



USAID
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BIODIVERSITY INTEGRATION REFERENCE SHEET

FOOD SECURITY



Integrating Food Security and Biodiversity Programming



What is Food Security Programming?



Challenges



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Monitoring, Evaluation & Learning



Opportunities for Integration



Key Documents



Key Terms



Global Food Security Strategy Results Framework



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INTEGRATING FOOD SECURITY AND BIODIVERSITY PROGRAMMING

ABOUT THIS SERIES

This reference sheet is one of a series of five whose purpose is to facilitate coordination and integration of biodiversity conservation with other key sectors at USAID by using a common format to present the interests of these sectors and opportunities for integration through collaboration, co-funding or single sector funds. These sheets are intended to be used throughout the program cycle by environment and non-environment officers alike. For the full series of sheets, please see the back cover of this reference sheet.



HOW TO USE THIS SHEET

The food security reference sheet introduces users to this sector at USAID and provides ideas for integration between biodiversity and food security programming. It starts by providing a brief introduction to food security programming at USAID, some common challenges and approaches, and examples of programming resources and monitoring and evaluation tools for the sector. It then provides some examples of opportunities for integration between food security and biodiversity. The sheet closes with key documents and terms for the food security sector.

WHAT IS BIODIVERSITY PROGRAMMING?

The overall vision for biodiversity conservation programming at USAID is to conserve biodiversity for sustainable, resilient development. This is accomplished through two goals as articulated in the [USAID Biodiversity Policy](#): (1) conserve biodiversity in priority places and thus help safeguard the diversity of natural ecosystems on Earth such as tropical forests, coral reefs and savannas, and the species they support; and (2) integrate biodiversity as an essential element of human development, considering both its benefits for and dependencies upon other program areas. More information on USAID's biodiversity programming is available from the Biodiversity Integration Reference Sheet.



Developing countries are home to roughly two-thirds of the Earth's biodiversity.

These countries play important roles as partners in safeguarding biodiversity around the world.

FUNDING REQUIREMENTS AND INTEGRATION

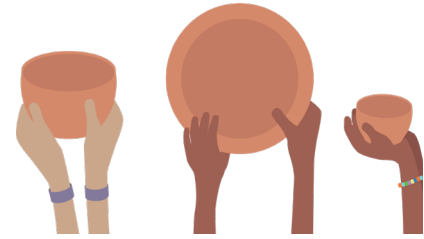
Both biodiversity and food security have funding requirements that guide USAID investments in these sectors. Biodiversity programming at USAID is guided by the USAID Biodiversity Code, which determines whether activities meet the legislative requirements for the use of biodiversity funds (see the Biodiversity Integration Reference Sheet for more information). Similarly, food security programming at USAID is guided by the [Global Food Security Act of 2016](#) and its subsequent reauthorization, as implemented by the [U.S. Government Global Food Security Strategy](#), and its objectives and intermediate results (see below, "Food Security Programming at USAID"). Opportunities for integration may be realized through collaboration, coordination, co-funding or single sector funds depending on the specific context (see "Opportunities for Integration," below).



WHAT IS FOOD SECURITY PROGRAMMING?

WHAT IS FOOD SECURITY?

USAID defines food security and nutrition as access to—and availability, utilization and stability of—sufficient food to meet caloric and nutritional needs for an active and healthy life. The absence of food security is characterized by extreme poverty, hunger and malnutrition, and increased vulnerability to food shocks, stresses and stunting.



More than 800 million people around the world are chronically undernourished.

FOOD SECURITY & DEVELOPMENT

More than 800 million people around the world are chronically undernourished; 2 billion are micronutrient deficient; and 159 million children under five are stunted, forever robbing them of opportunities to reach their full potential. Malnutrition, unsafe food and food-borne diseases are increasing health costs and mortality while reducing educational attainment, lifetime earnings, and economic productivity and growth. Furthermore, food security is not just an economic and humanitarian issue; it is also a matter of security, as growing concentrations of poverty and hunger leave countries and communities vulnerable to increased instability, conflict and violence.

