Photo: Paddy field on the border of Gunung Leuser National Park, Aceh Province, Indonesia by Diane Russell, February 19, 2017

POLICY REVIEW:

NATURAL RESOURCE MANAGEMENT IN AGRICULTURE AND FOOD SECURITY WITHIN SELECTED USAID POLICIES AND STRATEGIES

Acknowledgements and Disclaimer

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The views expressed in this review are those of the authors and do not necessarily reflect the views of USAID or the U.S. Government.

Contents

Acronyms

ADS	Automated Directives System
BIFAD	Bureau for International Food and Agricultural Development
BHA	Bureau for Humanitarian Assistance
CGIAR	Consultative Group on International Agricultural Research
COR	Contracting Officer's Representative
COVID	Coronavirus
DDI	USAID Bureau for Development, Democracy, and Innovation
DEIA	Diversity, Equity, Inclusion and Access
DO	Development Objective
CC	Crosscutting
CIFOR	Center for International Forestry Research
CSA	Climate-smart Agriculture
GCC	Global Climate Change
GFSS	Global Food Security Strategy
EG	Economic Growth
ENRM	Environment and Natural Resource Management
FFP	Food for Peace
FTF	Feed the Future
IR	Intermediate Result
LEDS	Low-Emissions Development Strategies
NARS	National Agricultural Research Systems
NRM	Natural Resource Management
MEL	Monitoring, Evaluation and Learning
OU	Operating Unit
PRO-IP	Policy for the Promotion of the Rights of Indigenous Peoples
RFS	(Bureau for) Resilience and Food Security
USAID	United States Agency for International Development
USG	United States Government
WRM	Water Resources Management
ZOI	Zone of Influence

Executive Summary

The Bureau for Resilience and Food Security (RFS) has refreshed the Global Food Security Strategy (GFSS 2022-2026) and a new USAID Climate strategy was released in April 2022. RFS Centers for Water, Resilience and Nutrition are developing, or considering the development of, new strategies. Although the policy and strategy landscape is complex and in flux, it is timely to consider how RFS Centers and other sectors can work together to mainstream natural resource management (NRM), including water resources management (WRM), climate change mitigation and adaptation, environmental policy, and land and resource governance into food security, agriculture, nutrition and resilience programming.[i]

This review provides an analysis of USAID policies to help achieve that aim, notably to support the development of guidance that flows from the policies.[ii] The policies reviewed were selected based on Bureau guidance concerning their importance in shaping programming that integrates agriculture, food security and NRM. The review relies primarily on public official documents. It first describes the importance of NRM in the context of food security, agriculture, nutrition, and resilience programming. It then walks through specific policies to identify representations of NRM within those sectors as well as potential gaps and questions for discussion. An analysis section covers cross-policy synergies and issues, leading the recommendations.

All policies point to the need for a systems approach to reducing these threats. What that approach entails for each RFS Center and sector is an important issue for discussion. For instance, the Center for Resilience will continue to focus on integrating resilience to climate related and multivariate shocks, while building human capital.

Key points from the analysis:
GFSS (2022-2026)

- The refreshed GFSS places a major emphasis on NRM, WRM and climate change; there are several pathways within the Strategy to how proposed and potential NRM activities are programmed within RFS and with other units.

Climate Strategy (2022-2030)

- As in the GFSS, agriculture is correctly identified as a major climate change driver and climate change is recognized as a key stressor in agriculture. The strategy highlights NRM approaches supported by RFS such as Climate Smart Agriculture (CSA) and WRM as instrumental to adaptation and mitigation. However, the strategy often lumps agriculture in with other categories of land use and "systems" to be transformed despite its prominence in economic development and in Agency programming. There are only four references to food security and little mention of NRM stresses on and potential contributions to nutrition in the wake of climate change.

Nutrition Strategy (2014-2025)

- While the strategy is multi-sectoral there is no specific link to NRM. However, there is recognition that nutrition-sensitive agricultural practices are attuned to the impacts of NRM, notably WRM, on malnutrition.

U.S. Government Water and Development Strategy/USAID Water and Development Plan (2017)

- The 2017 USAID Water and Development Plan under the USG Water and Development Strategy includes an objective (#4) to improve management of water resources (page 16). The USG Strategy Objective #2 is to "Encourage the sound management and protection of freshwater resources" (page 7). It encourages a holistic approach to WRM.

Resilience Policy and Programming Guidance (2012)

- Working on NRM in resilience programming can be an important entry point to address sensitive sociocultural issues and potentially mitigate conflict. Climate change adaptation is incorporated as a contributor to building resilience. NRM and building resilience to climate change and sustainable productivity through adaptation has been a feature of resilience programming since 2012 according to this guidance.

Environment and Natural Resources (ENRM) Framework (2020)

- The Framework presents several ideas for integration of NRM, however largely through a broad environmental lens that does not home in on specific agriculture and food security intersections. The inter-bureau Sustainable Food Systems Working Group is focusing directly on these issues since the rollout of the framework.

Biodiversity Policy (2015)

- While the Biodiversity Policy promotes integration, programming guidelines for biodiversity funding can challenge integration with agriculture and food security, as well as with some NRM activities in agricultural landscapes.

Cross-policy analysis

- All policies note the importance of social inclusion, attention to gender, youth, Indigenous and vulnerable people to achieving sectoral results. Land tenure and resource property rights underpin agricultural transformation and food security as well as NRM outcomes. Policies should also consider how relations of power shape access to and benefit from technical and natural resources.
- The policies incorporate different elements of NRM and place varying emphases on NRM within food security/agriculture (Table 1).
- The current policies have not finished building the bridge between NRM and food security, agriculture, and nutrition, which is essential for robust food security and poverty reduction in a future of changing climate, loss of biodiversity and natural resource degradation.
- The review presents ideas from the policies that can hasten completion of that bridge, bolstered by attention to governance, diversity, equity, inclusion, and access (DEIA) and a focus on common challenges and solutions across sectors.

