

Using sustainable intensification meaningfully to increase food security

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In the light of human population growth, global food security is a growing concern. To meet increasing demand for food, leading scientists have called for “sustainable intensification” – defined as the process of increasing agricultural yields with minimal environmental impact and without expanding the agricultural land base. We argue that this definition of sustainable intensification is too weak to merit the term “sustainable”, because it lacks engagement with established principles that are central to sustainability. Sustainable intensification is likely to fail in improving food security if it continues to focus narrowly on food production ahead of other, equally or more important variables that determine food security. Sustainable solutions for food security must be holistic, and must address issues such as the power to access food. We argue that the consideration of distributive and procedural justice can help to put back meaning into the term “sustainable intensification”.

Sustainability

- “meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987).
- Balance human development with environmental integrity.
- Maintenance of resources over time (Kuhlman and Farrington 2010)
- normative goal: attainment of **intragenerational and intergenerational justice** (Pearce 1988).

Agricultural Intensification

- Process of **raising the yield output of land**
- Can be achieved either by **expansion of agricultural land** or by **increasing the intensity** of cropping in existing fields (Boserup 1965)
- Conventionally, intensification has been achieved by shortening crop rotations and fallow times; using irrigation and agrochemicals; using higher-yielding crop varieties; and using mechanization. These activities typically have **negative environmental consequences**.
- Alternatively, agroecological intensification focuses on “natural means” of increasing outputs, for example by incorporating legumes into fields or using agroforestry techniques.



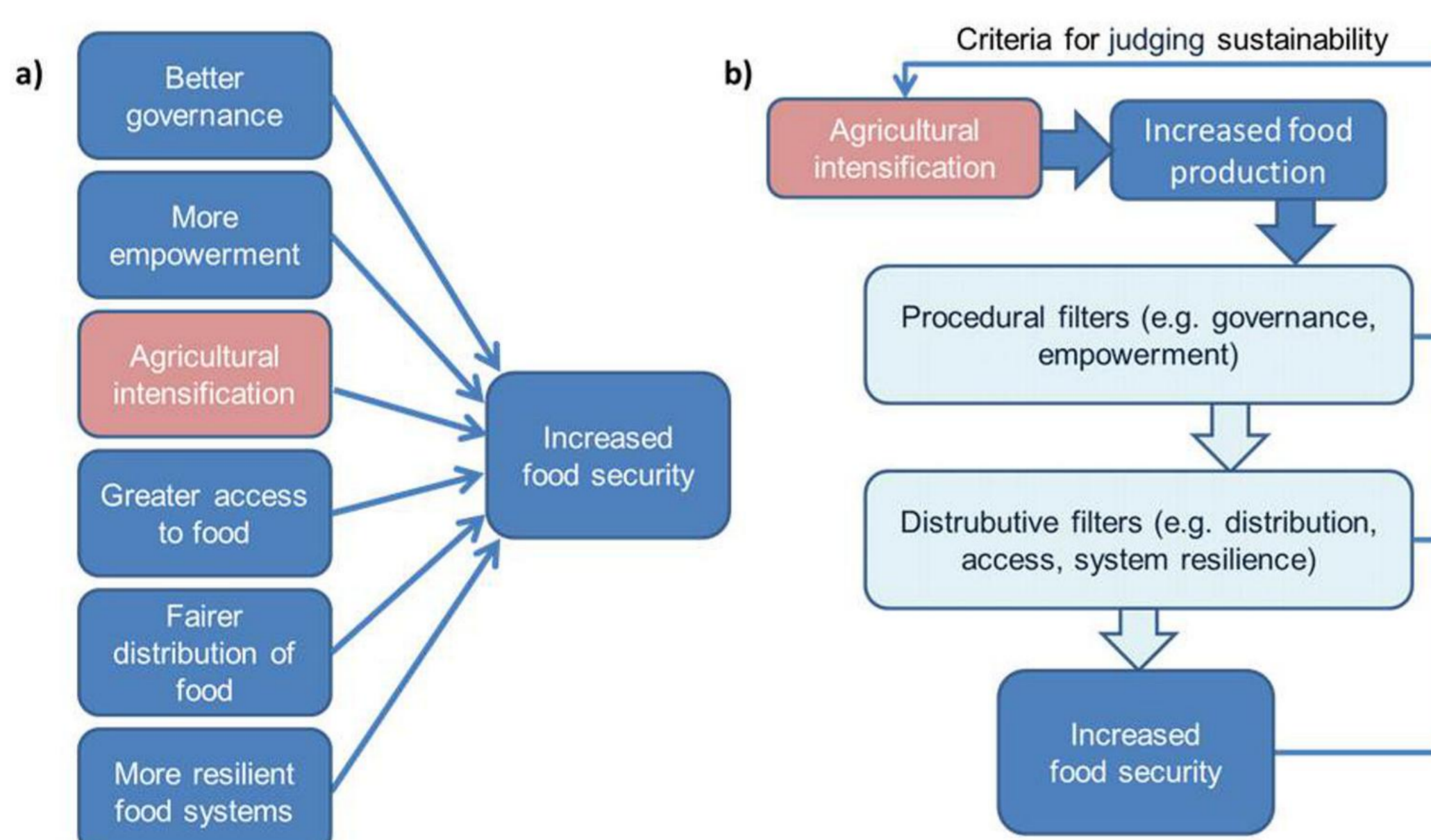
Intensification of Romanian farmland is possible because of yield gaps, but would undermine other ecosystem services and would not benefit those in need of greater food security.

Sustainable intensification

- Concept originated from Sub-Saharan agriculture in the 1990s.
 - Aim: **raising agricultural yields while also benefiting the environment and the economy** (Pretty 1997).
 - In its original formulation, sustainable intensification focused on building **adaptable, pro-poor farming systems**.
 - Nowadays, proponents of the concept argue that sustainable intensification of agriculture is needed to meet increasing food demand and foster global food security, ideally without causing environmental harm.
- intensifying the use within existing fields more sustainable way of meeting rising demand for food?

Food for thought:

- Agricultural intensification alone is insufficient to guarantee food security, as long as procedural and distributive aspects are not considered.
- In its current use, the term “sustainable intensification” is often weakly and narrowly defined, and lacks engagement with key principles of sustainability.
- Food security can only be achieved through a holistic agenda that looks beyond production, targets appropriate spatial and temporal scales, and considers regional particularities.



Contrasting ways to conceptualize the role of intensification for food security. (a) Conventional view of several variables influencing food security, implying that variables are independent and additive. (b) Alternative view, highlighting interactions and conditionality, with increased production only increasing food security if it passes through distributive and procedural filters. According to this view, intensification can only be said to be sustainable if it successfully passes through filters of procedural and distributive justice.

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