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Sustainability transitions of agriculture and the transformation of education and advisory services: convergence or divergence?

Toulouse, 10-13 July 2023

BOOK OF ABSTRACTS

26th European Seminar on Extension & Education

"Sustainability transitions of agriculture and the transformation of education and advisory services: convergence or divergence?"

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Authors

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A Global Foresight Framework for the transformation of national agricultural extension systems: contribution for renewing AKIS

P. Djamen[1,2,3], S. Audouin[2,4,5], N. Alexandrova[6], P. Van Doren[7], Z. Mroczek[6]

[1]Cirad, UMR INNOVATION, Ouagadougou, Burkina Faso
[2] INNOVATION, Univ Montpellier, CIRAD, INRAE, Montpellier SupAgro, Montpellier, France
[3]Université Thomas Sankara (UTS)/ Centre d'Études, de Documentation et de Recherche économiques et sociales (CEDRES), Ouagadougou, Burkina Faso
[4]Cirad, UMR INNOVATION, Antsirabe, Madagascar
[5]Centre National de Recherche Appliquée au Développement Rural (FOFIFA), SRR, Antsirabe, Madagascar
[6]FAO, Rome, Italie
[7]Institut Destrée, Belgique

Short abstract:

This communication presents the first-ever global Foresight Framework co-designed to support the transformation of extension and advisory systems (EAS). The Framework includes global EAS scenarios meant to guide EAS actors to think beyond usual trends, explore alternatives and integrate global drivers that they would not have considered otherwise. It has practical implications for the reform of EAS systems. This framework was tested in Madagascar, Azerbaijan and Liberia. Theoretical implications on the interest of foresight and the place and role of EAS in AKIS/AIS[23] were identified. Potential evolutions of EAS in the AKIS/AIS configuration and operation were explored.

Key words: extension, reforms, foresight, policy

Extended abstract

Purpose

In the context of unprecedented agrifood challenges, agricultural extension and advisory services (EAS[24]) must rapidly adapt and be rethought to remain relevant and effective. Due to the low predictability of the agrifood systems, the great diversity of the EAS clientele, the multiactor composition of EAS systems with actors with different interests, capacities and drivers, the design of an effective and transformative EAS system policy and institutional strategies becomes a very challenging endeavour. Traditional approaches to renewing EAS, generally rooted on deductive approaches based on major trends, have shown their limits. To address those limitations, FAO embarked on a Global EAS foresight to mobilise a wealth of knowledge and vast expertise to exploring global trends- manifesting or silent, regional and country specificities and allow a transformative and analytical policy making in absence of experiential facts. FAO engaged with CIRAD to address the lack of methods and knowledge on foresight applied to EAS reform processes. This communication presents the characteristics, implementation modalities, and practical and theoretical

[23] There are two terms with identical content: Agricultural Innovation System (AIS) "is a network of actors (individuals, organizations and enterprises), together with supporting institutions and policies in the agricultural and related sectors that bring existing or new products, processes, and forms of organization into social and economic use. Policies and institutions (formal and informal) shape the way that these actors interact, generate, share and use knowledge as well as jointly learn" (TAP, 2016).

Agricultural Knowledge and Innovation System (AKIS) refers to "a set of agricultural organizations and/or persons, and the links and interactions between them, engaged in the generation, transformation, transmission, storage, retrieval, integration, diffusion and utilization of knowledge and information, with the purpose of working synergistically to support decision making, problem solving and innovation in agriculture" (Röling and Engel,1991).

[24] EAS are defined as all the different activities that provide the information and services needed and demanded by farmers and other actors in rural settings to assist them in developing their own technical, organizational, and management skills and practices so as to improve their livelihoods and well-being. In: Five Key Areas for Mobilising the Potential of Rural Advisory Services, (GFRAS 2016).

implications of a global foresight methodological framework developed in a participatory manner to accompany the reform processes of national EAS systems in the perspective of future post-Agenda 2030 agrifood systems. This effort is part of a broader foresight FAO initiative related to emerging technologies and innovations and the innovation policy lab initiative.

