# HOW INNOVATION PLATFORMS CAN FACILITATE SUSTAINABLE INTENSIFICATION? INSIGHTS FROM MULTI-LEVEL SYSTEMS RESEARCH IN WEST-AFRICA

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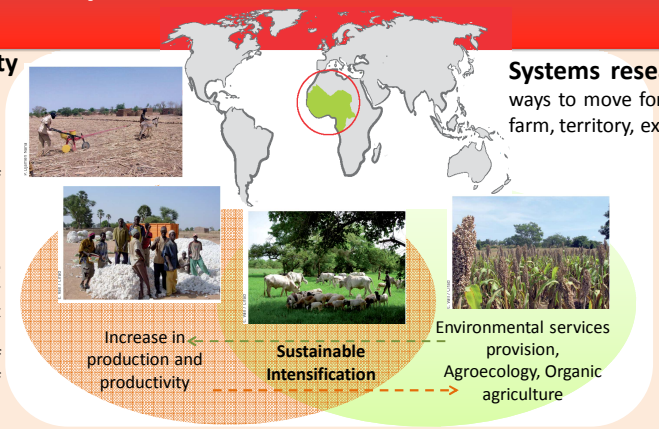
## ASAP* : a multidisciplinary research platform on innovation and sustainable intensification in West-African savannahs…

### ASAP aims to develop knowledge, capacity and tools to support each stage of innovation processes:

**Upstream of Innovation** : what are the conditions and processes leading to sustainable intensification? Analysis of farmers' learning regimes, farm environmental performances, agricultural dynamics, value chains, roles for extension and advisory services

**Ongoing innovation :** how to support learning and change processes? Itineraries for the co-design of technical or organizational innovations; modeling-based decision support tools; design of innovative extension and advisory methods

**Downstream of innovation** : what are the impacts of innovations? Impact pathway analysis, definition of evaluation criteria




**Systems research are used to identify** with rural stakeholders ways to move forward on sustainable intensification at three levels: farm, territory, extension and innovation systems:

**Farming systems :** analysis of conditions of adaptation and adoption of agroecological practices (agroforestry, crop/livestock integration, manure production, crop residues use, crop rotation and association); farm trajectories

**Territorial systems:** analysis of conditions for facilitating crop/livestock integration (land access regulation, coordination committees) ; analysis of agroecological processes (nutrient and biomass flow models)

**Extension and innovation systems :** analysis of the emergence of niche innovations linked to the adaptation of agroecology principles and to organic agriculture professionalization

## …involved in the design, implementation, facilitation and evaluation of agricultural innovation platforms

In order to explore the pertinence of agricultural innovation platforms (IPs) as regards sustainable intensification (SI) processes in west-African savannah, the ASAP research platform organized a seminar in Bobo-Dioulasso in 2013. The objectives were to take stock of i) systems research results on innovation processes that contribute to SI, ii) lessons from the experimentations of IPs set up in different countries (Burkina-Faso, Mali, Niger, Senegal). Then we explored the possible functions of IPs in SI processes and we examined implications for researchers to achieve the high expectations that are being laid at their door. Two main types of IPs are being promoted by governments and developers in West-Africa:

### Value chains approach-based IPs

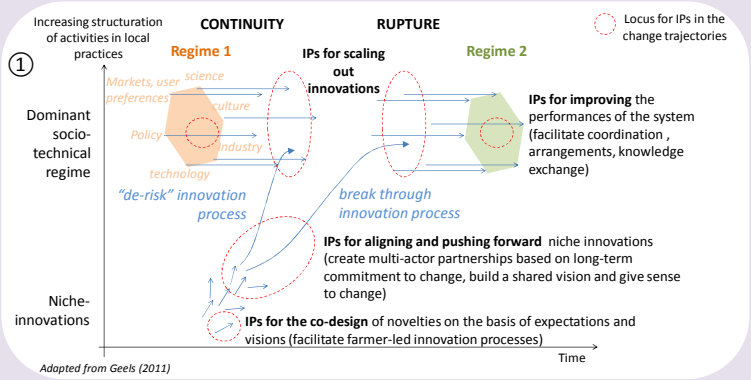
| Key lessons | |
|---|---|
| General original aims | •Improve productivity, competitiveness and markets; |
| Effective functions | •Contribute to the agricultural sectors structuration through networking of producers' organizations and up and down value chains' actors;<br>•Help farmers to identify opportunities for market their products on nearby markets, especially urban markets |
| Researchers' roles and limitations | •Provide data and diagnosis on value chains functioning, bottlenecks and obstacles for the increase of producers 'incomes;<br>•Provide organizational models that can support innovative, market-orientated farms (i.e. clusters, ESOP)<br>•Lack of legitimacy, know-how and tools to get local actors interested and to encourage them to organize their own development actions within value chains; |
| Contribution to SI and limitations | •Identification of new inputs and input providers to accelerate sustainable intensification (i.e. biopesticides, animal feeds)<br>•Identification of marketable products that meets farmers needs and objectives : generation of incomes for women, production of valuable agricultural by-products , products with great symbolic value (i.e.: milk for agropastoralists)<br>•Lack of coordination with existing policy instruments that facilitate innovation in value chains (legislation, taxes, funds for entrepreneurship, labels, etc.) |

