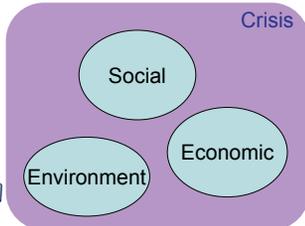


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Current environmental degradation and resource depletion challenge our societies in their fundaments. Scientific evidence show that the negative impacts of our economies are growing, while wellbeing doesn't seem to follow this trend. Degrowth theories - i.e. a transitional period to reach global sustainability - tries to solve the ecological and social crisis through a shift in our socio-economic paradigm. To support political and societal decision-making processes, some indicators could be helpful. In all societies, the agricultural world can be seen as the most important sector of production. We are not completely reinstituting Physiocrats' view, but agriculture is well presented as the foundation of the activities, due to many implications in others sectors. Our way to be farmer can determine the quality of soils, water and food. Health is strongly related to what we eat. More, here we can find precious indications about our relation with Nature and the way we consider it: fight or collaboration. The global crisis occurring in the farmer world - plenty of farms disappear every year around the world - is not a detail. Optimistically, many considerations are dedicated to tomorrow agriculture. It should be free from petrol use (as inputs and energy), extensive, local and environmentally sound. Farmers have to live directly from what they produce but this sector should be away from global profit focus. We can see it as a public service, providing many implications in other sectors and pushing them into the transitional period. Another application of the precautionary principle is the upholding of GMO on laboratories. This kind of seeds is directly linked with an intensive, centralized and profit-oriented agriculture. In this article, we propose a set of indicators focused on the agricultural world in a degrowth transition period. These indicators could next be aggregated in one index, able to launch the debate and its appropriation by the Civil Society. We propose to construct such an index with a kind of pyramid approach, highlighting a gradation inside the different levels. The current paper represents the beginning of a work in progress. The indicators are submitted to the debate, in a way to underline his abilities to engage the paradigm shift.

Motivations:



Agriculture

- (focus : developed countries)
1. A 'sector' of activities; economicisation of the vision and practices
 2. Decrease of the employment rate and high concentration levels (extended area by farms).
 3. High level of mechanization (powerful and expensive tractors, machines).
 4. Chemical inputs (fertilizers and biocides).
 5. Monocultures and specialization.
 6. Dependence on petrochemical industry and agro food system.

Degrowth transition

Map of values:

Implementation

- No unique solution
- Individual level
- Collective level
- Political level

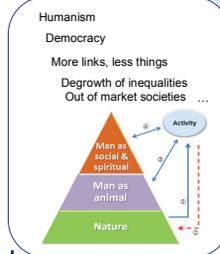
Towards a degrowth society

Dynamic stability

Decolonize the imagination

- To take seriously the ecological alert
- To take seriously the social alert
- Critical spirit
- To go out of the growth religion
- To deconstruct the evidences

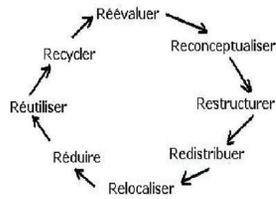
Map of values:



Need some indicators dedicated to agriculture in a degrowth society

Methodology:

"8Rs" program (Latouche)



Significance

Proposed variable

1/To revalue:	Shift in values and perception about 'good' agriculture. From war to cooperation: a) between Humanity and Nature through sustainable practices (like organic farming, maintain of habitat diversity). Counter-example of sustainable agriculture is perceived as transgenic plants. b) between People through the links between people around farming practices (associations for the maintenance of rural agriculture (AMAP in French) or the collective purchase groups (GAC in French). The labor-union can be a good indicator of Political commitment for the farmers.	Δ (organic farming areas) ≥ 0 Δ (habitat diversity areas) ≥ 0 Δ (transgenic plants areas) ≤ 0 Δ (AMAP, GAC, ...) ≥ 0 Δ (labor-union participation) ≥ 0 Δ (vegetable garden areas) ≥ 0
2/To reconceptualize:	We question the objective of farming and its first major goal: to feed people. In a degrowth transition, the food is not only an amount of calories a day. Due to health and environmental impacts, current high level of meat consumption should decrease and shift to a balanced proportion between vegetable and animal proteins. The quality is also a part of the problem and initiatives like Slow Food Movement are directly connected with degrowth philosophy. Advertising for junk food has to sharply decrease to stop the demand for such food.	Δ (% of animal protein consumption) ≤ 0 Δ (Slow Food Adpts) ≥ 0 Δ (junk food advertising) ≤ 0 Δ (obesity) ≤ 0 Δ (% of Organic food consumption) ≥ 0
3/To restructure:	The production structure has to be adapted to the new set of values. Due to a lower fuel intensity, more human work could be requested in the agriculture. It would lead to an increase in the farmers into the population, with a reduction of the average size of farms (crop areas). This land restructuring need to be coupled with a shift from monoculture areas to multi-species and extensive agriculture. To ensure a cyclic process, each farms could keep mixed activities (crops and breeding).	Δ (% farmers in population) ≥ 0 Δ (small-scale farming) ≥ 0 Δ (mixed farming areas) ≥ 0 Δ (% of co-operatives) ≥ 0
4/To relocate:	Relocalization appears as a consequence and a solution to the future peak oil, and offers the possibility to create links and social relations where people live. Current high level of transportation for delivering goods is unsustainable and could evolve with a reduction of "food miles". Three domains can support the process: a) the choice of crops through local and adapted seeds, b) the transformation/distribution of the products and c) the financing with models like co-operative.	Δ (use of local seeds) ≥ 0 Δ (food miles) ≤ 0 Δ (% of income from local sales) ≥ 0 Δ (% of co-operatives) ≥ 0
5/To redistribute:	Degrowth is first a decrease in inequalities at every scales, then a redistribution of food production. The redistribution touches also the power to decide on food orientations to preserve from bad orientations with the concept of alimentary sovereignty. At the countries scale, higher food self-sufficiency should prevent current level of transportation for delivering food for example.	Δ (people suffering from malnutrition) ≤ 0 Δ (food waste) ≤ 0 Δ (alimentary sovereignty areas) ≥ 0 Δ (food self-sufficiency areas) ≥ 0
6/To reduce:	Two main reductions are presented: a) the impact on Nature and on Humanity and b) the dependence on fossil fuels and chemicals. These reductions could allow to reach a sustainable farming model and support the other steps of the process.	Δ (living organisms per gram in soil) ≥ 0 Δ (spermatozoids concentration) ≥ 0 Δ (tracked down cancers) ≤ 0 Δ (% people suffering from allergies) ≤ 0 Δ (doses of chemicals inputs) ≤ 0 Δ (fossil energy requirements) ≤ 0
7/To re use	Many former practices could help us to achieve the transition process. For example, the use of fertile seeds allows not to depend any more on big seed groups and to obtain adapted local varieties. About the recycling process, we should reach a full recycling of the nourishing elements via local composting areas.	Δ (% of fertile seeds) ≥ 0 Δ (Composted waste) ≥ 0
8/To recycle:		

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Next steps

1. Multivariate analysis
2. Data Normalization
3. Weightings and aggregation
4. Robustness analyses