FOOD SECURITY PROGRAMMING AT USAID

Feed the Future is the U.S. Government’s global hunger and food security initiative, and addresses the root causes of poverty and hunger by equipping people with the tools to feed themselves. Feed the Future implements the U.S. Government Global Food Security Strategy (GFSS, FY2017-21) to achieve three main interconnected objectives, which are supported by nine intermediate results and six Cross-Cutting Intermediate Results (see last page for full results framework). The latter include Cross-Cutting Intermediate Result 2, which focuses on improved climate risk and natural resource management. It is coordinated by the USAID Bureau for Food Security, implemented by field missions, and draws on the agricultural, trade, investment, development and policy resources and expertise of multiple federal agencies. Feed the Future is also supported by development activities of the Food for Peace Office in the USAID Bureau for Democracy, Conflict and Humanitarian Assistance.

U.S. GOVERNMENT GLOBAL FOOD SECURITY STRATEGY

GOAL

Sustainably reduce global hunger, malnutrition and poverty

OBJECTIVES

Objective 1

Inclusive and sustainable agricultural-led economic growth

Objective 2

Strengthened resilience among people and systems

Objective 3

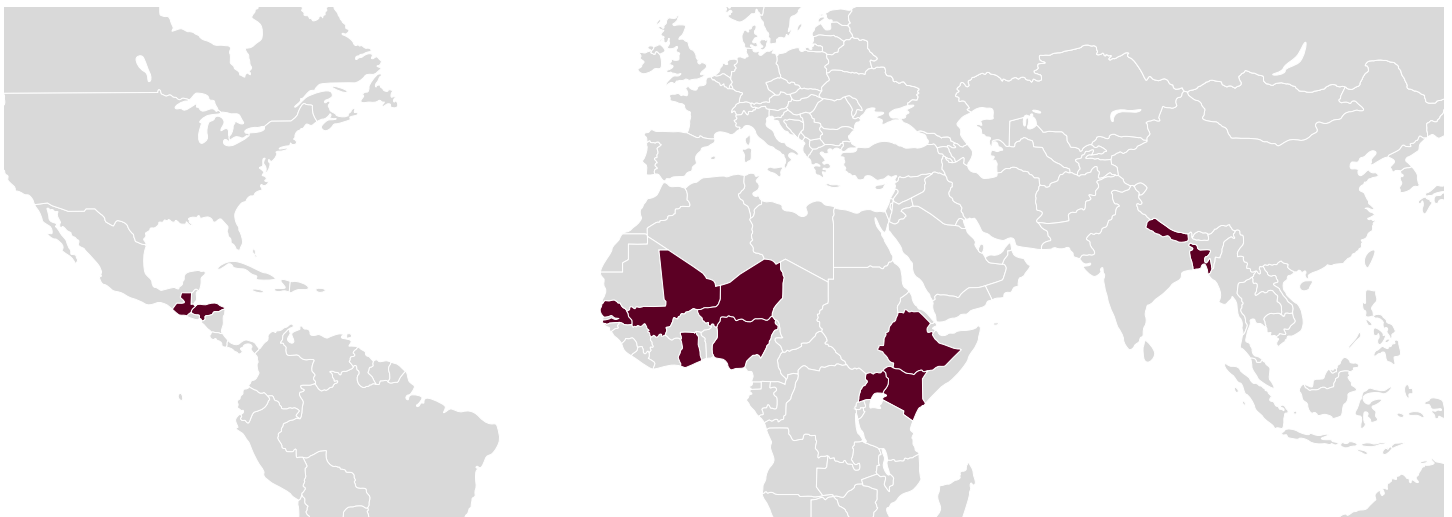
A well-nourished population, especially among women and children

INTERMEDIATE RESULTS (IRs)

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> 1. Strengthened inclusive agriculture systems that are productive and profitable 2. Strengthened and expanded access to markets and trade 3. Increased employment and entrepreneurship | <ul style="list-style-type: none"> 4. Increased sustainable productivity 5. Improved proactive risk reduction, mitigation and management 6. Improved adaptation to and recovery from shocks and stresses | <ul style="list-style-type: none"> 7. Increased consumption of nutritious and safe diets 8. Increased use of direct nutrition interventions and services 9. More hygienic household and community environments |
|--|---|---|

WHERE DO WE WORK?