A forthcoming Portfolio Review enriches this analysis with examples of technical approaches, operational strategies and indicators gleaned from mission programs. The two reviews served as the foundation for an NRM Mainstreaming Framework.

Table 1: Summary of key points in policies

Policy	Key NRM Elements	Key Food Security/Agriculture Focus
GFSS (2022-2026)	Crosscutting IRs focus on NRM, WRM and Climate Change; Other IRs feature NRM and WRM; fisheries	Improved productivity, agriculture-led growth with "sustainability" Resilience to climate and other shocks
Climate Strategy (2022-2030)	Shifting incentive structures and systems to reduce emissions and foster adaptation across systems, including agricultural systems	Reducing emissions from agriculture-driven deforestation Adapting agricultural systems to climate change
Nutrition Strategy (2014-2025)	Nothing explicitly focused on NRM	Fortification of staple crops
Resilience Policy (2013)	Strong focus on climate change adaptation	Recovery and strengthening of agriculture, livelihoods, and other productive assets from shocks/stress
USAID Water and Development Plan within the USG Global Water Strategy (2017)	Incorporates a water resource management objective and WRM is integrated throughout	Improved water sector governance and sustainable water infrastructure; complementary result on water for agriculture
ENRM Framework (2020)	Facilitates systematic integration of NRM across sectors	Agriculture is broadly included with other land uses
Biodiversity Policy (2015)	Supports NRM in priority biodiverse areas	Fisheries, bushmeat, reducing agricultural extensification

I. Introduction and purpose of the review

The interconnectedness of NRM and food security, agriculture, nutrition, resilience and livelihoods is starkly apparent where natural resources such as soils, rangelands, fisheries, watersheds and wetlands are heavily degraded, reducing productivity across agricultural and natural areas. Programming to address this interconnection is critical for mitigating the impacts of climate change and biodiversity loss, given agriculture's vulnerability, spatial footprint, and contribution to greenhouse gas (GHG) emissions.

Building on a legacy of innovative and effective approaches to food security and agricultural transformation, USAID is increasing focus on combating the impacts of climate change and reducing environmental degradation, which impact food security and impede agricultural growth. At the same time, there is renewed commitment to advance progress in the agricultural sector, which is the backbone of the rural economy and fundamental to poverty reduction.

Cross-sectoral systems thinking—and programming—based on best-practices and learning is being leveraged to tackle these challenges. However, the proliferation of sectoral policies, strategies and guidance across the Agency present a complex mosaic for RFS and Operating Units (OUs) to navigate as they seek to reduce poverty and food insecurity while mitigating environmental threats in the context of building resilience, strengthening good governance, and enhancing diversity, equity, inclusion, and access (DEIA).

Sound natural resource management (NRM) underpins the successful achievement of many of the goals and objectives of Agency policies and strategies. (Box 1). This review is a component of a program of work that supports the RFS goal to elevate the integration of NRM and water resources management (WRM), environmental policy, climate resilience, and land and resource governance (collectively termed "NRM" in this Review) across strategies, policies, programming, and technical guidance. This effort includes a Portfolio Review of programming in selected countries and a Framework synthesizing the information collected on approaches and measures to guide integrated programming and monitoring.

This review focuses on key policy messages related to NRM across the RFS Centers including the 2017-2021 and the 2022-2026 USG Global Food Security Strategies (GFSS), technical guidance documents for the 2017-21 GFSS, the 2017 Global Water Strategy and USAID Water and Development Plan, the 2014-2025 Nutrition Strategy, and the 2012 Resilience Policy. Other documents reviewed include the 2019 Environment and Natural Resource (ENRM) Framework; the 2020 RFS-DDI Land Statement, the 2022-2030 Climate Strategy; and the 2015 Biodiversity Policy. These policies were selected based on Bureau guidance that they shape how the Agency defines and programs NRM activities in the context of agriculture and food security. This review is intended to provide background and context to inform the Portfolio Review. The influence of crosscutting DEIA policies (e.g., Gender, Youth and Indigenous Peoples) is noted but limited to key intersections among DEIA, NRM and agriculture/food security. Annex A lists the documents reviewed and cited.

Box 1: What are NRM and WRM and why are they important for agriculture and food security? NRM is the management of natural resources such as land, water, soil, plants and animals to sustain nature's productivity, with a focus on how management affects the quality of life for present and future generations. NRM is shaped by rules, rights, policies, processes, and institutions engaging multiple stakeholders with differing access to power and influence. Agricultural productivity depends on the provision of ecosystem services such as water availability and quality, pollination, soil fertility and soil biodiversity. Water Resources Management (WRM) is the process of planning, developing, and managing water resources, in terms of water quantity and quality, within and across water uses for the benefit of humans and ecosystems. WRM includes the institutions, infrastructure, incentives, and information systems that support and guide water management and uses. Integrated Water Resources Management (IWRM) is a process that promotes the coordinated development and management of water, land, and related resources (WRM Technical Brief, page 13). NRM and WRM are crucial for food systems to mitigate shocks and stresses from climate change, natural and human caused disasters, as well as to supply foods and products from nature that many communities depend upon. (NRM section adapted from definition in ENRM Framework.)

