

Social Technologies

Learning from local communities

João N. Pinto

Research Fellow at the Institute of Hunger Studies¹

Social Technologies (STs) arose from the need to approach social inclusion through a technological view that could counterbalance the dominant model of producing innovation which is based in an economic rationale. Thus, it is necessary to find other solutions that value non-scientific knowledge². Most conventional technologies have been conceived and developed in the North with little (or none) influence from communities and/or from the academic and scientific fields from the South. As a result, we might be wasting a wide range of social and technological experiences³. STs and their transforming potential have emerged in the context of these alternative experiences, creating virtuous development circles which can lead to social emancipation and showing that it is possible that innovation and technology work in favour of the general interest of societies. The term "Social Technologies" has been used in Brazil⁴ since 2001 but, besides this designation, other terms are used to describe alternative approaches to technological innovation. For example, in India the term "Grassroots Innovations"⁵ is used from several years; and FAO has also promoted some alternative approaches under the name of "Proven Technologies" and "Good Agricultural Practices"⁶.

What are Social Technologies?

Social Technologies (STs) can be defined as *"a set of techniques, transforming methodologies, developed and/or applied in interaction with populations and adopted by them, which represent solutions for social inclusion and improvement of livelihoods"*⁷. They are mainly characterised by their simplicity, low cost, and simple implementation based on local resources and on available labour. In this way, they contribute to the generation of income and employment, besides promoting an improvement in the quality of life for communities through local development processes. In general, STs are the result of popular knowledge and wisdom, although they may also arise from interactions between popular and scientific knowledge. STs involve different spheres such as health, food, education, housing, work, and income generation, etc. The *Appropriate Technologies* are also an approach to conventional technologies but they have been criticised with the main argument that they represent a neutral view of technology, which does not perceive the spirit of social construction involving the social actors benefiting from the technologies created⁸. Therefore, the focal point is that they are social constructions with particular characteristics, which are created by the environment they are developed in, causing social emancipation with positive economic, social, environmental impacts, etc.

The main characteristics of Social Technologies:

- Mainly adapted to low-income small producers and consumers;
- Rejecting control, segmentation, hierarchy and dominion in labour relations;
- Internal market-oriented;
- Promoting potential and creativity of producers and users;
- Adequate to economic facilitation of business ventures such as popular cooperatives, incubators and small undertakings.
- Mostly multifunctional and suited for solving more than one problem at low cost.

The relevance and usefulness of STs can only reach those who really need them if they are given adequate visibility and if they are appropriately disseminated and reapplied. Furthermore, the *reapplication stage* is probably the most important one, for which it requires further information. It is

important to emphasize that reapplying technologies does not mean transferring them from one place to another, even if the problem that originated the development of a particular ST is the same in both places; for in practice, the solution developed in the first community may not work in another community. However, the available information is still widely scattered in the organisations and communities that develop STs, which means that, at this point, they only represent partial solutions, given their isolation. It is necessary to carry out an adequate systematisation and dissemination process, which enables the reapplication of these technologies at a larger scale. This could be done by adopting correspondent public policies.

How can Social Technologies promote Sustainable Food Security?

The guarantee of access to and availability of adequate food, based on healthy food habits that respect cultural diversity and environment preservation reveals the multidimensional and intersectoral character of the *food security* issue. Several significant factors contribute to aggravate hunger and poverty such as the lack of access to resources and/or the inability to transform their resources into capital assets⁹. As we mentioned before, STs involve different spheres so they can contribute to promote food security, for the latter also depends on a set of varied and interconnected factors in several areas. In essence, through their “inter-linkages” (backward and forward linkages), STs enable an articulation between the several activities of productive structures in specific local economies. These linkages integrate several productive and value chains in a solid emancipatory process.

Hegemonic technological patterns have promoted social exclusion and aggravated hunger. In turn, STs can contribute towards changing this scenario by involving people and transferring their knowledge, experiences and innovations to other populations. For that, the social construction of STs should include several key-actors – communities, social movements and organisations, policy-makers, scientific community, etc. – in both their development and dissemination processes. Although the importance and the need of urgent public policies is widely recognised, the focal point of these policies should be the sustainability of processes which can generate employment and income from communities themselves, and which can create virtuous circles of development and enhance the fulfilment of the right to food.

Some examples of STs

Some STs introduce small innovations that significantly improve the productive processes of communities (as it is the case of the **Pedal Pump for irrigation**). Other STs introduce methodologies or processes that guarantee a better community organisation in dealing with products that have a significant aggregate value (such as **Socio-Participatory Certification**). Another group consists in small equipments or appliances which enable food conservation or access to clean water (such as **Solar Dryers** or **Solar Desalters**), or direct access by populations to fresh and chemical-free food (such as **Community Gardens**). Moreover, these technologies can also be articulated with several social programmes connected to food supply, distribution, commercialisation, and food and nutrition education. There are also examples of STs that originated public policies in some southern countries thanks to the involvement of social organisations. For example, in Brazil, the adoption of the “**multi-mixture**” (food supplement for combating undernutrition) as a food security policy or the construction of **cisterns for rainwater storage** which supply the Brazilian semi-arid region during droughts and which are used for a long time in the Northeast. This has also become an important policy within the Zero Hunger Programme.