Feed the Future programming focuses on 12 target countries where U.S. Government investments through the Global Food Security Strategy have the greatest potential to achieve sustainable improvements in poverty, hunger and malnutrition. USAID and its U.S. Government partners selected these countries in 2017 using a data-driven process that considered level of need, opportunity for impact and country-specific factors. Within these countries, Feed the Future programming often focuses on specific zones of influence where the need and opportunity for impact are highest. In addition to the 12 target countries, Feed the Future supports a number of aligned countries, and provides technical support to any USAID mission with food security interest.



FEED THE FUTURE TARGET COUNTRIES

- Bangladesh
- Ethiopia
- Ghana
- Guatemala
- Honduras
- Kenya
- Mali
- Nepal
- Niger
- Nigeria
- Senegal
- Uganda



CHALLENGES

The U.S. Government Global Food Security Strategy recognizes four key emerging challenges to food security.



Instability and Conflict

Growing concentrations of poverty and hunger threaten global security, leaving countries and communities vulnerable to increased instability, conflict and the potential for violence.



Climate and Natural Resources

Changing climate patterns and extreme weather events pose major challenges to global food security, necessitating new food production practices along with enhanced monitoring and response to the growing threat of agricultural pests and diseases.



Complex Demographic Challenges and Relevance Beyond Rural Areas

Two-thirds of the world's people are expected to live in cities by 2050, and 90 percent of this urban growth is projected to occur in Africa and Asia. These trends make investments in other aspects of the food system beyond farms and rural areas increasingly important.



Continued Gender Inequalities

While limited access to resources and inadequate nutrition affect billions of women, men, girls and boys, inequalities in resources, power and roles in food and agriculture systems tend to affect women and girls more greatly.



APPROACHES

USAID uses a range of approaches to meet these challenges and implement the U.S. Government Global Food Security Strategy. These approaches are described in detail by the [Global Food Security Toolbox](#), which highlights the tools and resources that the U.S. Government and its partners use to address global food security and nutrition challenges throughout the world. The toolbox groups these approaches into nine categories, each of which serves multiple objectives and intermediate results from the strategy. More information on the relationship between specific tools and these objectives and results are found in the toolbox itself.

Approach	Types of Activities
Capacity Development and Extension Services	Individual, organizational and system-level capacity development
Adaptive Agriculture	Practices and policies focused on increasing agricultural productivity and incomes through improved farmer inputs, mechanization, stress-tolerant animals and crops, and natural resource management, as well as risk management programs for reducing economic shocks at the farm and sectoral level
Financing and Investment	Grants and in-kind assistance, debt, equity, concessional finance, loan guarantees, women's savings and loan groups, insurance schemes, and investment preparation and promotion
Infrastructure and ICT	Investments in irrigation, energy, transportation infrastructure, storage and warehouses, telecommunication systems, technology scaling and dissemination, and the provision of market information
Nutrition	Activities that support food production, consumption, fortification and biofortification, dietary diversity, micronutrient supplementation, nutrition-related health services and monitoring, nutrition-sensitive agriculture, child/maternal health and nutrition, nutrition education, food safety, and water and sanitation
Policy, Standards and Governance	Policies, regulations and governance technical assistance focused on land tenure and property rights, and enabling an environment for the private sector; international agricultural trade; effective sanitary and phytosanitary systems; farm inputs and subsidies policy; and dietary guidelines and nutrition programs
Private Sector and Market Development	Private sector investment, public-private partnership, trade incentives and facilitation, value chain activities, market information systems, distribution of inputs, access to seeds and fertilizers, dealer networks and sourcing, equipment and voucher schemes
Programs to Build Inclusive, Resilient Societies	Activities that support women's empowerment, youth employment and training, vulnerable population programming, all-hazards disaster preparedness and early warning systems, and social protection and safety nets
Research and Development	Research, new product development and technology transfer, with a focus on crop improvement and protection; livestock health; post-harvest storage and processing; food safety; nutrition; behavioral, gender and social science issues; and weather and environment—leveraging U.S. domestic research and development to achieve global impact