There is a significant spread in the publishing timeline of reviewed documents. Some policies (e.g., the 2021 release of the GFSS 2022-2026 and the 2022-2030 Climate Strategy) are fresh. Building on previous strategies, these new strategies incorporate many elements that are intended to shift programming priorities. Other documents, such as the 2017 Water and Development Strategy and the 2012 Resilience Policy, continue to guide programming but will be updated in coming months. While neither a policy nor a strategy, the ENRM Framework has influenced the integration of NRM across the Agency and within RFS by identifying intersections and approaches and fostering collaborative programming and support mechanisms.

The Review first describes representations of NRM in agriculture and food security in the policies reviewed. It then identifies synergies and integration opportunities, including illustrative activities that support the integration of NRM into agriculture and food security programming. Potential gaps and issues for discussion across policies are also noted. The conclusion summarizes key findings from the review.

II. NRM representations in key policies

There are multiple interpretations of NRM in the policies reviewed. However, merely mentioning NRM, or even a specific natural resource, does not necessarily mean that it is a programming priority for a given Center or sector. In reviewing the policies, especially the GFSS 2022-2026 and the Climate Strategy, attention was paid to *illustrative activities* under the assumption that such activities could be supported within the given funding stream or sector.

USG Global Food Security Strategy 2017-2021

The GFSS comprises three objectives: 1) Inclusive and sustainable agricultural-led economic growth; 2) Strengthened resilience among people and systems; and 3) A well-nourished population. We include this earlier policy because it shapes current programming. The most recent strategy is reviewed below.

Intermediate Results (IRs) with NRM elements include:

- **IR1's Theory of Change** (TOC) states in part that**:** Feed the Future **(**FTF) will work increasingly on more i**ntegrated value chains** that connect producers (including **farmers, pastoralists, foresters, and fishers**) to markets, often involving countless firms providing agricultural inputs, transportation, logistics, storage, processing, wholesale, and retail.
- **IR4 Increased sustainable productivity, particularly through *climate-smart approaches***
- **IR5 Improved proactive risk reduction, mitigation, and management.** illustrative activity: Improved ecosystem services; and **diversified livelihood systems** that lead to greater productivity and incomes and help reduce, mitigate, and manage risk.
  IR6 Improved adaptation to and recovery from shocks and stresses. Illustrative activity: Using climate smart approaches outlined in IR4.

Three crosscutting intermediate results (CC-IRs) cite potential NRM activities:

- **CC-IR 2 Improved climate risk, land, marine, and other natural resource management**
  - Improved land and soil management

    - Improved sustainable management of wild fisheries
    - Improved and sustainable utilization of ecosystem services
- **CC-IR 5 More effective governance, policy, and institutions**
    - Natural resource governance, including land and marine tenure
    - Illustrative activity (page 29): Strengthening land, marine, and resource tenure, rights, and systems, especially for women and small-scale producers.
- **CC-IR 6 Improved human, organizational, and *system* performance**

Key quote

> "The sustainability of food security investments depends on improved climate-risk and resilience as well as environmentally sound and sustainable management of production systems, whether terrestrial, freshwater, or marine. Natural ecosystems, including forests, grasslands, wetlands, and coastal and marine zones, provide environmental services that contribute to food security and sustainable productivity, such as biodiversity and water. **Food security investments are dependent on ecosystem services** and, when well-managed, contribute to a healthy environment, particularly with respect to soil, water, wild fisheries, forests, and other natural resources. Ecosystem degradation exacerbated by changes in climate, is viewed as contributing to national security risks and displacement of communities, conflict and instability" (GFSS 2017-2021, page 28).

Gaps and questions

In the Monitoring, Evaluation and Learning (MEL) section (page 40), there are no measures proposed for environmental sustainability or NRM. In CC-IR6, it is unclear if "systems" includes ecosystems (Box 3).

USG Global Food Security Strategy (GFSS) 2022-2026

The 2022-2026 GFSS comprises nine IRs within the same three Objectives as the previous GFSS, plus ten CC-IRs, of which several are new or changed. Strategic pivots from GFSS 2016 are found on pages 22-23. Climate change is now a major focus of the strategy, woven throughout. NRM and WRM are more strongly featured in CC-IRs and several illustrative activities.

NRM representations in **Objective 1, Inclusive and *Sustainable* Agriculture-Led Economic Growth,** include:

- **IR1 Strengthened inclusive food and agriculture systems that are productive** and profitable. An illustrative activity calls for: "Strengthening partner-government capacity to develop and manage an open, transparent, and accountable policy environment that...responsibly manages natural resources, such as land use and agriculture policies that discourage agriculture-driven forest degradation or deforestation" (page 29).
- **IR4 Increased sustainable productivity**: Illustrative activities include using the ***One Health*** approach (considering livestock, wildlife, ecosystems and human health as one system), improved NRM and WRM, tenure security, and use of Payments for Ecosystem Services (PES). A box on fisheries management is also found on page 33.

The Theory of Change (TOC) for **Objective 2 Strengthened Resilience Among People and Systems**, notes that "*Building natural resource assets at a systems level improves productivity, health and well-being and enables people and systems to mitigate risk and adapt to climate change"* (page 35).

NRM representations in Objective 2 include:

- **IR5 Improved proactive risk reduction, mitigation, and management.** Illustrative activity: Promoting near-term actions in IR4 focused on sustainable productivity, and in CC-IRs 4, 5 and 6 focused on climate change, NRM and WRM, including inland terrestrial systems, and ocean and marine coastal systems (page 37).
- **IR6 Improved adaptation to and recovery from shocks and stresses**. Illustrative activity: Integrating sustainable productivity approaches outlined in IR4 that also serve to strengthen natural resource assets, ecosystem services, and climate adaptation and co-benefits for emissions mitigation, as outlined in CC-IRs 4, 5 and 6 (page 38).

