

AFD-CIRAD Joint Position Paper

**TRANSFORMING FOOD SYSTEMS
FOR BETTER NUTRITION**





© Aizar Raldes

In 2015, the international community set the following target: “end hunger, achieve food security, improve nutrition, and promote sustainable agriculture” (Sustainable Development Goal n° 2 – SDG 2). Achieving this target remains a major challenge. Some three billion people around the world cannot afford a healthy diet, 20% of children under the age of five are stunted, more than a third of the world’s population suffers from micronutrient deficiencies, and the obesity rate among adults is continuing to rise, now reaching 16% globally.¹

The multiple forms of malnutrition

In the low- and middle-income, people face the “triple burden” of malnutrition, which refers to the simultaneous existence of undernutrition, micronutrient deficiencies, and overweight/obesity. The increase in the sale and consumption of processed foods that are high in energy density, especially fat, sugar and salt, but low in fiber and certain micronutrients, along with unregulated advertising on these foods, contribute to this triple burden.

The links between malnutrition and food safety

In addition to the problem of malnutrition, there is the problem of food safety. The current modes of agricultural and agri-food production generate rise to various forms of contamination (residues of pesticides and antibiotics, presence of heavy metals, micro-plastics and endocrine disruptors) which affect health. While foodborne diseases caused by microbiological contamination affect nutrition, some studies have found that exposure to chemical toxicity can also lead to a vicious circle of diseases and malnutrition.

The economic and environmental costs of malnutrition

In addition to their effect on health, our current food systems are also called into question for their socioeconomic and environmental effects (including greenhouse gas emissions, pollution, biodiversity loss, overexploitation of natural resources, and inequitable sharing of added value chains). FAO estimates that the hidden costs (environmental, health and social) of current food systems amount to \$12 trillion, or 10% of world gross domestic product (GDP) (FAO, 2024).

There is now a consensus on the need to transform food systems to improve people's nutrition, by making healthy, diversified and micronutrient-rich foods available to all. The cost of inaction is high. According to the World Bank², global productivity losses caused by undernutrition and micronutrient deficiencies amount to approximately \$21 trillion, while the social and economic costs related to obesity and overweight amount to \$20 trillion, over a ten-year period. In Africa, malnutrition causes an annual economic loss estimated at 11% of the continent's GDP.

Turn the tide by investing

Conversely, investing in food systems contributes to improving nutrition and brings benefits for society and the planet. Every dollar invested in the fight against malnutrition, focusing solely on its immediate determinants (inadequate dietary intake and diseases), generates an average return of \$23. These investments are thus among the most profitable in the field of development³. Indeed, they break the intergenerational cycle of malnutrition and the vicious circle of "maldevelopment". They also enable multidimensional progress in poverty reduction.

At the N4G Summit in Paris, AFD and CIRAD stress the **need to better integrate nutrition issues in food systems transformation.**

France at the forefront of sustainable and healthy food systems

France is fully committed to improving nutrition around the world. This commitment is reflected in "France's International Strategy for Food Security, Nutrition and Sustainable Agriculture", which has five main objectives: i) strengthen global governance of food security and nutrition, ii) develop sustainable agricultural and food systems, iii) strengthen France's action on nutrition, iv) support agri-food industries to promote the creation of decent jobs in rural areas, especially for young people, and v) enhance food assistance actions for vulnerable populations and improve their resilience.

In March 2025, France will be hosting the next edition of the Nutrition for Growth (N4G) Summit in Paris. On this occasion, AFD and CIRAD stress the need to better integrate nutrition issues in food systems transformation.



© Ricca Shryock/AFD

THE 5 PILLARS OF FOOD SECURITY

Food security exists when everyone, always, has physical, social and economic access to safe, sufficient and nutritious food that meets their needs and preferences, supported by good sanitation, health services and care, allowing for a healthy and active life⁴.