PROGRAMMING RESOURCES

Food security programming at USAID is supported by multiple analyses including value chain analysis, cost-benefit analysis, and risk and resilience assessment. In addition, specific technical guidance is available for the three Feed the Future objectives and supplemental topics. Following is a description of these key analyses and guidance documents.

Market system analysis A key focus of USAID food security programming is the agriculture and food market system. Market systems are spaces in which private and public actors collaborate, coordinate, participate and compete for the production, distribution and consumption of goods and services, at local, regional and international levels. During the design phase of a project, various types of analysis can build an understanding of the market system to allow USAID staff to determine how aspects of the market system might be developed or improved by USAID programming, to outline the roles and relationships of actors and rules that incentivize them, and to prioritize investments at various leverage points. Analytics that could comprise a market system analysis include end-market analysis, organizational network analysis, value chain analysis, cross-market function (e.g. finance, transport, inputs) analysis and political economy analysis, among others depending on the context.

Cost-benefit analysis Value chain analysis can be accompanied by an enumeration of the costs and benefits of both the value chains and USAID interventions. This allows USAID to determine if investment in a value chain will yield sufficient returns, and to identify the best of several alternatives based on an analysis of costs and benefits. [Cost-benefit analysis](#) is ideally conducted during project or activity design based on expected costs and benefits (known as an ex-ante analysis), but can also be conducted during activity evaluation once actual values are known (known as an ex-post analysis).

Risk and resilience assessment The elevation of resilience as a core objective for Feed the Future reflects the reality that poor and near-poor households and communities live in increasingly complex risk environments and are subject to a range of shocks and stresses that threaten their food security, nutrition and ability to sustainably escape poverty. A risk and resilience assessment can be used to better understand the complex factors that influence resilience to shocks and stresses in a given context. It is ideally conducted during project or activity design, as it may be critical to developing and improving the theory of change.

Feed the Future technical guidance Food security programming at USAID is also assisted by a series of standalone technical guidance documents,¹ described in the [2017 U.S. Government Global Food Security Strategy Implementation Report](#). This includes five core guidance documents that are considered essential reading and that correspond to the strategy's three objectives and two of its cross-cutting intermediate results. This also includes 13 supplemental guidance documents that were selected based on knowledge gaps or the need to present new information to the Feed the Future community.



¹ <https://feedthefuture.gov/lp/guidance-and-tools-global-food-security-programs>



MONITORING, EVALUATION & LEARNING

The U.S. Government Global Food Security Strategy commits the U.S. Government to set strategy-wide specific, measurable and time-bound targets for indicators representing its overarching goal of reducing hunger, malnutrition and poverty. These indicators include:

- Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale
- Prevalence of stunted children under five
- Prevalence of poverty, measured as the percent of people living on less than \$1.90/day (2011 purchasing power parity)

To inform these global targets, country teams will set five-year targets for the geographic areas where U.S. Government global food security and nutrition programs work. These country targets will build on prior Feed the Future five-year targets for reducing poverty and stunting. The strategy uses multiple standard performance indicators that measure progress for each intended intermediate result, objective and goal. These are described in detail in the updated [Feed the Future Indicator Handbook](#).