Objective 3 A Well-Nourished Population, Especially Among Women and Children is comprised of **IR7 (Increased consumption of safe and nutritious foods), IR8 (Increased use of direct nutrition interventions and services)** and **IR9 (More hygienic household and community environments,** which contains one illustrative activity related to NRM: Promoting watershed and water resources management to improve water quality and quantity while promoting equitable use of resources (page 43).

The following gaps and questions were identified in the review. More detailed analysis of the crosscutting IRs, research, and MEL in this critical policy is found in Annex B.

Questions and gaps

GFSS 2022-2026 is a complex strategy. While there are multiple representations of NRM, it is unclear which NRM *interventions* FTF will directly support, and which will be reported as "complementary results." "Healthy ecosystems and biodiversity" for instance is called a complementary result but it is unclear what that means for programming and reporting (page 62). The quote below indicates that GFSS will not be directly supporting such work:

> "Healthy ecosystems and biodiversity, supported by ***other*** vital USG investments, play key roles in reducing global poverty and hunger and improving food security and nutrition. The support of these key factors in food system development extends beyond a traditional focus on on-farm natural resource management practices" *(*GFSS 2022-2026, page 48, emphasis added).

For NRM to be elevated within RFS, it is critical to better understand how the CC-IRs that are focused on NRM, WRM and climate change (see Annex B) will be prioritized for programming and integrated into programs centered on the nine main IRs. It is also unclear if actions and technologies undertaken at ecosystem and landscape levels, such as watershed management, may be defined as elements of CSA (the definition on page 84 notes working on "multiple levels").

IR2 and IR3 lack any cited links to NRM, climate change or WRM. Some potential links include supporting the sustainable use and marketing of agroforestry and forest products to diversity and improve livelihoods and nutrition, making these systems more economically viable and to develop diversified livelihoods (per previous GFSS IR5).

CC-IR4 on climate change notes the need to increase mechanization and use of fertilizers (page 51). Is there not a risk that this will extend the area under agriculture (Jevons Paradox) thus increasing greenhouse gas (GHG) emissions? Also improved supply chains may increase deforestation by increasing access to forests and other natural resources. Thus, agricultural intensification must be paired with

improved forest governance to achieve long-term NRM and climate mitigation. These and other issues are further discussed in Section III with respect to all policies reviewed.

USAID Water and Development Plan within the USG Global Water Strategy (2017)

The 2017 USAID Water and Development Plan under the USG Water and Development Strategy includes an objective (#4) to improve management of water resources (page 16). The USG Strategy Objective #2 is to "Encourage the sound management and protection of freshwater resources" (page 7). Technical guidance on water resources management can be found here. It encourages a holistic view of water resources and includes information and guidance on water resources governance, adaptation to climate change, use of green infrastructure and other issues, linking to GFSS, Resilience and Biodiversity.

Questions and gaps

Compared to the previous strategy (2013-2018), there is no longer an objective focused on water for agriculture, however "efficient agricultural water management for food security" is referenced as a "complementary result" (page 19). As such it is unclear if this entails support for irrigation and/or support for improved water management in rainfed systems. Update, August 2022: An updated strategy will be released soon.

Resilience Policy and Program Guidance (2012)

> "Resilience is the ability of people, households, communities, countries, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth" (Resilience Policy, page 2).

Resilience is not a stream of funding but integrated into FTF and other programs to create clear links and transitions between humanitarian and development assistance, moving toward resilient rural livelihoods (Resilience Policy, page 13). There is however a resourced Resilience Challenge Fund and resilience programming is tracked by the Center for Resilience.

NRM has been featured in Resilience programming from the outset given its focus on pastoral and agrarian communities at risk for climate and other shocks and stresses. Recent guidance noted the importance of "increasing the capacity of communities to sustainably protect and manage community-based natural resources and the wildlife economy (based on the conviction that nature is an economic asset) in anticipation of future shocks and stresses" (Center for Resilience Working Group 2021 Discussion Note #1, page 9).

Climate change adaptation is strongly incorporated into Resilience programming (Policy, page 10). The expansion of Farmer Managed Natural Regeneration (FMNR) and water harvesting--practices that have resulted in the "re-greening" of more than 5 million hectares in Niger and Burkina Faso--provide prominent examples of adaptation (Policy, page 14).

In addition, Resilience resources (see Annex A: References) go into depth about NRM elements including soil fertility from manure, crop residues and legumes, and watershed management (e.g., Resilience Evidence Forum 2018, page 4). The Resilience Evidence Forum 2018 (page 21) also notes that Resilience programming in the areas of water, agriculture/livestock, or natural resource management can

be entry points for dealing with sensitive cultural issues (family planning, women's empowerment) and for mainstreaming girls' education and reproductive health activities." USAID's ecology, economics, governance, and integration framework Nature, Wealth, and Power 2.0 is featured in the August 2017 GFSS Technical Guidance for Objective 2 (page 7).

Questions and gaps

As Resilience programming expands to more countries beyond the original focus on the Sahel and Horn of Africa, how will this expansion be reflected in the new strategy, also considering accelerating impacts of climate change and other growing risks and shocks (e.g., COVID, water crises, conflict that impacts land use and food security)? August 2, 2022: the updated Resilience Policy is out for USAID review.

There is a need to clarify which "systems" are involved in resilience and how systems are interconnected (see Box 3).

Nutrition Strategy (2014-2025)

The multisectoral nutrition strategy comprises four Intermediate Results: 1) Increased equitable provision and utilization of high-quality nutrition services; 2) Increased country capacity and commitment to nutrition; 3) Increased multisectoral programming and coordination for improved nutrition outcomes; 4) Increased global nutrition leadership.

