbon intensity of sales or of output (for companies), but it also covers different greenhouse gases (from all greenhouse gases to only CO_2-emissions from fossil fuels).
- **Water footprint:** This quantifies water use, taking into account both the direct and indirect water use of a consumer or producer. The water footprint of an individual, community or business is defined as the total volume of freshwater used to produce the goods and services consumed by the individual or community or produced by the business. So far, no standardised procedure has been established to determine the water footprint.
- **Life cycle analysis** (also known as life cycle assessment or ecobalance) is the investigation and evaluation of the environmental impacts of a given product or service caused or necessitated by its existence. It allows for comparison of the full range of environmental (and sometimes also social) damage assignable to products and services, making it possible to choose the least burdensome ones.

All these methods and indicators typically cover only some aspects of agricultural production; none of them has attained the status of an agreed method for measuring the sustainability of an agricultural system (in particular the adaptation component, climate resilience, is barely covered by these methods). This might be a consequence of agriculture being a complex and interrelated system that deals with living organisms, which do not allow system boundaries to be defined in a strict sense as is the case with technical systems.

Indicator and method development:

- It was discussed whether existing methods and indicators could be further developed (e.g. by including other greenhouse gases and water issues in the ecological footprint and developing a “food footprint” or by including e.g. biodiversity and fair trade elements in the organic label *Bio Knospe* as currently discussed) or whether the focus should be more on selected key elements such as pricing signals (e.g. energy).
- Complex sustainability labels or indicators might be developed but may be difficult to understand and communicate and therefore be less practicable. This will make it difficult to use such indicators / labels as decision tools / political instruments to steer production and consumption towards greater sustainability. Would an ecological tax reform (increasing energy taxes and proportionally reducing taxes on human labour) be a simpler way to achieve the same target? Higher prices for fuels, mineral fertilizers (high energy input of Haber-Bosch process) and animal feed would probably be most effective, but not politically feasible (tax reforms have failed so far to attract votes).
- The internalisation of external costs could be an effective instrument for achieving more sustainable production and consumption. The challenge with this solution will be determination of the “true” external costs for agricultural products.

Additional comments from participants:

- Multidisciplinarity is not only a key issue when discussing climate change and agriculture, but also in the context of sustainable consumption.
- Regulations should be developed to reduce the enormous amount of food waste.
- The problem of post-harvest losses in the South must be taken into account in the discussion of sustainable consumption.
- Agricultural research and consulting must be strengthened to make consumption more sustainable, , which requires a corresponding increase in necessary resources.
- We have a great deal of know-how about sustainable consumption – however political will is lacking and implementation of know-how is slow.

Additional sources:

- INFRAS 2006. Switzerland's ecological footprint, a contribution to the sustainability debate. Edited by Federal Office for Spatial Development (ARE), Agency for Development and Cooperation (SDC), Federal Office for the Environment (FOEN), Federal Statistical Office (FSO), Neuchâtel 2006, ISBN: 3-303-21020-9.
- Global Footprint Network 2008: The Ecological Footprint Atlas 2008.
- Global Footprint Network 2009: The Ecological Power of Nations: The Earth's Biocapacity as a new framework for international cooperation. http://www.footprintnetwork.org/en/index.php/GFN/page/publications