Potential Contribution of Social Technologies to Mitigate Climate Change

Discussions on the problems arising from *climate change* are presently on the political agenda since its negative impacts are increasingly more evident. That is why it is necessary to act urgently in order to find alternatives that may diminish the consequences of climate change, fight its causes and help people adapting to new climate standards. Particularly regarding food security, climate change creates serious risks to poor farmers - the highest share of the population suffering from hunger and food insecurity. They are the most affected group, mainly due to three reasons: i) the majority of these farmers live in areas in Africa, Asia and Latin America where the impacts of climate change are most intensely felt; ii) they are less prepared to face the effects of this change since they have limited access to resources, a lower income and have limited social protection, which would help them facing this scenario; and iii) generally, these farmers are dependent on rainfed agriculture, which is the most affected food production system.

It is possible to identify at least one main way in which STs can contribute to mitigate climate change: by contributing to minor climate change consequences since they represent adapted alternatives which can help poor farmers to overcoming these changes. We believe that the most significant examples are those STs that provide water harvesting and management, which can contribute decisively to minor the effects of climate change for poor farmers¹⁰. Besides water harvesting and storage, some STs are simple and low-cost irrigation methods adapted to smallholder farmers who are not able to face prolonged droughts. Prolonged droughts also have serious consequences to water for human and animal consumption. Some STs contribute to the harvesting of water for these purposes, as it is the case of the low-cost solar desalters.

The IEH/ActionAid Social Technologies Initiative

ActionAid's Territorial Development Initiative uses a farmer-to-farmer methodology and carries out a survey on social technologies. The IEH, ActionAid's partner in some initiatives related to the right to food, has been trying to gather and disseminate information on STs that promote food security. Taking into account both initiatives, ActionAid proposed a partnership between the two organisations with the following objectives: to raise awareness and to promote the discussion on STs; and to encourage information and experience exchanges among organisations and communities in order to facilitate a common search for alternatives to particular problems. This partnership will profit from the participation of ActionAid's International Food Security Network (IFSN), which comprises more than 500 organisations in 22 national and sub-regional networks in Africa, Asia and Latin America.

The main activities consist in the identification and selection of relevant information on STs and in the identification of organisations and communities that already have some experience with STs, and which intend to share it with others, contributing to a joint search for alternatives. In order to do that we are launching two on-line tools that are available both in the IEH website (www.ieham.org) and in the IFSN website (www.actionaid-ifsnet.net): a **Thematic Library**, in which useful information for disseminating STs is organised and available, and a **Discussion Forum** for promoting contact and sharing opinions from organisations and individuals interested in STs. The success of this initiative depends on the participation of all those involved, so that we can jointly identify and disseminate successful experiences which will be useful for several regions and communities.

¹ The *Hunger Studies Institute* (IEH) is a non-profit and independent organisation, which aims at fighting against hunger and which congregates researchers, teachers, and technicians from Southern and European countries (www.ieham.org). This article is based in a conceptual paper prepared by the IEH for ActionAid.

² SANTOS, Boaventura de Sousa. *Semear outras soluções: os caminhos da biodiversidade e dos conhecimentos rivais*. Rio de Janeiro: Civilização Brasileira, 2004.

-
- ³ SANTOS, Boaventura de Sousa. *A crítica da razão indolente: contra o desperdício da experiência*. São Paulo: Cortez, 2000.
- ⁴ For further information on the Brazilian experience on Social Technologies, please see the *Social Technologies Network* (www.rts.org.br) or the *Institute of Social Technology* (www.itsbrasil.org.br).
- ⁵ Information on "Grassroots Technologies" from India can be found, for example, in the *Grassroots Innovations Augmentation Network* (www.gian.org), the *National Innovation Foundation* (www.nifindia.org), the *Society for Research and Initiatives for Sustainable Technologies and Institutions - SRISTI* (www.sristi.org) or in the *Honey Bee Network* (<http://knownetgrin.honeybee.org/honeybee.htm>).
- ⁶ For further information on "Proven Technologies" and on "Good Agricultural Practices", please see the FAO initiatives *TECA* (www.fao.org/sd/teca/index_en.asp) and *GAP* (www.fao.org/prods/GAP/index_en.htm), respectively.
- ⁷ INSTITUTO DE TECNOLOGIA SOCIAL. Reflexões sobre a construção do conceito de tecnologia social. In: *Tecnologia Social: uma estratégia de desenvolvimento*. Rio de Janeiro: Fundação Banco do Brasil, 2004.
- ⁸ DAGNINO, R., BRANDÃO, F. e NOVAES, H. Sobre o marco analítico-conceitual da tecnologia social. In: *Tecnologia Social: uma estratégia de desenvolvimento*. Rio de Janeiro: Fundação Banco do Brasil, 2004. pp. 15-64.
- ⁹ We understand the several types of capital assets as: *Produced capital* - material resources, such as production assets and financial resources; *Natural capital* - natural resources such as land, water, biodiversity, etc.; *Human capital* - education, health, nutritional status, etc.; *Cultural Capital* - set of practices, customs, beliefs, values, habits; *Social capital* - norms and networks that facilitate collective action and mutual benefits. (According to BEBBINGTON, A. *Capitals and Capabilities: a framework to analyzing peasant viability, rural livelihoods and poverty in the Andes*. London: IIED.DFID, January 1999).
- ¹⁰ According to the *Human Development Report* (2006), agriculture, and consequently food production, will be the most affected sector by these problems. In some regions, the variation standards in rainfall patterns and decreases in water availability will reduce crop yields in 25% or more by 2050. Global undernourishment will increase 15% to 26%, which means that 75 to 125 million people are estimated to suffer from this problem by 2080.