While the strategy is deemed multisectoral, there is no mention of how nutrition programming intersects with NRM or environment programming.

Questions and gaps

Is GFSS-R Objective 3 now the lead strategy for nutrition? Will more NRM and environmental elements be incorporated into nutrition given a strengthening climate change focus? The strategy does not incorporate research on the nutrition impacts of forest and watershed management (e.g., this CIFOR series of publications funded by USAID). The role of forest and other natural products in nutrition is a "complementary result" under GFSS-R, yet these may play a key role in many forest-dependent areas under nutritional stress. See also GFSS 2022-2026 CC-IR5: "enable access to sustainable wild foods, including fish and other marine food products" (page 39).

Climate Strategy (2022-2030)

The strategy aims to:

- Take direct action for mitigation and adaptation;
- Drive system change; and
- Do Our Part (catalyze Agency internal actions).

Like GFSS, this strategy is complex and ambitious. There are multiple integration points related to agriculture and food security in the strategy but in some cases, these must be inferred based on knowledge of previous integrated programming. There is emphasis on environmental policy and market approaches to shift incentives toward improved NRM that will mitigate climate risks and improve adaptation. Of necessity, much of the work will involve a transformation of agriculture and therefore impact food security. Examples include:

- **IR1.1 Catalyze urgent emissions reductions (mitigation):** Continue to support locally informed, national-scale efforts that promote land-based mitigation, such as applying **best practices for the management of agricultural lands.**
- Help partner countries reduce emissions of short-lived climate pollutants, such as **methane** (e.g., agriculture, waste, and fossil fuels).
- **IR1.2 Strengthen climate resilience of populations vulnerable to climate impacts (adaptation)** aligns closely with the work of the Center for Resilience.
- **IR1.3 Increase the flow of and equitable access to finance to support adaptation and mitigation:** Enable climate-adapted agriculture, sustainable water, health and education services, resilient infrastructure, ecosystem protection, assistance to populations after climate shocks (often food related), and nature-based solutions.
- **IR1.4 Partner with Indigenous Peoples and local communities:** Elements of this increasingly important approach (to the current USAID administration) are a feature of agriculture and food security programs. However, additional details beyond locality such as socioeconomic status, age, risk profiles, and tenure security often bear on benefits and outcomes.
- **IR2.1 Advance transformation of key systems and essential services**
    - Work to catalyze major shifts in national and regional energy sources and markets, transportation systems, and **food systems**, among others. The Strategy will encourage emissions reductions through good agricultural production (including methane), reversal of land degradation, and carbon sequestration. Rangeland management to reduce emissions is also considered.
    - Support partner governments in reforming **national agricultural subsidy programs**, which shift market incentives towards climate-smart agriculture practices.
    - Address major underlying constraints to systems change such as corruption, **ineffective land tenure,** and poor infrastructure.

Questions and gaps

"Unsustainable, high-emission economic development is an underlying cause of climate change" (page 4). What may this concern imply for GFSS IR1 agriculture-led growth? More on this issue in Section III.

As in the GFSS, agriculture is correctly identified as a major climate change driver and climate change is recognized as a key stressor in agriculture. The strategy highlights NRM approaches supported by RFS such as CSA and WRM as instrumental to adaptation and mitigation. However, the strategy often lumps agriculture in with other categories of land use and "systems" to be transformed despite its prominence in economic development and in Agency programming. There are only four references to food security and little mention of NRM stresses on and potential NRM contributions to nutrition in the wake of climate change.

There are multiple references to resilient systems, a vague term that may or may not incorporate NRM. There is a missed opportunity to articulate, with RFS, a holistic approach to NRM in agricultural sectors driving climate change and facing immense climate challenges.

"Nature-Based Solutions" as depicted in the Strategy may not always fit with RFS approaches to boost crop productivity (page 48).

- **IR2.2 Support a transition to climate-resilient, net-zero [carbon] economies and financial systems.** What will "transition to a green economy" mean for the agriculture sector and for food security? How will activities such as the examples in **IRs 1.1 and 2.1** be coordinated with RFS?
- **IR2.3 Strengthen responsive, transparent governance and citizen engagement for effective climate action**. There is no mention of how agriculture ministries, farmers groups and associations can play a role in improved land governance, yet these are key USAID partners.
- **IR 2.4 Strengthen the coordination of humanitarian, development, and peacebuilding assistance to address climate impacts.** Assuming there is major coordination with RFS, especially the Center for Resilience, on these efforts. There is a close intersection of NRM, conflict, food security and inclusion.

The ENRM Framework (2020)

The ENRM framework comprises two priorities: 1) conservation and sustainable NRM; 2) sustainable urban systems. Several intersections related to agriculture/food security are found in Priority 1: Managing natural resources for sustainable human use, including working forests and plantations, rangelands and agricultural lands, fisheries, marine and coastal resources, lakes, and rivers.

While the framework reflects cross-sectoral thinking about how NRM can be integrated across sectors, it is largely through an environmental lens. An example is the section on **Strong and inclusive governance structures and capacities at the local and national level,** which mentions "land governance" but does not feature farmland or rangeland management as critical for ENRM.

Questions and gaps

> "Globally, the top threat to natural land areas is agriculture and the production of timber; for marine areas, unsustainable fishing and pollution; and for freshwater, pollution from agriculture, erosion and sediment run-off from poor forestry practices, and disruptions to the natural flow of rivers because of dams" (Framework, page 14).

This resonates with the Draft Climate strategy but poses questions for integration, as it is very broad and does not specify what kind of agriculture is a threat, e.g., smallholder agriculture, which is a target of direct RFS support vs large-scale agribusinesses, which may be private sector partners in both climate change and agriculture programs.

