

**Embedded linkages between social policies and innovation policies**  
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The paper builds on the idea that embedding social policies within innovation policies and vice versa is one of the main ways to put the might of academic research at the service of those at the bottom of the pyramid. The aim of the paper is to analyse systematically the problems that prevent research to fulfil the promise of modernity and progress for vast majorities of the world population and to propose ways to overcome such problems.

1.- The points of departure are the following:

- i) Science, technology and innovation have not been able to fulfil the promise of equitable progress for mankind.
- ii) This is linked to the simultaneous failure in the developing world of the three flags of the French Revolution (equality, freedom, fraternity). There is more and more inequality in the world; “development as freedom” implies “underdevelopment as un-freedom”, and so un-freedom is how we can describe the state in which most of the world population is embedded in; fraternity, solidarity, seem to have been pushed into the realm of private life, not serving as an inspiration for public policy.
- iii) The role of research in the “globalized capitalist knowledge economy” does not respond anymore, not even ideologically, to the stylized Mertonian norms of academic science as open science; it does not take on board either the problems of those at the bottom of the pyramid. Without finding ways, even interstitial ways, for alternatives roles for research to flourish, the proprietary way of producing knowledge for capitalist profit (that is following the rules of the market) will prevail without contests.
- iv) Economic growth “trickle down” strategies to put knowledge to the benefit of the poor have failed all over the world. Even there where important economic growth took place, for instance Latin America in the last 20 years, the deterioration of the social situation and particularly of inequality was huge. The equation “research for competitiveness + economic growth stemming from improved competitiveness + money spare to finance social policies able to redress inequalities of the past as well as the new ones” is not working. Is this a problem of a badly implemented good strategy? We posit that this is not the case, and we put forward a more systemic explanation of this failure.
- v) An “interstitial ” way to put knowledge at the service of the poor is to embed innovation policies in social policies and the other way around. (We use interstitial in the sense that it does not try to compete overtly with the main role of research in the knowledge capitalist economy but emerges in interstices of actual ways of doing research in present institutions). This leads to include explicitly a normative dimension in science, technology and innovation analysis and policy by adding to the intertwined taxonomy of “physical technologies” and “social technologies”, the category of “inclusive technologies”, that are those which aim is to put the might of knowledge at the service of the more disfavoured part of the population. In this way, fraternity can be reintroduced as a guiding criteria for public policy.

2.- The paper will concentrate in one realm of the failure to fulfil the promise already mentioned: the fact that physical technologies exist or knowledge exists, able to solve some problems of those at the bottom of the pyramid but they are not solving those problems, for lack of accompanying social technologies or for lack of an inclusive inspiration in the development of alternative solutions.

We will explore:

- i) Examples of mismatches expressed as existing technologies to solve problems that are not solving problems for poor people: examples are, for instance, vaccines and medical devices that are too expensive (to buy, to apply or both), solutions that are rejected for different reasons, solutions that need infrastructures that are not in place to be used (for instance, cold chain, potable water, constant energy supply), solutions that do not diffuse and remain encapsulated.
- ii) A taxonomy to classify the former situations, tentatively cost of the solutions, technical requisites of the solutions, failures in delivery, failures in taking into account what people want and what people know, other types of social failures.
- iii) Examples of overcoming mismatches related to the previous taxonomy: a short account of these successes will be given, searching for the main factors explaining why the search for an inclusive technology entered the policy and academic agenda, the type of difficulties that appeared and how they were solved, as well as the prospect for going further from the new knowledge produced.
- iv) The previous examples of success will be classified in “scaling-up” and “non-scaling up”, that is, punctual solutions that can alleviate a micro situation, with potential to solve problems at macro scale but that fail to do so, and solutions that diffuse and reach important parts of the population.

3.- The paper will proceed then to propose explanation for points iii) and iv) above. A first issue to be addressed is: What have in common the successes in each cluster of the taxonomy? It can be proposed a check-list for explaining success, that should include elements like motivation, decision power of the actors involved, trust between the main social actors that intervene in the specific innovation circuit that led to success, social capital and capacity and strength of LICs (learning and innovation capacity building) at national level. A second issue to be addressed relates to the micro-macro relationships, key to understand what differentiates non-scaling-up from scaling-up solutions. A third issue will be to overlap mismatches and successes (related to the overcoming of the former) to explore what have these successes in common, trying to derive some general lessons.

4.- A final point will be made showing how innovation policies conceived partly as social policies, and social policies conceived partly as innovation policies, can help to build solid trends from the main detected factors of success in overcoming mismatches between knowledge possibilities and real solutions for problems of the deprived populations.