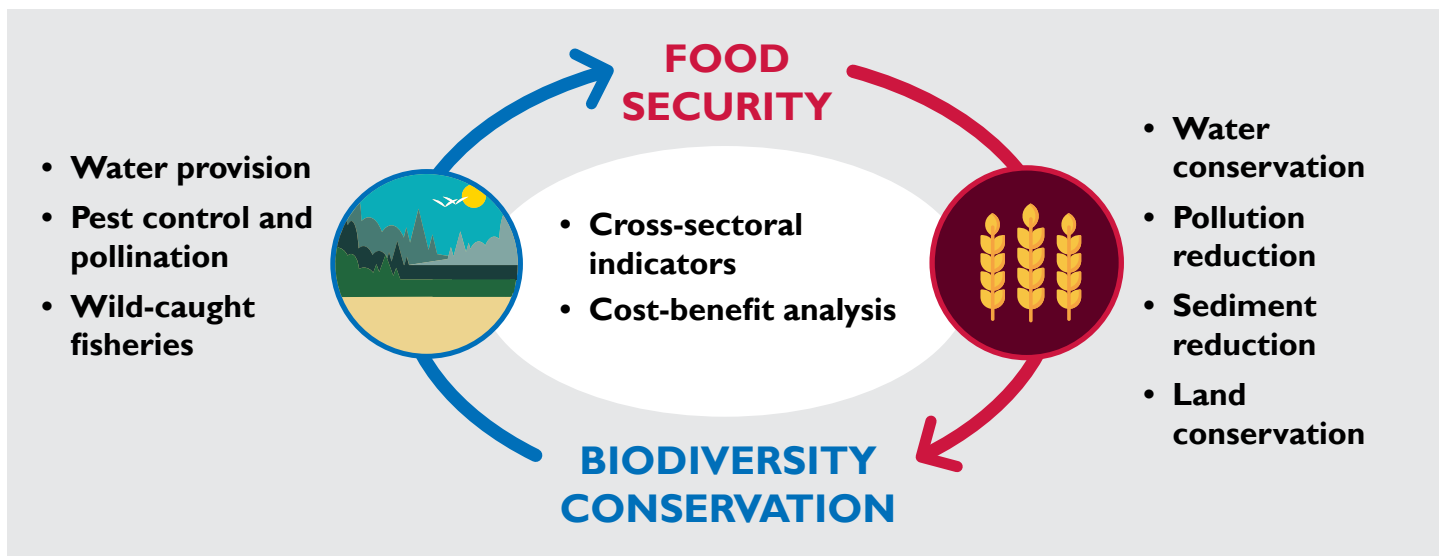
OPPORTUNITIES FOR INTEGRATION WITH BIODIVERSITY CONSERVATION

The following section provides examples of the two-way relationship between biodiversity conservation and food security. These opportunities may be realized through collaboration, coordination, co-funding or single sector funds depending on the specific context.

Food Security and Biodiversity Integration Natural systems provide key ecosystem goods and services that support food production including fish provision, water provision, pest control and pollination. As such, biodiversity programming can have significant positive impacts on food security and can incorporate food security priorities into its own activities. Similarly, food security programming can yield substantial benefits for biodiversity objectives. Agricultural systems can support genetic and functional diversity that contributes to agricultural and human resilience. USAID agriculture programming thus seeks to increase productivity and incomes sustainably and in ways that integrate diversity and diversification, while minimizing impacts on the environment.

Zones of Influence Within priority countries, USAID biodiversity and food security programming often identify specific geographies upon which they focus their work. For Feed the Future programming, these areas are known as “zones of influence,” while biodiversity programming must positively affect biodiversity in “biologically significant areas” as outlined in a project’s scope. Because Feed the Future programming is frequently conducted in areas that are not highly sensitive to terrestrial biodiversity loss, biodiversity and food security programs often do not geographically overlap. In the areas where they do, however, opportunities for integrated programming exist; even when these programs do not directly overlap, opportunities to realize co-benefits are often available.

Following is a brief description of key opportunities for integration of biodiversity conservation and food security, and useful analyses that support integration, where appropriate.



Legend: Opportunities for biodiversity and food security to benefit each other are presented on the left and right, and key tools for integration are presented in the center.