> "The Agency could strengthen our efforts to manage and safeguard natural resources in ways that help avoid the degradation of land, marine, coastal, and freshwater areas through targeted investments and the proactive application of environmental safeguards. **This could include the integration of the landscape-level management of natural resources as part of the productive use of land in agriculture and rangeland systems**, forestry, and infrastructure to ensure healthy watersheds and ecosystems underpin sustainable development" (Framework, page 5).

It is unclear here how environmental safeguards would be applied at the *landscape* level in FTF programming. More detail is needed on how integrated landscape management would be implemented given the challenges of working across multiple jurisdictions, often in the context of overall weak governance and highly unequal power relations. It has been attempted, with Low Emissions Development Strategies (LEDS) and the decade-long integrated land use planning effort of the Central Africa Regional Program for the Environment—what are the lessons?

Box 2: Natural resources and NRM systems in policies. Several NRM systems and specific natural resources are featured in the policies reviewed. Most prominent in the GFSS are fisheries management as well as agroforestry and other approaches for climate change adaptation and mitigation under the rubric of CSA. Watershed management is featured in the 2017 USAID Water and Development Plan. Other policies feature forest management, marine and coastal area management (Climate Strategy), rangeland and pastureland management, Farmer-Managed Natural Regeneration (Resilience), and biodiversity and wildlife in agriculture and food security (Biodiversity and Development Handbook). Agrobiodiversity and soil biodiversity are not covered directly under the policies reviewed. The Portfolio Review provides more detail on programming in these systems.

Biodiversity Policy (2015) and the Biodiversity and Development Handbook (2015)

The Biodiversity Policy has two goals: 1) conserve biodiversity in priority places, and 2) integrate biodiversity as an essential component of human development. While the second goal is all about integration, funding restrictions apply as governed by the "Biodiversity Code" (Policy, page 15). This code restricts use of earmarked Biodiversity funding to areas of priority biodiversity and requires a Theory of Change with a biodiversity objective that is monitored for how activities reduce threats to biodiversity. As such, agricultural activities using Biodiversity funds must show not only that they are not harming biodiversity, which in any case is covered under environmental compliance, but that they are reducing pressure on priority biodiverse areas.

Key NRM and agriculture/food security intersections include fisheries management; reducing wildlife (bushmeat) consumption and finding protein alternatives to bushmeat; pollinators; insects for nutrition and animal feed (reduces emissions); and sustainable agricultural approaches to reduction of threats to biodiverse areas. Multiple programming examples can be found in Chapters 4.2, 4.3 and 4.6 of the Biodiversity and Development Handbook.

Questions and gaps

Some NRM and environment activities may not be eligible for Biodiversity funding if they are not situated in or linked to management of biodiverse areas, and/or if there is no clear objective and strategy to reduce threats to biodiversity in those areas. Biodiversity funding is not used for agrobiodiversity or soil biodiversity in agricultural landscapes. Soil biodiversity may be covered by FTF programming in some circumstances, but agrobiodiversity seems to fall through the cracks, although it is critical for sustaining Indigenous food systems.

III. Cross-cutting analysis

Synergies and opportunities

Systems approaches are features of all the strategies, policies and guidelines reviewed. A systems approach implies programming is inclusive of the integration and/or collaboration of interconnected sectors and sub-sectors and areas of expertise to attack complex problems such as food system security in the face of climate change.

Box 3: Defining terms

To be useful for OUs, general terms such as "system" and "sustainability" in policies require clear definitions and examples. These terms have multiple meanings, depending on the sector and context, and these meanings have implications for programming. To integrate NRM, poverty reduction, agriculture and food security, systems frameworks such as *Nature, Wealth and Power* can be deployed. It is important to remember that while systems exist in nature, in development they are a heuristic, crafted around an objective or issue. Sustainability also has multiple meanings, which have been defined in the USAID context since the 1990s (Russell, 1992).

All policies note the importance of social inclusion, attention to gender, youth, Indigenous and vulnerable people to achieving sectoral results while reducing poverty and inequality. One example of how these social objectives align with both NRM and agriculture/food security is joint management of wildlife and livestock in rangelands inhabited by Indigenous pastoralists (Biodiversity and Development Handbook Chapter 4.3.2, page 139). Other examples are identified in the Portfolio Review.

In addition, considerations of land tenure and other resource property rights underpin agricultural transformation and food security as well as NRM outcomes through enhanced stewardship of land and common property natural resources. Access to and/or ownership of land and resources by women, Indigenous Peoples, youth, and vulnerable groups is deemed critical to outcomes (Climate Strategy IR1.4, page 21; GFSS 2020-2026, page 53). All policies note that investment in good governance and strong institutions, especially local institutions, is foundational for achieving results across sectors.[iii]

The interconnectedness of NRM and food security, agriculture. resilience, nutrition, and livelihoods become starkly apparent where key resources such as soils, rangelands, fisheries, watersheds, and wetlands are heavily degraded, reducing productivity across agricultural and natural areas (GFSS 2022-2026, page 54). Operating Units can use a spectrum of programming options, from shorter term humanitarian assistance to longer term investments that shift market and governance incentive structures, to devise phased and adaptive approaches to integrating NRM, especially as situations rapidly change due to climate change, pandemics, conflict, or other factors. This flexibility is a core feature of resilience programming. OUs can adapt many of the approaches and illustrative activities listed in the new Strategies to mix and match to their circumstances (country priority problems, funding levels and streams). The Portfolio Review has uncovered innovative approaches to incorporating NRM in food security, agriculture, nutrition, and resilience programming. For instance, BHA has incorporated food-for-work on community asset-building efforts such as watershed restoration and small dams.

