The orthodox economic model does not steer us towards sustainability

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1. The mainstream standard production function is not able to steer transition towards sustainability, as defined by the Sustainable Development Goals of Agenda 2030 (SDG).

Standard production function: Q = f(K,L) where Q is Gross Domestic Product (GDP), K is capital services and L is labor input. Capital and labor inputs are (to some extent) substituable, e.g. more machines can compensate for a lack of labor.

With respect to the environment/nature, this function may be maximized "subject to" that environment is not harmed. Environmental damage is "external" to the production process. At best the polluter (upstream) needs to compensate the downstream firm for the cleaning of the water. The social effects of production, e.g. increasing discrepancies in income and wealth distributions, labor conditions, lack of inclusion, the health effects of this system of production are ignored (physical and mental illness), as well as the increasing polarization of society and the threat to social cohesion – all parts of the SDGs.

We know that in this neoclassical concept nothing figures which does not have a market price. Thus, this production model has brought us to the present predicament with respect to the climate crisis, the pernicious loss of biodiversity and increasing polarization with its effects on the attractiveness of populists.

2. If we take transition towards sustainability seriously, we have basically two options: a) extending the existing concept of production, b) radical change

A new transition-oriented production model must have human wellbeing (Q^*) as its objective (instead of GDP). This goes far beyond material Q, and requires social and environmental services (including climate) as essential inputs.

The unit to be "optimized" (not maximized like in the standard model) must be human welfare, not GDP; this corresponds to Sustainability Indicators agreed by UN in 2015 (Agenda 2030), the UN Human Development Indicators or the OECD Bewtter Life Index, or the Stiglitz-Sen-Fitoussi indicators. Various studies have attempted to replace GDP as the main objective of economic/social policy. So far they have not been able to wean policymakers of their GDP/growth fetishism.

Thus $Q^* = f(K,L,E,S)$, where E is environmental services and S is an indicator of social conditions. In this way, all inputs are essential to the production process, none is "external". While these inputs may be substitutable to some extent, the environmental input is a **finite factor**: once certain trigger points are reached, "planetary boundaries", they cannot be traded off by other inputs. Whether such absolute limits exist for the social indicator, is a highly political question to be discussed.

3. In making such a new concept of production conditions **operational**, one could rely on M. Mazzucato's "mission-oriented" approach. The mission of inclusive and sustainable wellbeing (approximation of Q*) would be broken into defined sub-targets and furnished with enforceable timeline and measurable indicators. For each sub-mission all available resources, especially experts, government, civil society, instruments of government intervention would be mustered, in addition to the necessary capital.

In addition, each government intervention would contain socio-environmental conditionality, i.e. have to incentivise or prevent desirably or damaging environmental and social objectives.

In this more comprehensive approach K,L,E,S usage is seen jointly: there may be synergies, but there may also be tradeoffs between these "production factors", their joint optimization keeps all of them as instruments towards wellbeing at a "sustainable" level. Negotiation processes would have to balance them towards to optimal human wellbeing level.

This switch towards human wellbeing ("a good life for all") requires also a change in political processes. Much more involvement by civil society, by experts, by social partners both into the design as in the implementation of such missions would be necessary. A pre-parliamentary process of "citizens fora", "focus groups" and similar assemblies would deliberate about the individual strategies, negotiate tradeoffs and advise parliament on the desired course of action. In this way understanding of different interests will be enhanced, as well as knowledge about the bottlenecks and sticking points of different proposals. Transparency and professional organization is key.

- 4. A more radical approach would aim at "systems change". The question whether a capitalist, profit-driven model can accomodate such changes has been answered by Adorno: "there is no right life in the wrong one" (Adorno); this would militate against the more gradual extension steps outlined above, calling for a radical re-ordering of socio-economic life, away from a capitalist profit-driven system towards a commons-determined system.
- 5. We know that the required change in behavior to achieve sustainability is difficult and widely resisted by populations, as well as powerful vested interests. But: socio-economic systems are manmade, thus can be changed by man. We saw such a change in the break from the more collective-minded Keynesian after-war system to the painstakingly engineered neo-liberal system dominant today. Friedrich Hayek with the Mont-Pelerin Society managed to infiltrate academia and mainstream economic thinking. The existing crises make the next step forward necessary.