WATER PROVISION

Due to their ability to capture and store water, natural ecosystems are important sources of clean water and can balance water delivery and thus increase the resilience of water supply systems. The USAID [RESILIM](#) (Resilience in the Limpopo Basin Program) program reduced the vulnerability of people and ecosystems in South Africa and Mozambique through improved transboundary governance and management of natural resources. The program was grounded in a grassroots approach to understanding the systemic causes of vulnerability, including climate vulnerability, and promoted new ways of thinking and acting to promote integrated water and biodiversity management, thus supporting water availability for multiple uses.



ECOSYSTEM SERVICES FOR PEST CONTROL AND POLLINATION

Agricultural productivity and sustainability often depend on ecosystem services such as pest control and pollination. Pest control is a key service provided by natural ecosystems and a logical point of contact between these sectors. Furthermore, 5-8 percent of global crop production depends on pollinators and more than three quarters of the leading types of global food crops rely to some extent on animal pollination for both yield and quality, including leading exports like coffee and cocoa. Healthy ecosystems and sustainable food production can thus safeguard benefits for both sectors and multiply the returns on USAID investments.



WILD-CAUGHT FISHERIES

Fish are the most widely traded foods in the world, with about 50 percent coming from developing countries. In several African and Asian countries, fish provide more than half of the animal protein supply and are a food staple. USAID/Ghana's [Sustainable Fisheries Management Project](#) aims to rebuild marine fish stocks that have seen major declines in landings over the last decade, particularly small pelagic fisheries that are important for food security and are the mainstay of the small-scale fishing sector. Activities include support for co-management, use rights, capacity and effort-reduction strategies; improved science-informed decision-making; and building the political will and public support necessary to make the hard choices and changed behavior needed to rebuild Ghana's marine fisheries sector.



FARM LEVEL PRODUCTION AGRICULTURE

Sustainable intensification of agriculture increases productivity, incomes and resilience, while conserving water, reducing soil erosion, minimizing impacts on non-farmed areas and optimizing use of agricultural inputs. By integrating sustainability and resilience as key concepts, USAID agricultural programming minimizes the impact of food production and climate shocks on neighboring ecosystems—both terrestrial and aquatic—and thus realizes benefits for food security, resilience and biodiversity conservation goals.



CROSS-SECTORAL INDICATORS

By using indicators that measure benefits to each other's goals, food security and biodiversity programming can demonstrate achievements beyond their individual sector. For example, sustainable agricultural programming that reduces deforestation or pollution rates might measure both the number of hectares of biologically significant areas showing improved biophysical conditions as a result of USG assistance (standard indicator EG.10.2-1), and the number of hectares under improved management practices or technologies with USG assistance (EG.3.2-25). Similarly, fisheries management programming that improves food security for coastal populations through marine tenure rights might contribute to the number of children 6-23 months receiving a minimum acceptable diet (standard indicator HL.9.1-a) and the number of people who perceive their tenure rights to land or marine areas as secure as a result of USG assistance (EG.10.4-8).



COST-BENEFIT ANALYSIS

USAID is piloting the use of ecosystem service valuation as part of Agency cost-benefit analyses. Given sufficient data and projects of appropriate scale, quantifying ecosystem services as part of cost-benefit analysis can enable USAID to better understand the impacts and benefits of programming options. In many cases, economic or financial valuation of ecosystem services for food security will not be feasible but ecosystem services should still be conceptually considered in program design. For more information, see the USAID publication “Integrating Ecosystem Values into Cost-Benefit Analysis: Recommendations for USAID and Practitioners.”