The concept of **resilience** and the mandate of the Center for Resilience are central to climate-smart and NRM-friendly approaches to agriculture/food systems as resilience means enhancing natural, economic/financial, political, and social capital to respond to shocks and stresses, many of which stem from climate change and/or natural resource degradation as well as conflict with resulting losses of productive assets, social capital, trust, and collective action. Attention to the resilience of NRM within a food systems approach could incorporate how common property natural resource management systems and institutions maintain ecosystem services and productivity. Examples include watershed management groups, customary pastoralist/regenerative rangeland management, and fisheries management. Again, governance and tenure are likely to be key features.

Some activities informed by this review may foster deeper integration and understanding of the interrelatedness of NRM and agriculture/food security and resilience objectives:

- Developing a **methane reduction strategy** across agricultural systems, especially on livestock, rice production, and reducing food waste (Climate Strategy 2022-2030, IR1.1, page 14). Update for April 2022: a methane strategy and action plan is being developed.
- Supporting **land and other natural resource governance** that jointly protects agricultural and natural assets (e.g., watershed and riparian management and restoration, community forestry with integrated agriculture, fisheries management) (2020 Joint Land-BFS Land Statement, page 1).
- Studying the **lessons of USAID integrated emissions reduction approaches** across natural and agricultural landscapes (e. g., LEDS) (GFSS 2022-2026, page 50).
- Addressing **governance challenges in NRM and agriculture** (e.g., corruption, rent-seeking, elite-capture) that result in poor policies, weak policy uptake and perverse outcomes across sectors; commissioning integrated
  Political Economy Analyses (PEAs) and using these to devise integrated programming (Climate Strategy 2022-2030, IR 1.1, page 15; ENRM Framework, page 3).
- Addressing conflict through integrated approaches to peacebuilding, for instance, pastoralist-farmer conflict (Climate Strategy 2022-2030, page 34).
- Crafting **diversified livelihoods approaches for youth ("Green Jobs")** that entail NRM and agriculture-based enterprises, technology, communications, and commerce (GFSS 2017-2021, IR3, page 14 and GFSS 2022-2026, page 21; Climate Strategy 2022-2030, page 45). Update for April 2022: initiatives are ongoing related to Green Jobs in both RFS and DDI (Climate). It would be ideal to combine them to provide a range of options across environment and agriculture.

Gaps and issues for discussion

In some areas, *land sharing* rather than *land sparing* (a key approach cited in GFSS 2022-2026, IR1) may be more appropriate to protect pollinators, wild foods, and wildlife habitats/corridors as well as to diversify incomes. In addition, RFS might consider where an *agroecology* approach is warranted, for example in ecologically fragile areas and those that border key ecosystems.

A Bureau for International Food and Agricultural Development (BIFAD) report on FTF efforts in Africa notes that

> "While agricultural production growth has been a major driver of sub-Saharan Africa (SSA)'s economic transformation and improvements in living standards, production growth has been achieved mainly through the expansion of cropped areas rather than through productivity growth."

These considerations should not, however, come at the expense of raising the incomes and improving the food security of poor people, especially in areas where it is challenging to reduce extensification due to the low profitability of agriculture and/or low labor availability.

There is lack of clarity on the use of earmarked or targeted funds and how to integrate funding streams. GFSS 2022-2026 cites multiple illustrative activities without indicating if these are priorities for funding, suggestions for co-funding or for other-sector funding that complements FTF (e.g., "complementary results" as noted above). Typically, this information is provided in follow-on guidance but including some element of this information in policies could increase transparency and utility to OUs.

The way in which Economic Growth (EG) is characterized in GFSS 2022-2026 and the Climate Strategy may be a matter for discussion. For instance, in the Climate Strategy, unsustainable EG is highlighted as driving emissions, while "sustainable agriculture-led growth" is central to GFSS 2022-2026. How will USAID determine what types of agriculture-led growth qualify as "sustainable," and/or do and do not contribute to increased greenhouse gas (GHG) emissions? The Climate strategy underplays the importance of agriculture to EG in developing countries and fails to consistently distinguish how different forms of agriculture (smallholder, agribusiness, plantations) contribute to emissions. An important opportunity for this implementation of this strategy might be to show how mitigation can be better integrated with GFSS, other RFS strategies and in programming.

There is little mention of the importance of culture and heritage in shaping both NRM and food systems. The USAID Indigenous Peoples Group produced guidance that included information on Indigenous food systems, and there are many other examples of the importance of culture in food and cooking preferences, farming systems and NRM (German, Ramisch and Verma 2010). These considerations are central to technology transfer and behavior change interventions as well as for mobilizing collective action around farming and NRM.

Greater clarification is needed on how environmental compliance (Reg 216), conflict and climate screening fit into approaches and illustrative activities suggested by policies. For instance, would protection of pollinators in a sustainable intensification activity be covered under Reg 216? Also, guidance could consider ways to use the Tropical Forestry and Biodiversity (118-119) analyses, which cover the impacts of activities in all sectors on key natural resources, to develop integrated country strategies.[iv]

To ensure wide adoption that can mitigate climate impacts. attention to the *political economy dimensions* of sustainable practices, especially for smallholders, is warranted (see Integra 2016). What forms of CSA are affordable in each circumstance? Do elements of the technology need to be subsidized? For how long? Are the practices largely available to elites due to cost and/or land security? And are profits able to cover costs?