Methodological approach

The EAS foresight framework was developed following a participatory and iterative approach including six steps (figure 1). Based on global foresight methods applied to agri-food systems (FAO, 2018 and 2022; Le Mouël et al., 2018), we selected drivers from the future agrifood scenarios (FAO, 2022) as a basis to be enriched and extended towards EAS issues. Through a literature review, we screened drivers that affect food systems and more specifically EAS at global scale, and select them through a DELPHI consultation (Toillier et al., 2021), based on 2 rounds with more than 80 international experts at global level but capturing regional perspectives (step 2). Then we built the morphological table of the drivers (a set of plausible, relevant and contrasted hypothesis of the future) (Bourgeois et al., 2017) and synopsis of EAS scenarios during 2 webinars with international EAS experts (24 participants). In order to ensure that contrasted visions of the future to be elaborated will be well contrasted, we adopted Inayatullah approach (2008) which mobilized a projected, desirable, undesirable, disruptive matrix to build the set of hypothesis of the future for each drivers.

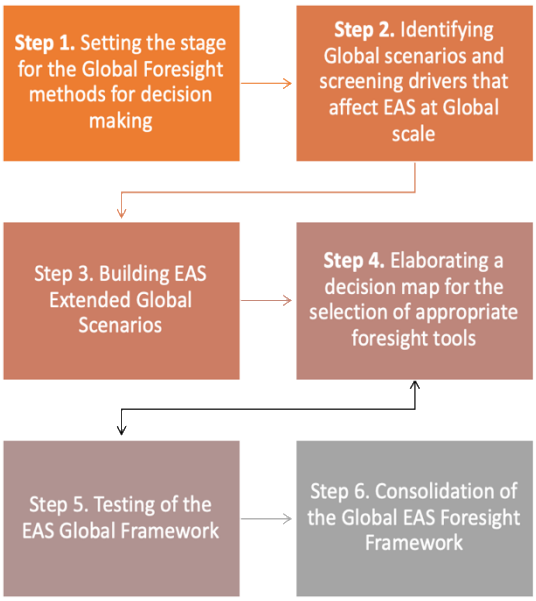


Figure 19. Different steps for the designing of the EAS Foresight Framework

Then, 7 EAS scenarios were built iteratively during back-office sessions with the co-authors of this communication, with a specific attention to the features of future EAS (step 3). Finally, the EAS Foresight framework have been tested in Madagascar, Liberia and Azerbaijan in December 2022 (step 5), following the purpose to explore future pathways for EAS transformation in a context of EAS national policy revision. The testing provided relevant feedback to be considered to consolidate the final EAS foresight framework.

Findings

a. Features of the framework

The EAS foresight Framework is composed of 5 steps (fig 1), that shape activities to support a 2-3 days participatory workshop with actors involved into EAS policy, academic and practical experiences. The fifth step encloses a toolbox designed according to the purpose assigned to the foresight approach.