Food security rests upon five pillars: **i) food systems, ii) social protection systems, iii) water, sanitation and hygiene systems, iv) education, knowledge and good practices systems, and v) health systems. All this is underpinned by multi-sectoral governance and appropriate communication.** These various systems have an impact on **i) the immediate determinants of nutrition**

through specific interventions, and ii) the underlying and structural determinants of nutrition through nutrition-sensitive interventions. Malnutrition is a major global challenge with a triple burden: **i) protein-energy malnutrition, ii) micronutrient deficiencies ("the silent killer"), and iii) overweight and obesity.**

¹ FAO, IFAD, WHO, WFP and UNICEF, 2024. *The State of Food Security and Nutrition in the World 2024, Financing to end hunger, food insecurity and malnutrition in all its forms, Rome*. <https://openknowledge.fao.org/items/ebe19244-9611-443c-a2a6-25cec697b361>

² World Bank Investment Framework for Nutrition 2024 (2025, 7 March). <https://www.worldbank.org/en/topic/nutrition/publication/investment-framework-nutrition>

³ Ibid.

⁴ UNSCN, 2013, *United Nations System Standing Committee on Nutrition, 2013 Plan*.

I. Better integrate nutrition issues in food systems transformation

Integrating nutrition issues in food systems transformation to improve food security, and therefore diet, will contribute to improving their nutritional status and to tackling malnutrition in all its forms, throughout life. This integration supplements other types of intervention more directly targeting the quality of diets and population health (enrichment during processing and medicinal micronutrient supplementation, for example). These interventions can target vulnerable population groups, such as children in their first 1,000 days of life (the period between conception and the age of two years), and women of childbearing age.⁵

For CIRAD and AFD, adopting a “food systems approach”⁶ means mainstreaming nutrition issues into all the components of these systems, from production to consumption, and including processing and food environments. It also means taking account of social, economic, political, environmental, and cultural situations. In addition, this systemic approach makes it possible to define nutrition targets in connection with

the other sustainability goals for food systems. The first UN Food Systems Summit (UNFSS) in 2021 and the 2023 UNFSS+2 Stocktaking Moment called on actors to strengthen the link between food systems and challenges such as climate change, biodiversity loss, and health. The UNFSS has thus marked a turning point by recognizing the potential that food systems transformation holds for addressing major global challenges.

The Global Sustainable Development Report (GSDR) 2024 confirmed this development, referring to food systems as one of the six drivers of transformation with high potential for synergies. There are now many formal and informal initiatives calling on actors to work on the agriculture, diet, nutrition, climate change and biodiversity nexus, also taking into consideration the “health” of soils, plants, animals, humans, and the environment⁷.



© Hanuman Films

Adopting a “food systems approach” means integrating **nutrition issues** in **all the components** of these **systems**.

The operations of CIRAD and AFD are also guided by the search for synergies between the various Sustainable Development Goals linked to food systems. In this respect, the main principles of action and research priorities aim to:

- **Transform the practices of all food system actors. This includes supporting men and women family farmers, supply-chain companies, and civil society organizations.** Integrating nutrition issues into food systems transformation is a way of combating malnutrition in all its forms and throughout life, paying special attention to gender equality and young people
- **Develop a regional approach,** promoting the diversity of dietary patterns in both cities and rural areas, utilizing the resources of regions (such as agricultural biodiversity, foods and know-how), and building on a network of politicians, citizens and economic operators to transform food systems

- **Support the agroecological transition** to transform food systems by mobilizing all its principles⁸ regarding agronomic practices, as well as natural resources management, connectivity between producers and consumers, joint knowledge production, equity, and gender equality

- It is also essential to **consider the multiple social, cultural and hedonic dimensions of food**, and not solely see it as an intake of nutrients, highlighting the array of social representations and relations in which the act of eating takes place. In addition, it is important for researchers, decision-makers, development operators and citizens to **jointly build solutions at various levels:** science-policy-society interfaces, multi-stakeholder platforms and livings labs



⁸ Marie T. Ruel, Harold Alderman, 2013, Nutrition-sensitive interventions and programmes: *How can they help to accelerate progress in improving maternal and child nutrition?* *The Lancet* 382, 536–551. [http://dx.doi.org/10.1016/S0140-6736\(13\)60843-0](http://dx.doi.org/10.1016/S0140-6736(13)60843-0)

⁹ This approach is set out in the report of the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security (CFS): *HLPE 2017. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.*

⁷ For example, also taking into consideration the “health” of soils, plants, animals, humans, and the environment. For example, under the UAE Declaration on Sustainable Agriculture, Resilient Food Systems and Climate Action at COP28, the 159 Member States pledge to integrate food systems into their climate and biodiversity commitments by COP30. *The “Montpellier Process”, a collective learning process managed by a community of partners to establish more effective Science-Policy-Society Interfaces (SPSIs) at all levels, in all sectors (environment, health, population) and knowledge systems, also has this ambition.*

⁶ FAO, HLPE, IPES-Food.



