

TSARA

TRANSFORMING FOOD SYSTEMS AND AGRICULTURE THROUGH PARTNERSHIP RESEARCH WITH AFRICA

March 2022



Photo Vincent Blanfort, © Cirad



Photo INRAE / NICOLAS Bertrand

Background

The African continent is experiencing exceptional demographic growth and could have nearly 2 billion inhabitants in 2050 compared to around 280 million in 1960. The coming decades will be crucial for ensuring food security and nutrition, education and employment for young people, the ability to sustainably produce equitably distributed wealth, adaptation to climate change, the fight against desertification, the preservation of biodiversity, water resources and the health of humans, animals and the environment.

European and African states share the 17 sustainable development goals of the 2030 Agenda as well as the goals set by the Paris Agreement on climate change. These goals must be achieved in Europe and Africa, two geographically neighbouring continents, economically interdependent and linked by history. They require a transition to healthy and sustainable food systems. In the fields of agriculture, food and the terrestrial environment, CIRAD and INRAE together rank second in the world in terms of joint publications with African partners.

Based on this observation, the CEOs of INRAE and Cirad together with the managers of some twenty partners from universities and national research institutes from all regions of Africa have decided to **build together an ambitious partnership on agriculture, food systems and the environment**. A partnership contributing to the priorities of the European Union and the African Union in terms of research collaboration, innovation and training.

That is the main goal of the TSARA joint initiative for «Transforming Food Systems and Agriculture through Research in Partnership with Africa» launched in March 2022.

Goals

TSARA initiative aims is to **jointly develop high-quality partnership research, oriented towards impact, training and the co-construction of innovations with actors from the rural and urban world**. It is also about capacity building, expertise and support for public policies.

The initiative relies primarily on strengthening existing structural partnerships through international laboratories and networks, partnership platforms¹ and major projects undertaken with Africa, in particular with fundings from the European Union or the French Development Agency.

The initiative proposes to **define a medium-long term vision based on an ambitious scientific agenda**, including several priority axes allowing the development of portfolios of partnership projects.

TSARA will help advance international initiatives like the EU-AU Research and Innovation Partnership, 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).



African partners associated with the co-construction of the TSARA initiative

The governance of the TSARA initiative will include a general assembly with two co-chairs, an external advisory board and a Franco-African secretariat.

¹ CIRAD partnership platforms: <https://www.cirad.fr/dans-le-monde/dispositifs-en-partenariat>
INRAE laboratories and international networks: <https://www.inrae.fr/europe-international/international>

Towards a strategic research agenda

A series of four meetings of partners preparing the future initiative made it possible to identify the major themes mobilizing research, training and innovation that could form the basis of TSARA's strategic agenda:

1. **Engage the agro-ecological transition.** By strengthening biodiversity and the agro-ecosystems 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 to a carbon neutrality in food production in a long-term objective as well.
3. **Design agriculture and food systems under water stress,** combined with socio-economical levers for individual and collective water management, that facilitate the coexistence of different agricultural or urban uses and that promote the reuse of wastewater
4. **Promote the adaptation of forests and agro-forests to climate change** while meeting the needs of local populations for energy, animal feed, 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.

Combatting antibiotic resistance in Africa: how to better take into account family farming?

The African continent has the lowest use of antibiotics in livestock, while pathogens of animal origin show high antibiotic resistance. One of the reasons for this paradox concerns the lack of knowledge and misuse of antibiotics in many African farms (Ducrot et al., 2021). Policies that would help to combat the antibiotic- resistance would improve training and access to veterinary drugs, develop innovative social and technical interventions, co-design with the parties concerned, for an adapted use of antibiotics for small farms in Africa.

Ducrot C, Hobeika A, Lienhardt C, Wieland B, Dehays C, Delabougliise A, et al. Antimicrobial Resistance in Africa—How to Relieve the Burden on Family Farmers. *Emerg. Infect. Dis.* 2021;27(10):2515-2520. <https://doi.org/10.3201/eid2710.210076>

Partners: INRAE, CIRAD and IRD, Institut Sénégalais de Recherches Agricoles Senegal, Universidade Eduardo Mondlane Mozambique, Faculty of Veterinary Medicine Thailand and University of Copenhagen Denmark

Promoting agroecological intensification of agriculture to promote farm resilience in the Sahel region

Through the FAIR Sahel Project, small-scale farmers in three Sahelian countries will be able to improve their incomes while making their farms more resilient to climate change and protective of natural resources. Indeed, the innovations developed by the project will contribute to improve the performance of agricultural production systems, resulting in a positive impact on the living conditions of farmers and on rural areas as a whole. FAIR Sahel relies on the knowledge and experience of producers themselves, and on the methodological, scientific and technical contributions of research and extension actors. The originality of the project is to question and strengthen the interactions and collective processes at work between these actors, from West Africa and Europe, to accelerate and sustain the emergence of agroecological innovations and their appropriation in rural areas.

The partners involved in this project, funded by the European Commission (DG INTPA) and Agence Française de Développement (AFD), are African research institutions - Institut d'Economie Rurale (Mali), Institut de l'Environnement et Recherches Agricoles (Burkina Faso), Institut Sénégalais de Recherches Agricoles (Senegal) - from France - Institut de Recherche pour le Développement and CIRAD - from Europe - Wageningen University & Research (Netherlands), Consejo Superior de Investigaciones Científicas, (Spain), Leibniz Centre for Agricultural Landscape Research, (Germany) - and two NGOs: Agronomes et Vétérinaires Sans Frontières, (France), ENDA Pronat (Senegal).

Projet FAIR Sahel <https://www.fair-sahel.org/>

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 socio-economics and food access, on health security, on the relationships between nutrition, microbiota and health, in particular for women and for the 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 agricultural systems and value chains to create jobs with quality**, decent, fair and remunerative work, particularly targeting young people and women
8. **What place of livestock and which livestock farming models to support?** Pastoral livestock farming under constraint of land use ; Livestock in agrosylvopastoral farming systems as a lever for agroecological intensification.

The theme of the digital revolution completes this panorama. It will be addressed in a transversal way.



Contacts :
dgdrs_international@cirad.fr
international@inrae.fr

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