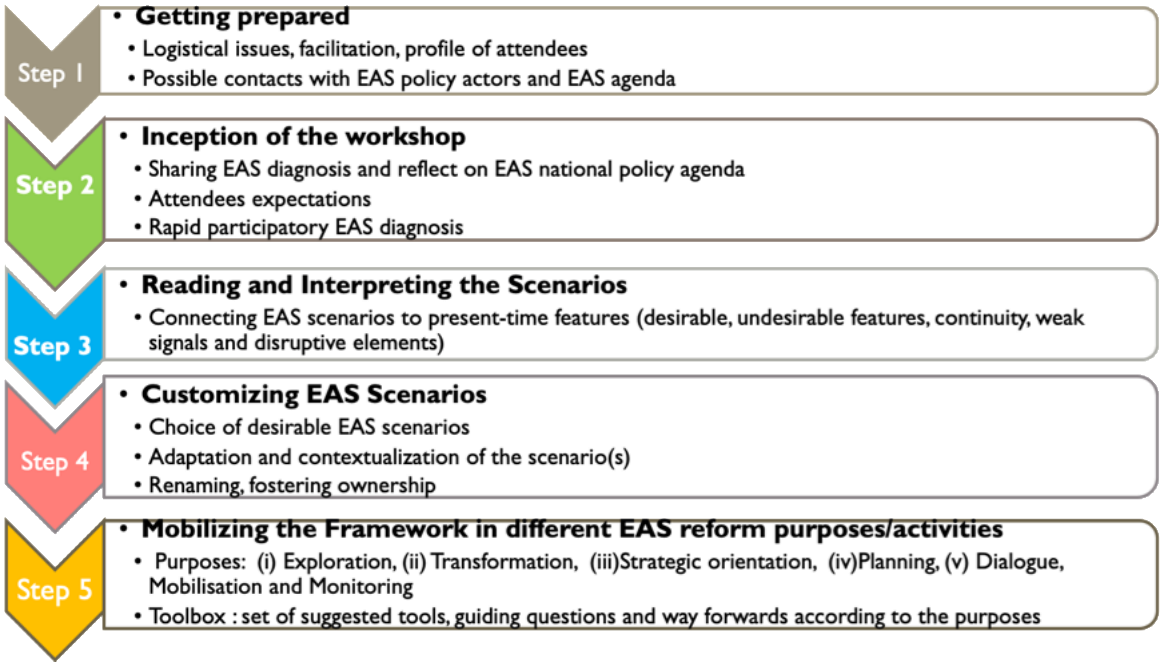


Figure 20: EAS Foresight Framework

b. Seven futures for EAS

Seven EAS scenarios of the future have been identified. They are quite contrasted and highlight different plausible evolutions of national EAS systems.

S1. Dinosaur. EAS have disappeared, because it has become obsolete and absorbed by weak signal dynamics that it did not manage to consider a few years or decades earlier. Knowledge became accessible to all, particularly through online platforms and open data. Due to the agrifood and farmer egalitarism, the role of intermediaries has severely shrunk. Extensionists are replaced by other actors not specialized in the agricultural sector or not specialized in advice. AIS/AKIS are very fragmented and weak. Urban and rural actors manage their part-time interest in food production autonomously and peer-to-peer, enabled by policies, focusing on capacity development. Person-to-person advisors, if they exist, will have a "boutique" function – as traditionally-romantic food producers' gurus.

S2. Total Agony of EAS. Lingering issues of EAS during past decades have not been addressed. Cosmetic measures have been taken but have not solved the fundamental problems. Some reforms of the EAS system have been initiated, but have not been carried through to the end. The added-value of EAS is no more recognized. EAS is underfunded, poorly coordinated though pluralistic. Digitalization is used as panacea but has left many farmers by the wayside and led to a big digital divide.

S3. Archipelago. EAS is a lever for community and equitable development. EAS systems are fully decentralized, dominated by NGOs and in service of an endogenous development and a circular economy that give priority to small-holder producers. Co-creation is the main innovation pathway. However, only the regions with strong potential are developing into archipelagos, while the rest of the world faces a more negative scenario. Decentralization that tends towards autonomy.

S4. Greenverse. The process of reforming the agricultural advisory system and correcting its shortcomings (the subject of scenario 5 below) has been completed, and has made the system more efficient and proactive. Nature positive agrifood systems are prevailing. EAS are pluralistic, responsive to producer and consumer demands, use co-creative, open, inclusive and innovative approaches. EAS systems are results-oriented and accountable to societal challenges. EAS cover all latent or clearly expressed demands of users, whether technical, social, community, environmental, organizational or related to One health issues.

S5. Business Class (pay-as-you-go). EAS are seen as a means of supporting the most affluent producers to improve their business development (productivity, financial profitability). Access to services is fee-based and structured around agribusinesses and large commodity chains. Family farming and substance farming are seen as a dead-end model, budget-wasting and to be discouraged in favour of large commercial farms. EAS highly use of technology and digital-based methods and tools.