2. Promote public policies and investment for nutrition

Support public policies conducive to nutrition security

AFD and CIRAD are working to build an environment conducive to nutrition security through multi-sector and multi-stakeholder governance, advocacy, and an integrated approach to nutrition in sectoral policies. Integrating nutritional objectives in sectors other than the health sector (agriculture, livestock farming, the environment, water, hygiene, sanitation and social protection, for example), and transforming food systems to make them more “nutrition-sensitive”, sustainable and resilient requires coordinated action and new ways of working together.

We can achieve this by taking action in seven areas: i) support advocacy for sustainable nutrition strategies; ii) mobilize governments, local authorities, research institutes, NGOs and civil society, especially young people, international partners/development agencies and the private sector to promote solutions geared towards the challenges of nutrition through an integrated vision and effective coordination, iii) promote multi-stakeholder coordination to build national capacities for the improvement of normative and policy frameworks; iv) promote quality standards for food products and the monitoring of this quality; v) raise awareness of good nutritional practices; vi) support entrepreneurship to promote a local and healthy produc-

tion, building on the links between the public and private sectors to scale up; vii) establish mechanisms to regulate the production and distribution of products with an inadequate nutritional profile to limit their consumption.

Build on agroecology to improve nutrition

Nutrition-sensitive food systems that maintain agricultural biodiversity, based on an agroecological approach, need to be broadly supported in public policy guidelines and instruments. For agricultural policies, this means making nutrition a priority in food systems, in addition to an analysis of the quantities of foods produced and the foreign exchange generated.

While producing more continues to pose a major challenge in certain situations where there is rapid population growth, the overarching priority is to produce better, always respecting the environment, as well as social and regional inclusion. This ensures a sustainable production of more diversified, safe and nutrient-rich food.

AFD and CIRAD believe that the agroecological intensification of agricultural production is the best way of providing healthy and sufficient food to a growing world population⁹. In rural areas, agroecology maintains agricultural biodiversity and contributes to improving food diversity and farmers' nutrition through on-farm consumption and diversified supplies on local markets. It also helps increase the empowerment of women farmers (by giving them access to their own fields and incomes, and decision-making power), which has a positive impact on the quality of family meals. In urban areas, markets selling agroecological products offer healthy and less processed products that respect traditional diets. In addition, bringing consumers closer to producers stimulates discussions about food, health, and environmental issues.

In certain situations where the food supply lacks diversity and where there is a high prevalence of micronutrient deficiencies, **a participatory reconsidering participatory varietal selection by integrating nutritional quality as a priority criterion**, can contribute to improving nutrition. This should also take account of criteria such as yields, pest resistance, adaptation to climate change, and be based on an agroecological approach.

CIRAD is conducting experiments on the biofortification of staple food crops, based on local agricultural practices and with a view to the agroecological transition. It involves improving the micronutrient content of these crops by targeting the minerals naturally present in them. For example, in Latin America and Madagascar, varieties of rice with a high zinc content in the bleached grain have been developed using conventional plant breeding methods.

The agroecological intensification of agricultural production is the best way of providing healthy and sufficient food to a growing world population, while protecting the planet.

AFD and CIRAD also support the **development of vegetable protein sectors**, such as legumes, for the ecological intensification of agricultural production. Legumes (including cowpeas, soybeans and groundnuts) are a source of protein for both households and livestock. They are suited to crop rotation cycles and contribute to increasing farm incomes, by diversifying production, improving soil fertility, and thereby increasing yields. As part of the joint European Union and African Union initiative for the development of plant-based protein crops launched at the sixth EU-AU Summit (2022), several projects have been financed to strengthen resilience and food and nutrition security in certain Great Green Wall countries, including Chad, Mauritania and Senegal¹⁰.

