

Project objectives

The general objective is to create the conditions for small producers in the Sahel to set up innovative technical systems of agro ecological intensification (AEI), allowing them a more efficient and sustainable management of resources and an improvement of their incomes, while making their operation more resilient to climate change in the three countries of intervention of the project. A more specific objective is to redefine the role of research so that institutional, political and technical actors have access to the necessary knowledge, effectively support organized and voluntary producers and create favorable conditions for AEI.

Background

In the Sahel, agricultural systems are characterized by high vulnerability to the extreme variability of the climate. Family producers are exposed to risks of various kinds (climatic, economic, health, even security) and are struggling to diversify their livelihoods. Finally, the functioning of agricultural value chains is not very favorable to the profitability and sustainability of agricultural systems. The result is a rapid degradation of natural resources (soil, water, biodiversity) and the abandonment of certain irrigation schemes.

Mechanization, whatever its forms, is still not very widespread although desired to improve labor productivity. Its use requires practices and instruments adapted to the quality of the soil for which farmers do not always have the necessary knowledge. Under demographic pressure, competition for the different uses of agricultural and pastoral land takes place to the detriment of the sustainability of the systems.

Agro-ecological intensification (AEI) can provide sustainable solutions to help producers in the Sahel to develop agriculture more resilient to climatic hazards and increase their food security. Technical solutions exist but it often needs to adapt, optimize and combine them in innovative agro-ecological intensification systems thanks to a new dynamic of collaboration between the actors of research, development and producers. Institutional actors, interacting locally with farmers (local research, educational and training institutions, development operators, NGOs, producer federations, private market and supply chain actors, etc.), must also be supported to better understand the usefulness of the AEI and be able to support its development.



Theory of change to achieve the objectives

The modes of interaction of research with development actors and with producers will be adapted to allow: 1) a more efficient co-production of knowledge on the agro ecological processes that can be mobilized to improve the functioning of agro systems, 2) a more efficient adaptation and co-constructed agro ecological system with the diversity of producers' conditions, 3) the production of methods for supporting farmers by development actors and strengthening their skills in this area.

A resolutely **participative and iterative** approach will be implemented at different levels (rural community level, regional level and national level) in order to be able to deal with all the potential obstacles to developing AEI in the Sahel. **These bottlenecks will be identified collectively** at each level and possible solutions will then be explored. The role of research is both to bring useful knowledge to the resolution of these obstacles and to offer spaces and tools allowing the different actors to work

together to overcome them. What is sought is **intense collaboration between research institutions and development actors**, in order to improve the mobilization of knowledge whatever its origins, to put it at the service of supporting transitions towards a more agro ecological intensification of production.

Thus at the scale of rural communities, research and development actors will work iteratively with different types of producers to adapt production systems by identifying local sources of innovation, knowledge of ecological processes and the potential impacts of new agro ecological systems.

At the regional level, the research will mobilize all the institutional players considering the socio-technical conditions that producers face. It will offer spaces and tools allowing these actors, despite their own differences and objectives, **to debate and reflect together on different scenarios of organization of the socio-economic context** more favorable to the agro ecological intensification of their systems by producers.

At the national level, the project will bring its experience and share its results with the policy makers of each country and the Sahel region, through major events of restitution and discussion on the benefits of AEI. **The advocacy work, scientifically and socially supported by the actors of the project**, will make it possible to analyze, at the national and sub-regional level, the interest of the AEI in ensuring food security and agricultural development.

At each of these levels, knowledge and know-how, their co-construction and sharing are driving forces for these transitions and the change of scale of these practices. To facilitate their dissemination and the related training processes, **the project will rely as much as possible on the actors, networks and other existing systems around agro ecology** and adaptation to climate change. Information sharing and communication tools will be established in conjunction with these actors and networks.

At the end of the project, not only will all the knowledge and collaborative tools produced be available to local stakeholders, in particular development organizations, but the latter will have acquired the autonomy to continue to enrich them to fuel the process of adaptation of socio-technical systems and conditions. Private sector players and public policy makers will be made aware of and promote these changes. Producers will therefore be in the best position to produce sustainably, economically efficiently and adapted to climate change.