### Research-oriented IPs

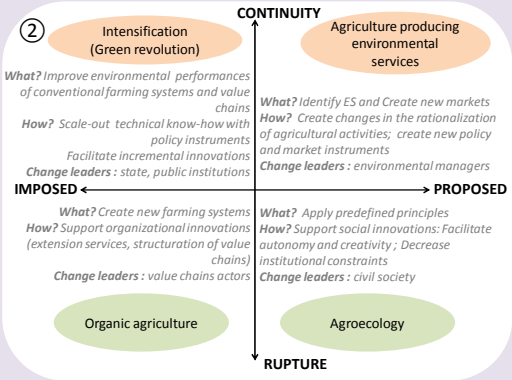
| Key lessons | |
|---|---|
| General original aims | • Solve pre-identified problems which require collective action : mainly natural resource management issues or conflicts between competing activities (i.e. crop residues use and free grazing)<br>• Improve a situation without predefined objective but starting from a local stakeholders 'willingness to change;<br>•Transfer and adaptation of agricultural technologies |
| Effective functions | • Reduce mismatches between farmers' and local stakeholders' expectations on one hand and predefined R&D project objectives and researchers' visions on the other hand;<br>•Provide a space for problematization in order to transform development issues into research questions;<br>•Facilitate biotechnical experimentations in real conditions, without deep attention to underlying socio-cognitive processes. |
| Researchers' roles and limitations | • They usually fulfill many roles (leaders, facilitators, developers, innovation promotors, evaluators), which can create ambiguity and bias in so-called rural actors' led innovation processes.<br>• Implementation of participatory or action-research methods, and capacity development tools;<br>•Lack of methods to organize knowledge production and exchanges within multi-stakeholders processes.<br>•Lack of references on the management of the innovation process itself in order to efficiently steer the innovation platform |
| Contribution to SI and limitations | •Identification of sustainable intensification pathways and obstacles in different local contexts<br>• Production of contextualized technical references that can be transferred to extension workers<br>•The time required for effective impact on SI (>5 years) goes well beyond that of the R&D projects and then IPs (2-4 years) |

## (Re)think the functions of innovation platforms as regards ecological intensification trajectories, the nature of innovation and the stage of innovation processes

In order to overcome the limitations we identified and to help the design and implementation of IPs for SI, we propose to re-think their functions using a framework grounded in **change management perspective :** ① multi-level transition perspective (Geels, 2011) helps to identify and delimit achievable objectives and actors to be involved in IPs in order to contribute to structural changes, ② change management theories helps to design suitable methods and tools to organize and drive changes.




Adapted from Geels (2011)




Embedded in innovation issues are questions about learning and change. Before planning and implementing IPs three questions should be answered:
- What is the context of change : why changes must take place and who are the leaders ?
-What should be changed?
-How to drive change processes ?

In west-African savannahs, four main sustainable intensification processes are happening. They are linked to :
-the dominant socio-technical regime (Green revolution), and the payment of environmental services;
-the professionalization of organic agriculture;
- and the dissemination of agroecology principles.

## Priorities areas for future training and research

If they are to play their part to the full, researchers have to face several challenges :

| | Key challenges |
|---|---|
| **Research organization and objectives** | -develop more research with and for "**change leaders**" ;<br>-clarify their underlying **assumptions, individual values and ideology**, all of which influence knowledge production and eventually innovation<br>-be much more involved in the **management of the knowledge production and exchanges** processes within IPs |
| **Capacity building issues** | - develop specific skills (integrative, subversive and reflexive skills), postures and tools in order to make more efficient their contribution to learning and change processes in multi-stakeholders platforms |

Three priority areas for future research have been identified by ASAP platform:

**Ecological intensification and innovations :**

-Evaluation of the environmental performances of innovative farming systems at several scales
-Watch over niche innovations in order to analyze them and support them.

**Extension and innovation systems:**

- Identify convergence and complementarities between the different extension and innovation systems that support sustainable intensification

**The functioning of Innovation platforms:**

-Develop tools to support socio-cognitive processes within innovation platforms

•**Agro-sylvo-pastoral Systems in West Africa** (ASAP) is a research and training platform in partnership, gathering four national and international West-African research centers partners with CIRAD: INERA, University of Bobo Dioulasso (IDR), CIRDES, IER Sikasso center.

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