Maintain agricultural biodiversity

Available data show that there has been a substantial loss of agricultural biodiversity¹¹. For example, according to FAO, 75% of the world's food comes from just 12 plant species and 5 animal species. This food system, which has historically been built around a yield logic, has shown its vulnerability to climate, economic and health risks, for example.

Agrobiodiversity must be central to agricultural production.

AFD and CIRAD have shown that agricultural biodiversity¹¹ is a key driver in dietary diversity, which is itself essential for good nutrition. For example, in the Sudano-Sahelian zone, the dietary diversity of agricultural households is based on self-consumption, market purchases, and products found in nature (picking, fishing, hunting). The respective shares of these three complementary sources of dietary diversity vary depending on the local situation, the products, and the time of year.

Agricultural biodiversity can thus contribute to human nutrition, the health of soils and ecosystems, and the resilience of production systems. It must be central to food systems. One of the challenges of transforming food systems thus lies in "de-specializing" agricultural development models and jointly developing production systems tailored to each specific situation.

⁹ For a better integration of the agroecological transition in projects financed by AFD Group | AFD - Agence Française de Développement

¹⁰ AFD Group and the Great Green Wall in the Southern Sahara | AFD - Agence Française de Développement

¹¹ It corresponds to the diversity of genetic resources, species and ecosystems concerning crops, animals and micro-organisms, which is maintained by farmers, Third International Agrobiodiversity Congress



Improve the nutritional quality of the most consumed foods

CIRAD's research aims to improve the nutritional quality of traditional foods (roots-tubers, plantains, legumes, cereals and tropical fruits), by selecting the varieties most suited to agroecological production systems, and by studying the impact of processing methods on the nutritional quality of these foods. It also takes account of the food safety, their physical-chemical properties, and the energy costs of processing. This research covers products widely consumed by people facing food and nutrition insecurity. It helps make them healthier and more nutritious, while ensuring they remain affordable. These innovations are developed with and for micro, small and medium-sized enterprises and contribute to job creation, most often for women and young people. Some traditional products are also promoted for their nutritional benefits, such as camel milk for certain population groups in Africa suffering from deficiencies in animal protein intake or calcium, especially in desert or semi-desert areas.

Furthermore, to tackle the increase in the incidence of chronic food-related diseases, such as cardiovascular disease and type 2 diabetes, the purpose of some research projects is to develop functional foods utilizing cereals/fermented fruits (based on traditional foods, but enriched with bioactive compounds). Their effects on the human body and nutrition-health are also studied.

Support sustainable livestock farming, focusing on the animal protein it supplies in deficit areas

To improve nutrition in situations of food and nutrition insecurity where the World Health Organization (WHO) recommendations on the consumption of animal protein are not fulfilled, a sustainable increase in productivity in the livestock sector, consistent with a low-carbon path, needs to be supported.

AFD and CIRAD reaffirm the **importance of supporting pastoralism and agro-pastoralism in the Sahel region**, ensuring that pastures and rangelands are preserved. Mobile livestock raising systems provide a response to the increase in demand, especially due to strong population growth, and can supply urban centers and markets in West African coastal countries where there is a shortage of animal protein. In addition, the integration of agriculture-livestock farming is an important driver in agroecology, as it helps maintain farmland soil fertility. AFD recognizes that livestock farming contributes to mitigating the impact of shocks for many poor rural people. Its support focuses primarily on sectors that have a strong impact for local communities in rural areas, are biodiversity-friendly, and climate-resilient.

Investing in sustainable livestock farming that helps improve nutrition also requires ensuring:

- › **The sustainability of animal feed** through a better integration of agriculture and livestock farming in regions, traceability of animal feed production and its production in accordance with

best practices ("zero deforestation" and agroecological practices), and the implementation of best practices for grassland management

- › **The limitation of greenhouse gas emissions and the control of the rebound effect**, by focusing on the development of local sectors and short supply chains as an alternative to imports (milk, poultry), ensuring that emissions are reduced by improving animal health and feed
- › **Improvements in effluent treatment and the energy efficiency** of facilities and loss control, by supporting the adoption of practices with a lower carbon footprint and controlling increases in ruminant livestock

AFD and CIRAD reaffirm the importance of supporting pastoralism and agro-pastoralism in the Sahel region.