S6. Wake-up. This scenario corresponds to a transitional or transformational situation where after awareness of the level of decay of the EAS system, decision-makers and other relevant EAS actors have taken and are implementing adequate measures to correct the structural and historical deficiencies and improve performance and impact of EAS systems. It is characterized by a series of promising reforms of the entire EAS system, including components such as governance, methods and tools, funding, accountability, and the inclusiveness of the service offer. EAS are more and more recognized as a major lever for the development of agrifood systems, there is a trend of increasing political and financial support.

S7. Recovery and Resilience. In a world plagued by frequent natural, social, health and economic crises and disasters, the role of EAS is increasingly geared towards recovery and resilience. EAS systems are integrated with social /civil and health services to mobilize resources and capacities. Unlike in the Greenverse scenario (S4) where EAS are focussed on sustainability broadly speaking, in this Recovery and resilience (S7) the main function of EAS is to support the management of risks and disasters. The functions of direct support to agricultural production and the development of value chains are becoming a minority, as they are being supplanted by the functions of raising awareness among producers and supporting their communities in the development and implementation of risk and disaster management strategies.

These scenarios raise issues, challenges, and disruptions that can be considered in the process of reforming agricultural EAS systems. The testing of the EAS Foresight framework in Madagascar, Liberia and Azerbaijan for example, has shown that these different scenarios are not necessarily exclusive; several of them can co-exist, depending on the diversity of EAS issues in different regions.

c. Evolution of EAS and potential implications for AIS/AKIS

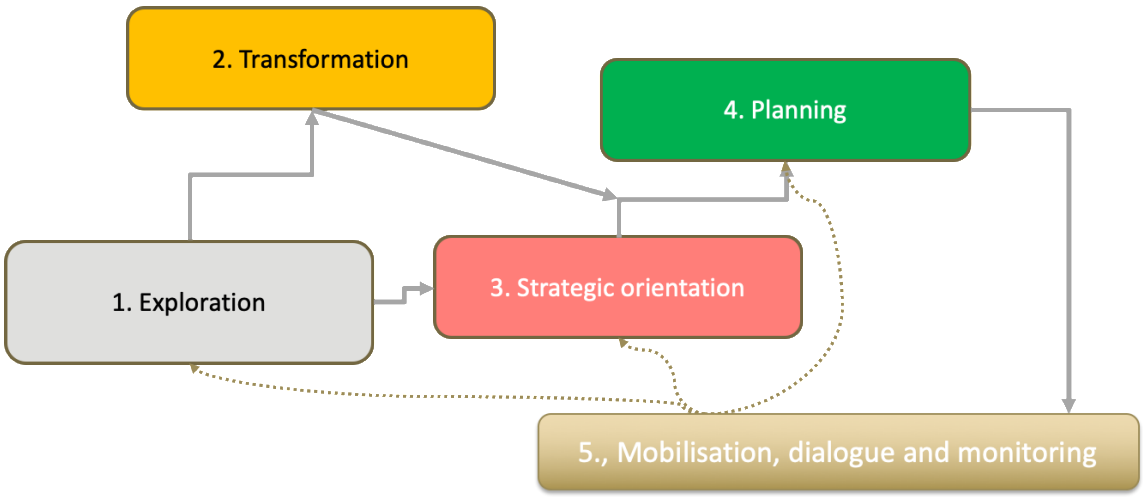
In the seven highlighted scenarios, the role of EAS in AIS/AKIS varies greatly, so do the corresponding agrifood systems and AIS/AKIS themselves. There is a gradient from a situation where EAS have completely disappeared and are no longer part of AIS/AKIS (scenario S1) to cases where EAS play a crucial role in the structure, functioning and performance of AIS/AKIS. Overall, three main profiles of situations can be identified:

- The first profile is where the EAS play a central role in the AIS/ AKIS system, not only participating in the brokering of knowledge, but also in the process of knowledge and innovation co-creation, building the capacity of producers to participate in knowledge production. This multifaceted role is particularly relevant in contexts where AIS/AKIS must contribute to addressing sustainability or systemic issues. In these contexts, the EAS system is also pluralistic and coordinated. This is for example the case with the Greenverse (S4) and Recovery and Resilience (S7) scenarios.
- The second profile is that of a situation with low pluralism of EAS and also weak and undiversified roles in agricultural knowledge and innovation systems. This is somewhat the situation where EAS provided mostly by public organisations or big agro-industrial companies are very much oriented towards technical extension on a few themes or commodities, with increasing productivity as the main objective. The Total agony of EAS (S2) and Business class (pay-s-you-go) (S5) scenarios are representative of this situation. Scenario 1 (Dinosaur) is an extreme case that shows the disappearance of EAS and consequently of AIS/AKIS that would function without EAS. This extreme situation is plausible contexts where demand for services is unified due to the extreme convergence of the agrifood systems into one global system, in which artificial food prevails. EAS therefore does not need to be personalized and can be automated. However, it may also happen if challenges of EAS described in the Total Agony scenario (S2) are not managed, and the emerging trend of EAS as a product linked to other services develops and becomes the rule.
- The third profile: few EAS providers exist but are multifunctional. In this situation, EAS organizations are not very diversified, but have enough complementary skills to play a plurality of roles in knowledge management. This situation can be found in highly centralized systems, with EAS organisations that are very territorially anchored and benefit from substantial means (human and material resources) to meet the diversity of demands. There is a heavy dominance of public or private EAS that managed to put barriers (disincentivise) other EAS so at the end big EAS organisations provide all the services

Practical Implications

The EAS foresight framework (EAS 2F) has several practical implications for national EAS system reform processes. These implications can be classified into five broad categories of purposes: (i) exploration, (ii) transformation, (iii) strategic orientation, (iv) strategic planning and, (v) dialogue, mobilisation and monitoring (Figure 21). Boundaries between these five categories of purposes is not watertight. Results from the implementation of the framework following one purpose can be considered as input, or implementation instrument, for another purpose, as it is the case of strategic orientation and planning.

Figure 21. Main potential usages of EAS Foresight Framework in the framework of EAS transformation



Exploration. The use of EAS 2F in an exploratory perspective is understood both as the study of future developments, trends, breaks and weak signals. It can also be used to identify and understand what could possibly happen - the possible, probable, plausible futures - given the imperfect knowledge of the present. The function of exploration is thus plural. Probable and plausible scenarios for EAS system can be explored is done through the selection and customization of the scenarios presented in the EAS 2F. Such exercise enables the identification of potential outcomes or consequences of upheavals EAS, and more generally consequences (positive or negative externalities) of a given strategic choice (scenario, major change). Exploration translates into a comparison of the different potential scenarios, their added value and limitations, and their consistency with the objectives of the desired reform. Foresight tools such as the Future Wheels can be used to identify potential direct effects of the 1st, 2nd or 3rd order that may result from the choices that are made. Lastly, exploration can help to highlight major elements, or those with strong potential, that are likely to have a positive or negative impact on the transformation of agricultural advisory systems. These may include weak signals, disruptive innovations, pitfalls or mistakes to be avoided, etc. The scenarios enclosed in the EAS include issues, challenges, opportunities, but also avenues for reform or, technical or organizational innovations that may be of interest to stakeholders. The approach includes identification of challenges, opportunities, and possible pockets of the future that already exist in the present and that could be mobilized to achieve the desired future (new EAS system).

Strategic orientation. Here, the EAS Foresight Framework can be used with two modalities. The first modality is to use EAS 2F as an instrument to facilitate the definition of a common vision for the future among actors and stakeholders of the agricultural advisory system. This vision should then serve as a general framework, a reference, for implementing change at one or several levels or components of the EAS system. The second modality it to mobilize the result obtained from the normative use of the EAS 2F to conduct strategic steering. It is then used at any time during the process of setting up or reforming the EAS system to check whether activities undertaken are coherent or whether their design or implementation approach must be reviewed to effectively contribute to the realization of the vision that has been developed. The of of EAS 2F for strategic orientation use produces broad strategic directions. It highlights the ends rather than the means, the objective being to guide the introduction of change (reform) in the structuring, functioning or practices within the EAS system. The result (i.e., strategic vision) of this use serves as a basis for planning, which in turn will focus exclusively on objectives and means.

