



Transforming food systems and agriculture  
through research in partnership with Africa



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Foto Vincent Blanfort, © Cirad



**« Build together an ambitious research-training-innovation partnership to share knowledge, methods and networks, and to set up projects in favour of productive, resilient, autonomous and sustainable food systems, quality job creation, as well as resources and global health preservation »**



R. Belmin © Cirad.

## Background

Africa and Europe, two neighbouring and interdependent continents, share the 17 sustainable development goals of the 2030 Agenda as well as the goals set by the Paris Agreement on climate change. The coming decades will be crucial, especially in Africa where demographic growth is strong, to ensure food security and sovereignty, nutrition, education and youth employment, gender equity, the ability to sustainably produce equitably distributed wealth, adaptation to climate change and its mitigation, fight against desertification, preservation of resources (water, biodiversity, soil, forests) and protection of environmental, human and animal health.

To support the necessary transitions and promote productive, resilient, autonomous and sustainable food systems in Europe, Africa and the rest of the world, some twenty dedicated research and training organizations, based on long-standing cooperation in terms of publications and projects, have decided to build together an ambitious partnership on agriculture, food and the environment, and thus contribute to the priorities of the European Union and the African Union in terms of collaboration in research, innovation and training.

The TSARA joint initiative for «Transforming Food Systems and Agriculture through Research in Partnership with Africa», was launched in this context in March 2022.

[1] In the fields of agriculture, food and the terrestrial environment, Cirad and INRAE together rank second in the world in terms of co-publications with African research partners.



## Goals

TSARA aims to jointly develop high-quality partnership research, based on the co-construction of innovations with rural and urban stakeholders, oriented towards training, capacity building and impact. The aim is also to strengthen public policy support and expertise.

The initiative relies primarily on strengthening existing structural partnerships through international laboratories and networks, partnership platforms<sup>[2]</sup> and major projects undertaken with Africa, in particular with funding from the European Union, the French Development Agency, and international donors.

The initiative proposes a medium-long-term vision based on an ambitious scientific agenda designed to encourage knowledge, methods and networks sharing, and to develop portfolios of partnership projects.

TSARA will help advance international initiatives like the European Union-African Union (EU-AU) Research and Innovation Partnership and in particular the resulting International Research Consortium (IRC FNSSA), EU-AU Plant Protein Initiative, Great Green Wall Accelerator, PREZODE (Prevention of Zoonotic Disease Emergence) and the 4 per 1000 initiative (Soils for Food Security and Climate).



Map of partners, countries and member institutions

The governance of the TSARA initiative includes a general assembly with two co-chairs, a secretariat, and soon an external advisory board.

<sup>[2]</sup> Partnership platforms of which CIRAD is a member: <https://www.cirad.fr/dans-le-monde/dispositifs-en-partenariat>. INRAE laboratories and international networks: <https://www.inrae.fr/europe-international/international>

## Examples of the first partnership projects developed under TSARA

- **Nutrition, from the microbiota to public policy** (South Africa - Senegal - France). The aim is to i) produce knowledge on the African microbiota and on the link between traditional and indigenous African foods and nutrition/health, ii) strengthen traditional and indigenous African food value chains, iii) make recommendations for policy support towards these sectors. Particular attention will be paid to inclusiveness (income and employment for women and young people along the value chains) and to the environmental sustainability of these agri-food systems (particularly through agroecological practices).
- **Employment and agroecological transition** (Ghana - Senegal - Burkina Faso - France). The employment issue, working conditions and the attractiveness of jobs, particularly for young people, is an entry point to the challenges to be met in Africa at the same time as adaptation to climate change, the development of agroecology and food security. EmployAE aims to study the conditions under which agroecology can create quality jobs. The aim is i) to link combinations of agricultural practices with the organisation of work (who does what), working hours and working conditions on farms, ii) to characterise the associated jobs (activity profiles, remuneration, social protection arrangements) for farmers, family workers and employees; iii) to integrate a work/employment perspective at production level but also downstream in the chain.

## Towards a strategic research agenda

A series of meetings with all partners made it possible to identify the major themes mobilizing research, training and innovation which form the basis of TSARA's strategic agenda and action plan:

1. **Engage the agroecological transition.** By strengthening biodiversity and the agroecosystems services, services ensuring sustainable agricultural and food production in quantity and quality and a better resilience to climate and health hazards.

2. **Soil conservation and rehabilitation by combating against desertification.** The aim is to contribute, via the organic matter incorporated into the soil, to climate change adaptation and food security, and carbon neutrality in food production as a long-term objective as well.
3. **Rethinking water governance to make agriculture more resilient, based on agroecology and multi-stakeholder territorial approaches.** Water constraints are exacerbated in sub-Saharan Africa and the Mediterranean due to climate change and the increase in water consumption for agriculture, drinking water supply and industry. The aim is to develop more water-efficient agriculture based on the principles of agroecology in terms of less water-consuming production and practices, making greater use of rainwater, the use of recycled water and the development of resilient irrigation.
4. **Promote the adaptation of African (agro)forestry territories to global changes** while meeting the needs of local populations for energy, animal feed, and associated crops, with a better preservation of biodiversity.
5. **Developing a One Health approach.** Jointly address human health, animal health and ecosystem health to greatly contribute to reducing the risk of emergence of zoonotic diseases and limiting the use of antibiotics.
6. **Contribute through research, training and innovation to tackling the triple burden of undernutrition, dietary deficiencies and chronic diseases** due to obesity and overweight, accelerating the transition to healthy and sustainable food systems. It is a question of combining approaches at several scales, associating research on socioeconomics and food access, health security, on the relationships between nutrition, microbiota and health, in particular for women and children. It is also a question of studying changes in the food supply, for example in vegetable proteins sectors and transformations of local resources, as well as the reduction of losses and waste.
7. **Assess the capacity of farming systems and value chains to create quality, decent, fair and remunerative jobs, particularly targeting young people and women.** The issue of work and employment is a necessary entry point for public policies, given the influx of young people into the labour market.
8. **What role should livestock play in Africa's development, and what models should be supported?** Livestock farming is being called into question because of its contribution to greenhouse gas emissions. It is also heavily impacted by climate change and water scarcity and is subject to competition for land use. It is expected to meet the growing demand for animal products (milk, meat, eggs).

Beyond these eight major interconnected themes, cross-cutting issues are being identified, or have been identified as important to work on, such as digital opportunities and the management of risks, hazards and uncertainties.

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- **MAHDIA, or how to Merge Agroecology and Hydric resilience to Develop sustainable food systems through collective Intelligence and territorial Approaches** (Morocco - Tunisia - Senegal - France). The aim is to engage local areas in an agroecological development path that reconciles water resilience, food security and nutritional quality. The objective is to develop tools, approaches and territorial platforms that bring together all the stakeholders in the food systems, to promote, from production to processing and consumption, food products identified as being of interest in terms of local economic, social, environmental and health issues. Experiences will be shared between the 4 countries and capitalized on; the results will be the subject of scientific, political and general public communication.
- **Soil Africao, a research and training network on soil functionality in West Africa** (Benin - Burkina Faso - France - Ivory Coast - Senegal). Its objective is to bring together and promote the results of research into the region's soils and the way they are affected by the management of agrosystems. The network organises thematic schools to harmonise sampling and analysis methods, supports the setting up of consortia to respond to calls for tender, and promotes exchanges between researchers and student mobility for training through research.





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