To ensure that diets are sustainable, a sufficient and non-excessive intake of plant and animal protein, produced in conditions consistent with a low-carbon path and preserving biodiversity, is thus necessary. A diversification of sources of protein (including white meat, fish and plant-based protein) needs to be sought, along with low-carbon local protein production.

Change urban food environments

Through an approach based on jointly developing urban public policies, involving researchers, public and private actors, and citizens, CIRAD and its partners are experimenting with various forms of intervention to change the food environment of consumers, schools, and traders. The objective is to promote access for the most food insecure to a safer and healthier local food supply, while contributing to build a fabric of small businesses providing jobs and incomes to women and young people.

In Chad, AFD is financing a project to diversify market gardening, livestock and fish farming production, and increase incomes in peri-urban areas. The project's objective is to contribute to reducing food insecurity in the capital Ndjamená and its suburbs by improving access to markets and their supply¹².

In the Democratic Republic of the Congo, supplying the 17 million residents of the capital Kinshasa is a crucial issue. The Empowerment through Nutrition-sensi-

tive, Inclusive and Resilient Agricultural and Rural Entrepreneurship (AVENIR) project around Kinshasa, co-financed by AFD and the International Fund for Agricultural Development (IFAD), will improve local and sustainable food supplies in Kinshasa. The project's action will include financing for infrastructure to improve access (rural roads) and for the upgrading of rural markets.

It will also support family farming and agricultural and rural entrepreneurship initiatives, implemented by producers' organizations, women and young people, and targeting sectors with high nutritional value (market gardening).

Make school feeding a driver for the local economy and access to education

AFD, CIRAD and their partners are contributing to sustainably improving supplies for schools, in terms of both quality and quantity, based on local supply chains in the project areas. Investing in school feeding, focusing on local products, has a dual impact: it creates added value in rural areas by creating outlets for local

products, and it improves enrolment rates, while increasing the academic achievement of children through greater concentration in class. This nutritional support is also essential for the educational integration of girls, as it reduces gender inequalities and helps them on their educational pathway. The two institutions are thus supporting traditional and diversified school feeding, ensuring that the meals provided meet students' nutritional requirements, while structuring sectors and local supply chains.

Since 2022, through the World Food Programme, AFD has been financing a project in Burkina Faso to enable rural organizations in the project area to increase their production by selling it to school canteens. This secures their outlets and incomes throughout the school year, while demonstrating the interest of a strategy of sourcing locally from small producers. The students and staff in the schools thus benefit from balanced meals made from local products. This operation is strengthening the role and responsibilities of women, producers, and local administrative structures throughout the value chain.



© A.Lourme Ruiz - Cirad

¹² For further information: <https://www.afd.fr/en/ressources/evaluation-highlights-chad-project-ensure-food-security-capital>

Beyond schools, **mass catering**, meaning, for example, in company canteens, universities, hospitals and military barracks, is provided in places where healthy, nutritious and diversified foods can be proposed, and where new social standards and eating habits can be developed.

Mass catering, including in schools, can **provide healthy, nutritious and diversified foods** and can thus help develop **new social standards and eating habits**.

In this respect, CIRAD has joined the international School Meals Coalition launched at the UN Food Systems Summit (UNFSS). It is developing research to better structure local supply chains and markets for the supply of school canteens and mass catering services, while studying the determinants of consumption, food environments, and the introduction of more plant-based foods.

Support systems that ensure food quality and help develop specific markets

Product certification (for example, for geographical indications, fair trade, organic farming and agroecology), including through participatory guarantee systems, and the development of specific markets recognizing the value of these products, can contribute to encouraging stakeholders in food systems to improve their practices. It can also raise consumer awareness of issues concerning the quality of their food and sustainability, and promote different forms of food culture.

Scale up and better target financing for nutrition

To improve nutrition, it will be necessary to increase public financing for food systems. This support will need to focus on the agroecological transition and increasing the availability of healthy and nutritious foods on markets. In 2003, African countries set a positive and ambitious target in the Maputo Declaration: allocate at least 10% of their national budgets to the agriculture sector to achieve a 6% annual growth rate in agricultural productivity. This objective was reaffirmed at the AU Extraordinary Summit in Kampala in January 2025. This Summit adopted the Action Plan 2026-2035 for the agriculture sector, with an ambition and a strategy to improve nutrition for people in Africa.