Planning refers to defining the necessary measures for the design or reconfiguration of the national EAS system based on the new strategic vision that has been set. This strategic vision is built on selected desirable EAS scenario after possible customization, especially by adding other elements of the local or regional context, and/or other features from other EAS scenarios enclosed in the foresight methodological framework. The use of this tool help to think planning in a different way. It is no longer a matter of starting with the present to identify the successive actions required to achieve the strategic vision. Instead, participants start with the desired EAS scenario and describe the successive changes required and the actors involved. Foresight tools such as backcasting are particularly suitable for this exercise. The analysis and thematic grouping of the various successive changes needed to achieve the new vision of the EAS can help identifying the strategic axes. In the Madagascar for instance, the use of the framework to explore potential pathways for renewing EAS in the framework of the producers' services strategy under development enable the identification of the following potential strategic axes were identified: (i) coordination and regulation; (ii) professionalization of EAS; (iii) innovative financing; (iv) renewal of EAS methods and tools; (v) decentralization, inclusion and accountability

Transformation. The use of the EAS 2F for transformation purpose aims to identify the relevant and adapted levers to manage the possible tensions generated by the gap or even the total or partial incompatibility between the characteristics of the present system and those of the system that one would like to bring about. These gaps may be linked, among other things, to the constraints of the agricultural advisory system that we want to change, and on the other hand to the dynamics and changes associated with the new vision and agricultural advisory system that we want to implement in the future.

Mobilisation, dialogue and monitoring. The EAS 2F can serve to mobilize and engage actors and stakeholders of the EAS system in an ad hoc or continuous process of consultation, collective intelligence,

debate or public dialogue around the current progress of the EAS system. The objective can be multiple, it can be to strengthen the inclusive and citizen governance of the EAS system, but also to identify possible updates, inflections or incremental improvements to the system and the strategic plan of EAS. The use of participation and dialogue is not limited to the implementation of the strategic plan, but can also be implicit in the exploration, policy and strategy development phases. Mobilisation, dialogue and monitoring purpose of the EAS 2F should be one of the main activities of the country forum or network of EAS actors in countries where they exist.

Awareness raising and consensus-building. The deployment of foresight is also an opportunity for the various stakeholders to discuss the current state of the agricultural advisory system, the determinants of this situation, the perspectives and/or approaches to solutions. Conducting this exercise makes it possible to compare different perspectives, facilitate exchanges and build consensus around the diagnosis, but also and above all on the new configuration of the agricultural advisory system and the strategic levers to be used to achieve it.

Further to the five-implication presented above, the deployment of EAS 2F can also contribute implicitly to strengthening actors' knowledge on foresight approach and their national EAS system. In several countries, the level of mastery of anticipatory approaches by EAS actors is still low. The active and effective participation of stakeholders in a foresight process for EAS reform often requires a reminder or sensitization of the participants on foresight concept and the tools that will be used. In fact, the mobilization of foresight tools for the different purposes presented above should mobilize appropriate andragogical approaches that facilitate empowerment and mastery. In addition, the foresight exercise should include a session dedicated to diagnosis that allows for an assessment of the EAS system, highlighting the internal and external factors that determine its current state, but also the elements that are likely to influence the transformation. This activity allows actors to have a common and better knowledge of their EAS system and also of the factors of change that should be considered in the transformation process.

Theoretical Implications

This research highlights a paradoxical contrast between the potential of anticipatory approaches to facilitate disruptions and creativity in strategic thinking (called "future literacy" (Miller, 2018)), and the tendency of actors to remain into their routine and classic orientations that are ultimately not very innovative. To counteract this misleading point, it appears necessary to ensure actors effectively develop awareness toward future thinking, thanks to their effective participation in the entire process, from prospective diagnosis to the elaboration of scenarios or even trajectories of the future. A similar observation was made by Jahel et al (2020).

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