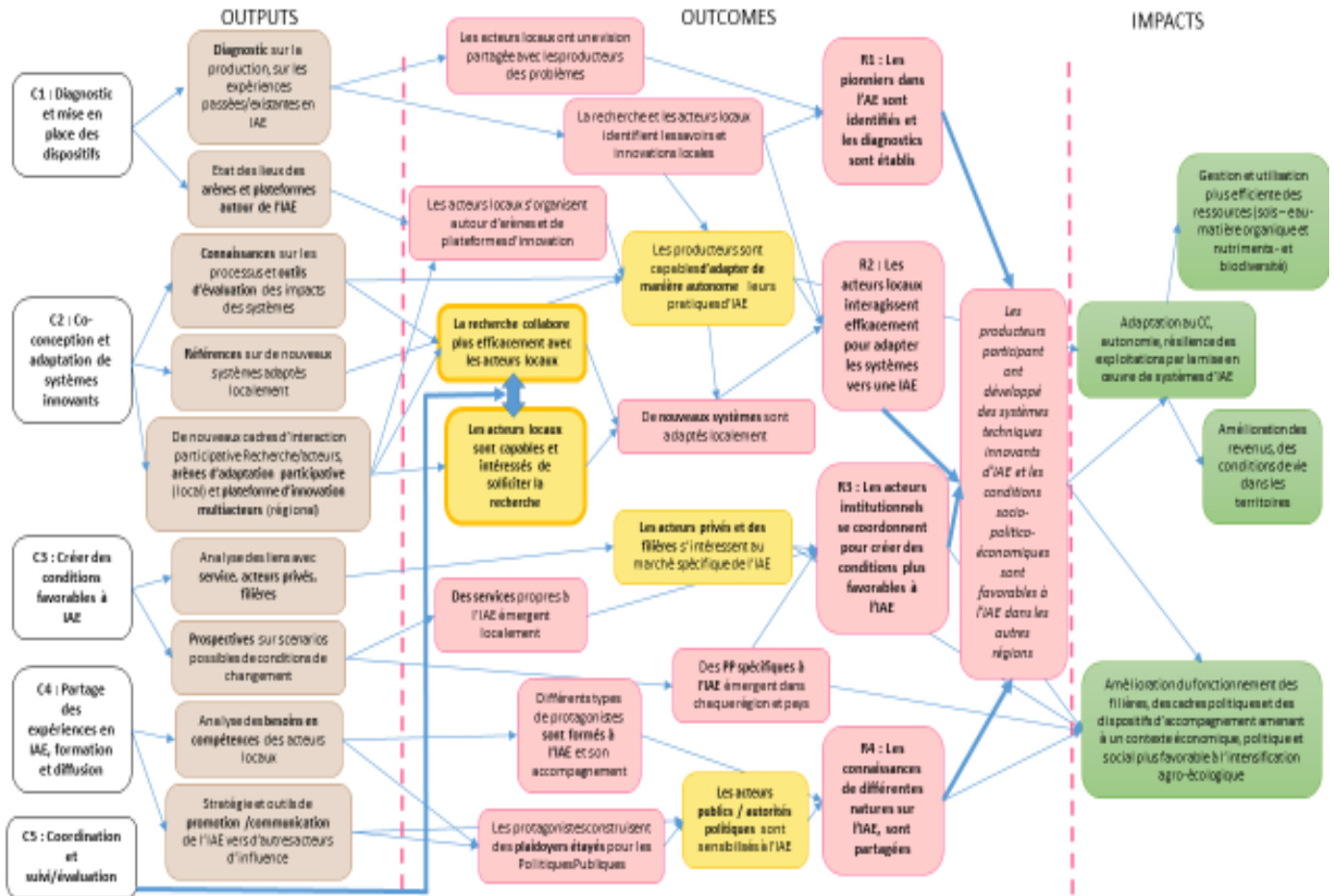


Figure 1 : Chemin de l'impact

Main activities

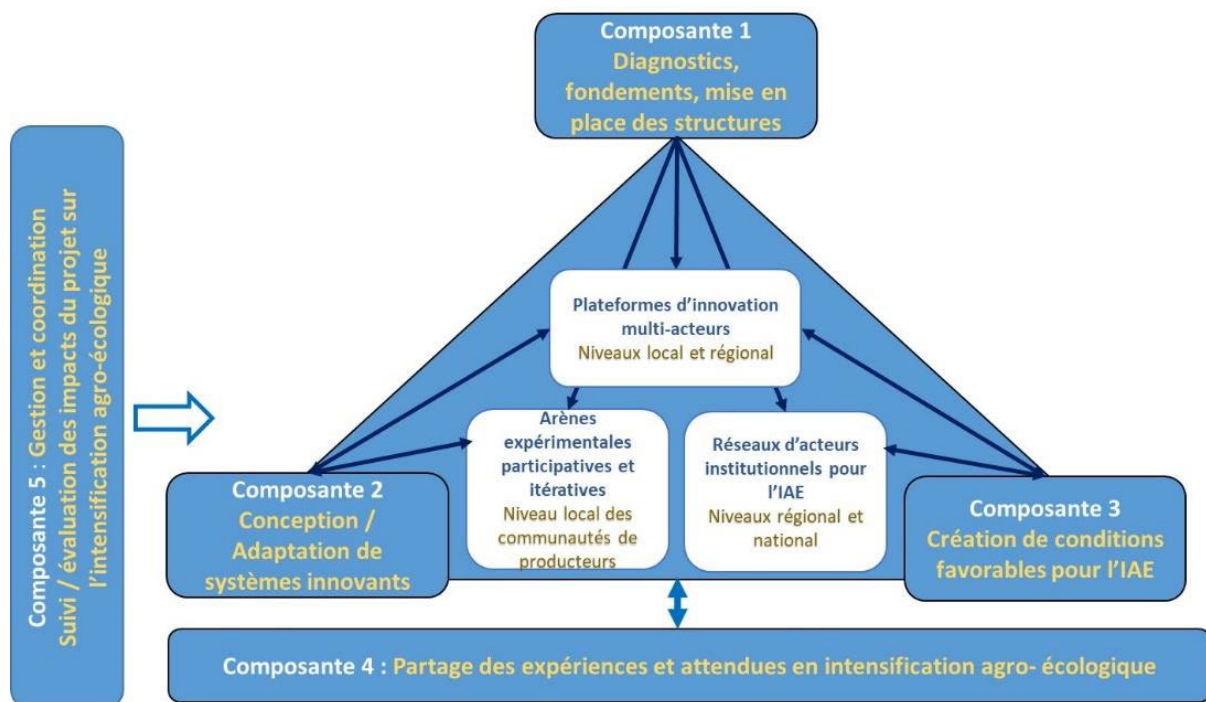
The project activities are:

- ✓ **Activity 1.1** Identification and diagnosis of concertation arenas and innovation platforms through a survey of the key players; **A1.2** Identification of local action systems for technical support for producers, through a survey of organizers and beneficiaries; **A1.3** Diagnosis of territorial dynamics by bibliography, analysis of available statistics, surveys and workshops with active institutions; **A1.4** Inventory of local production by bibliography, surveys with producers and participatory diagnostic and prototyping workshops.
- ✓ **Activity A2.1** Establishment of test systems and adaptation of systems through participatory trials in localities and network of farmer plots; **A2.2** Co-evaluation of innovative systems on the different dimensions of their performance by participatory identification of performance indicators, field day, participatory modeling, interactive workshop with producers; **A2.3** Co-design of scenarios for the evolution of agricultural holdings in the face of climate change by survey and participatory modeling.
- ✓ **Activity A3.1** Co-design of scenarios for the evolution of agricultural land and necessary public policies, through diagnostic workshops and interactive prospective workshops; **A3.2** Making the AEI viable through better integration of the private sector, better relationship with markets and sectors, by surveys of industry players, interactive workshops between producers and industry players; **A3.3** Identification and strengthening of the services required by the AEI such as technical advice, management of genetic resources and mechanization through consultation workshops, institutional strengthening, training.

- ✓ **Activity A4.1** Formalization, systematization and sharing of experiences by data and knowledge management plan, database, information sharing system (KMS); **A4.2** Development of training, training and communication support through collective workshops to support the formalization of products, technical sheets, training content, radio broadcasts; **A4.3** Advocacy activities in favor of AEI, national / regional workshops.
- ✓ **Activity A5.1** Coordination, governance and project monitoring, coordination meetings, annual workshops, setting up of a steering committee and a scientific council, setting up of technical committees by component; **A5.2** Collective definition of a vision of the path of the impact of AEI in the region by multi-institutional workshop; **A5.3** Monitoring and adaptation of support methods including research in strong interaction with development stakeholders to support AEI through annual assessment workshops.

Organization

The project components are presented in the following figure 2:



Project governance includes a general coordination unit involving general coordinators and co-managers of components in permanent interaction with technical committees (one per component) and field reference teams (one per country).

A steering committee (decision-making) involving CIRAD, ISRA, INERA, IER, a representative of ROPPA and one of ENDA Pronat meets once a year. A scientific coordination committee (advisory) meets once a year if necessary.

Implementing organisation

The project is coordinated by CIRAD (Center for International Cooperation in Agronomic Research for Development).

Project partners

The implementation of the project is entrusted to a consortium bringing together four other European research institutions: IRD (France), Zalf University (Germany), WUR (Netherlands) and CSIC (Spain),

three national research institutions (ISRA, IER and INERA) as well as two NGOs (AVSF and ENDA Pronat).

Other stakeholders

The co-requesting institutions also join forces to develop actions in the field with a number of other farmers' organizations (AOPP or UNPCB) and NGOs (AMST, Diobass, GRAAP, CARI, AGRISUD and GRET) who will be beneficiaries and direct actors in the project areas. In addition, all influential actors, both private, political or technical (AEI support services) impacting on the socio-technical conditions for changes from farms to AEI, will be involved in particular in component 3 of the project.

Region

Burkina Faso, Mali and Senegal. The project will develop its activities in 3 ecological contexts (Pluvial dry zones, pluvial sub-humid zones and irrigated systems).

Funding and co-funding

EU	€ 7,000,000
French Development Agency	€ 1,500,000
CIRAD/IRD	€ 500,000
Total budget	€ 9,000,000

Duration

4 years (2020-2023).



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Agronomes et Vétérinaires Sans Frontières



ENDA Pronat (Sénégal)