KEY DOCUMENTS

This guide references a variety of documents that support programming and integration at USAID ranging from Agency policy to how-to guidance. These documents are listed below:

- [U.S. Government Global Food Security Strategy for 2017-2020](#)
- [Global Food Security Toolbox](#)
- [2017 U.S. Government Global Food Security Implementation Report](#)
- [Feed the Future Indicator Handbook](#)
- [USAID Biodiversity Policy](#)
- [Biodiversity and Development Handbook](#)
- [Integrating Ecosystem Values into Cost-Benefit Analysis: Recommendations for USAID and Practitioners](#)

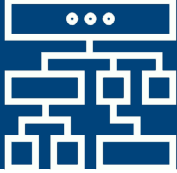
Additional resources are available from:

USAID Agriculture and Food Security: <https://www.usaid.gov/what-we-do/agriculture-and-food-security>
USAID Biodiversity Conservation Gateway: <https://rmportal.net/biodiversityconservation-gateway>

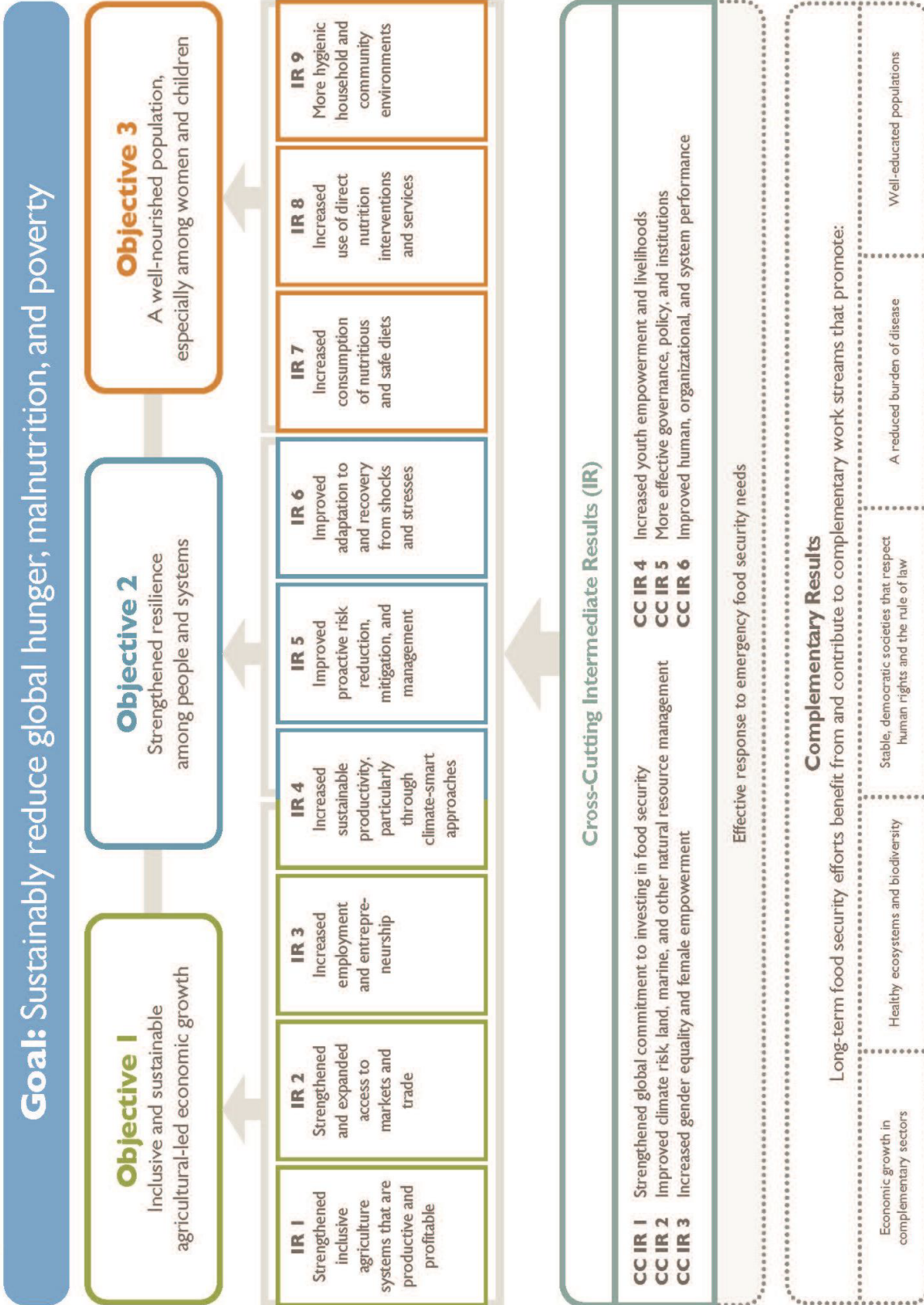


KEY TERMS

- **Agricultural value chain:** The set of actors and activities required to bring agricultural products from production to consumption, including processing, storage, transportation, marketing and retail. As a product moves through an agricultural value chain, each step adds monetary value to it.
- **Agriculture:** The science and practice of activities related to production, processing, packaging, transporting, trade, marketing, consumption and use of food, feed and fiber including aquaculture, farming, wild fisheries, forestry and pastoralism.
- **Agriculture and food systems:** The intact or whole unit made up of interrelated components of people, behaviors, relationships and material goods that interact in agriculture. The food and agriculture system operates within and is influenced by social, political, economic and environmental contexts.
- **Biodiversity:** Biological diversity, or biodiversity, refers to genetic diversity within a species, species diversity within ecosystems and the diversity of ecosystems on the Earth.
- **Ecosystem:** A dynamic system of interactions between all of the species inhabiting an area and the non-living physical environment. Ecosystems vary spatially and change with time, and no ecosystem is closed with respect to exchanges of organisms, matter and energy. Priority areas or sites for conservation exist within ecosystems.
- **Ecosystem services:** Services provided by ecosystems and ecological processes, including regulation of water flows and maintenance of water quality; the formation of soil, prevention of soil erosion and nutrient cycling that maintains soil fertility; degradation of wastes and pollution; pest and pathogen control; pollination; and climate regulation through carbon storage and sequestration.