Improving nutrition will require **scaling up public and private financing for agroecology and agricultural sectors with high nutritional value**.

It is also essential to mobilize public agricultural banks and channel their financing towards investments to improve food security. While few of them have mandates with objectives related to nutrition, public agricultural banks have a key role to play in financing agroecology and strategic supply chains to increase access to protein and fruit and vegetables.

Technical and financial partners need to continue to support the efforts made by governments towards sustainable and nutrition-sensitive food systems, with the aim of maximizing the impact of financing on the ground. The private sector also needs to contribute to financing food systems transformation.

Two factors determine the effectiveness of public and private investment:

- i) The implementation of appropriate farm advisory systems, taking into account all the stakeholders in agricultural supply chains, including professional organizations that provide essential services to family farms. Farm advisory systems create capacities for capitalizing on financing and investment.
- ii) Enhanced advocacy on the importance of integrating nutrition issues, based on knowledge production and the establishment of stakeholder coalitions for regional consensus building, experimenting with possible solutions, evaluating them, then scaling up.



© Srishti Bhardwaj / Ofred Studios / Proparco

A systemic and regional approach with increased targeted investment

Food systems transformation is a key driver for improving nutrition and addressing the global challenges of food security, public health, and sustainability. It requires mainstreaming nutrition issues into public policies, with a regional approach involving all categories of stakeholders, as well as investment in structuring food supply chains, agroecology, and innovation. The development of local resources and the consideration of the cultural and social dimensions of food are also priorities to ensure healthy diets available to all.

In view of the investment needs and the economic and human costs of inaction, it will be necessary to further mobilize financing for agriculture and supply chains that contribute to improving nutrition. It is also essential to better target investments and strengthen international cooperation. This is the key to accelerating food systems transformation, mobilizing all the stakeholders (governments, technical and financial partners, civil society and the private sector).

The **Nutrition for Growth Summit** in Paris in 2025 is an opportunity to build on these commitments and promote innovative solutions for global nutrition security. AFD and CIRAD reaffirm their commitment to support nutrition-sensitive, resilient, equitable, and sustainable food systems that contribute to the well-being of people, health, and the protection of our planet.



About AFD Group

AFD Group finances and drives the transition to a fairer, safer and more resilient world, working with its partners to support communities all over the world. Drawing on the complementary strengths of its entities – Agence Française de Développement for public financing, Proparco for responsible private investment, and Expertise France for technical expertise – the Group is ideally positioned to meet all sustainable development challenges.

Working in over 160 countries, including France's Overseas Territories and Departments, the Group adapts its operations to the realities on the ground, actively supporting local initiatives. With over 4,000 projects, whose objectives are aligned with the Sustainable Development Goals (SDGs), AFD Group works on behalf of the French people, together with all stakeholders committed to economic development and the preservation of common goods: climate, biodiversity, peace, gender equality and global health. Working by your side, toward a world in common.

www.afd.fr/en



About Cirad

CIRAD is the French agricultural research and cooperation organization working for the sustainable development of tropical and Mediterranean regions. CIRAD (French Agricultural Research Centre for International Development) works with its partners to build knowledge and solutions and invent resilient farming systems for a more sustainable, inclusive world. It mobilizes science, innovation and training in order to achieve the Sustainable Development Goals. Its expertise supports the entire range of stakeholders, from producers to public policymakers, to foster biodiversity protection, agroecological transitions, food system sustainability, health (of plants, animals and ecosystems), sustainable development of rural territories, and their resilience to climate change. CIRAD was founded in 1984 as a public establishment (EPIC), following a merger of French tropical agricultural research organizations, and is under the joint authority of the Ministry of Higher Education, Research and Innovation and the Ministry for Europe and Foreign Affairs. As such, it supports French science diplomacy operations.

CIRAD works in some 50 countries on every continent, thanks to the expertise of its 1,750 staff members, including 1,200 scientists, backed by a global network of some 200 partners.

www.cirad.fr/en