

Understanding and changing farming and food & fiber systems. The organic cotton case in Mali and West Africa

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Abstract: Science should be capable of covering as diverse issues as farming systems, technology, innovation, climate change adaptation, poverty alleviation, extension, policy, and practice, as they all relate to sustainable agriculture and development. Some years ago, the call for a new farming systems approach was raised to accommodate the principles of interdisciplinary, systems thinking and participatory research. Societies call for system performances like stability and sustainability (SDGs!), multi-scale and territorial approaches and look for solutions for critical issues like employment, migration and inclusion/exclusion at World Society level. We propose here a way in dealing with this complexity by addressing the mentioned problem from the communication and symbolic perspective, i.e., to consider the "object" within the agricultural science but mainly observe the dedicated systems of communication. By using the concept of social systems, we can accommodate under it as diverse systems as farms, extension organizations, innovation patterns, (agricultural) sciences, policy and politics, farmer and indigenous knowledge, markets and value chains- but always in the form of communication. As such, we remain within a discipline with the potential to evolve towards a promising sub-discipline of the agricultural science (or of sociology?). The relatively new farming approach of certified organic in combination with agroecology is relevant for family farms and small-scale entities. It depends much more than the commercial farms on societal support for the extension, technology development, and policy coherence. Mainly organic agriculture is nested with its standards, technological requirements and consumer preferences in socio-economic and political networks, which makes it challenging for researchers to integrate the various components. This challenge applies in particular to countries with poorly developed institutions, weak organizations and within the context of poverty and rural exodus. We use therefore a unified approach under one scientific system which observes, analyses and reports on the communication sides of the involved (observed!) social systems (including networks and interactions) within the given national society including the realities of the globalized markets. We are developing a case from Mali, in which we apply this method. The case is describing a planning process involving cotton farmers from the Sikasso region, the cotton industry, the public and private extension system, farmer organizations, local governments, the NARS (IER), FiBL, donors and the national institutions involved in climate change adaptation and food security. Various technological options of production (conventional, organic) and production and farming systems are available. The common ground for most involved actors is to turn the problem of declining soil fertility into new opportunities.

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