- **Malnutrition:** Poor nutritional status caused by nutritional deficiency or excess. Malnutrition is a condition resulting when a person's diet does not provide adequate nutrients for growth and maintenance or if a person is unable to fully utilize the food eaten due to illness; this consists of both under and over-nutrition.
- **Market system:** A market system is a dynamic space—incorporating resources, roles, relationships, rules and results—in which private and public actors collaborate, coordinate and compete for the production, distribution and consumption of goods and services. Inclusive market systems are those that engage and benefit a range of actors including the poor, women, youth, ethnic minorities and/or other marginalized groups.
- **Overnutrition:** The excess intake of energy or other nutrients. This term includes overweight and obesity.
- **Resilience:** The ability of people, households, communities, countries and systems to reduce, mitigate, adapt to and recover from shocks and stresses to food security in a manner that reduces chronic vulnerability and facilitates inclusive growth.
- **Shock:** An acute, short to medium-term episode or event that has substantial, negative effects on people's current state of well-being, level of assets, livelihoods or their ability to withstand future shocks.
- **Small-scale producer:** Farmers, pastoralists, foresters and fishers that have a low asset base and limited resources, including land, capital, skills and labor, and, in the case of farmers, typically farm on fewer than five hectares of land.
- **Stress:** A longer-term pressure that undermines current or future vulnerability and well-being, including—but not limited to—climate variability and change, population pressure and environmental degradation.
- **Stunting:** A sign of chronic malnutrition; refers to a condition that is measured by a height-to-age ratio that is more than two standard deviations below the median of the WHO Child Growth Standards. Stunting is associated with long-term poor health, delayed motor development, impaired cognitive function and decreased immunity.
- **Undernutrition:** The various forms of poor nutrition caused by a complex array of factors including dietary inadequacy, infections and sociocultural factors. Underweight, stunting, wasting and micronutrient deficiencies are forms of undernutrition.



GLOBAL FOOD SECURITY STRATEGY RESULTS FRAMEWORK



OTHER REFERENCE SHEETS IN THIS SERIES



Biodiversity



**Democracy, Human Rights
& Governance**



Health



Water and Sanitation

For more information on the topics discussed here, or to discuss opportunities for integration with USAID biodiversity programming, please contact:

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