In the GFSS 2022-2026 there is little mention of protection of pollinators that are essential to sustaining productivity of key FTF crops.[v] There is scant mention of the depletion of wildlife, wild plants, and insects as threats to food security in areas dependent on bushmeat, many of which are highly food-insecure. As well, there seems to be a lack of attention to freshwater biodiversity and fisheries from all sectors, yet it is critical to incomes and food security in many poor countries. There is also little mention in the GFSS of nature-based technologies for fertility restoration/ regeneration/nutrient cycling.[vi] In addition, the relationship between NRM and markets/value chains is not articulated in GFSS 2022-2026 (e.g., processing and employment opportunities in NRM and non-timber forest value chains of micronutrient dense products).

IV. Conclusion

This Review presents an overview of the mandates, priorities, and approaches in the reviewed Strategies and Policies related to NRM. The policy landscape is complex and multifaceted. It is also evolving rapidly, and this Review will soon need to be updated as BHA, Water and Resilience come out with updated and/or new strategies. With GFSS 2022-2026, NRM in theory may now be integrated at all levels, from the plot and field (e.g., CSA) to the ecosystem (watershed management, climate change adaptation). But connecting theory with practices on the ground can take time.

There remain distinctions between the objectives of agriculture and food security programs and those focused on water and natural resources. As one can see from both the former and the new GFSS, NRM is an element of a program that is, at its core, about reducing poverty, improving food supply, and contributing to sustainable economic growth through improved productivity of farming and functioning of markets. The contributions of NRM to economic gains in that context may be hard to measure in the shorter term.

Environment and NRM programming, as exemplified in the Climate Strategy and the Biodiversity Policy, is also centrally concerned with human well-being, but longer-term results and broader natural systems are key elements in programming (e.g., as illustrated in USAID's *Nature, Wealth, & Power 2.0*). Economic benefits from biodiversity, climate and other ENRM programming often come indirectly from improvements in governance and thus may be hard to quantify (Biodiversity and Development Handbook, Chapter 4.10 "Economic Growth").

Integrated programming can address both more immediate and longer-term objectives but juggling diverse streams of funding is challenging for OUs. As such the review referenced potential synergies within the RFS Center policies and with other USAID programming outside of RFS (ENRM framework, Biodiversity Policy, PRO-IP, BHA and others) to inform integrative programming options. The Portfolio Review goes on to feature mission programming that supports NRM and describes diverse modes of integration and collaboration. This effort together with this Policy Review informed the development of the Framework for mainstreaming NRM into RFS to support guidance and communications.

Annex A. References

Documents reviewed

2017-2021 USG Global Food Security Strategy 2017-2021

USG GFSS 2017-21 Technical Guidance documents (3) on Objective 1 (Ag-led growth), Objective 2 (Resilience), and IR 4 (Increased Sustainable Agricultural Productivity)

2022-2026 USG Global Food Security Strategy (aka GFSS-R; 10/2021)

2017 USAID Water and Development Plan within the USG Global Water Strategy

2012 Resilience Policy and Program Guidance

2014-2025 Nutrition Strategy 2014-2025

10/2021 Draft Climate Strategy

2022-2030 Climate Strategy

2020 ENRM Framework 2020

2015 Biodiversity Policy and the 2015 Biodiversity and Development Handbook (2015)

Other documents cited

2012 USAID Youth in Development Policy

2013-2018 USAID Water and Development Strategy

2019. USAID DCHA Indigenous Peoples and Food Security Guidance

2019 FTF Indicator Handbook

2020 BIFAD Report on Agricultural Productivity Growth, Resilience and Economic Transformation in Sub-Saharan Africa: Implications for USAID

2020 Joint RFS-DDI Land Statement

2020 Policy on Promoting the Rights of Indigenous Peoples (PRO-IP)
Automated Directives System ADS 201: Program Cycle Operational Policy

2020 USAID Gender Equality and Women's Empowerment

Center for Resilience Working Group 2021 Discussion Note #1

Central Africa Regional Program for the Environment. Land Use Planning Guide 3.0. US Forest Service. No Date.

CIFOR publications on forests in food security and nutrition

Enhancing Capacity for Low-Emission Development Strategies (web page)

German, L., Ramisch, J. And R. Verma, 2010. Beyond the Biophysical: Knowledge, Culture, and Politics in Agriculture and Natural Resource Management. Springer in affiliation with Center for International Forestry Research (CIFOR).

Land Potential Knowledge System (Land PKS) (web page accessed May 25, 2022)

Integra LLC. 2016. Adoption of Climate-Smart Agriculture in Africa: Constraints, Incentives and Recommendations.

Nature Wealth and Power 2.0

The Resilience Evidence Forum 2018

Russell, D. 1992. Theory and Practice in Sustainability and Sustainable Development. USAID Center for Development Information and Evaluation.

Water Resources Management Technical Brief, USAID Water and Development Technical Series, September 2021

Annex B. NRM in GFSS 2022-2026 cross-cutting IRs, Research, Monitoring, Evaluation and Learning

CC-IR1 (Investing in food security) contains no illustrative activities related to NRM.

CC-IR2 (Gender and female empowerment): Illustrative activities include Integrating gender into climate mitigation and adaptation efforts...to achiev[e] more effective, equitable, and sustainable outcomes. Promoting clear, secure, and transparent land, marine, and resource tenure rights, particularly those of women, small-scale producers, and communities (page 34).

CC-IR3 (youth): Illustrative activity: climate change...presents an opportunity to create new jobs that help meet the needs of both people and the planet. A focus on creating jobs for youth that use greener practices in agri-food systems can help meet climate adaptation goals (page 36).

CC-IR4 (Climate change mitigation and adaptation): Illustrative activity: Enhancing carbon sequestration and climate resilience through agroforestry, agropastoral systems, perennial crops, and management of soil fertility and water use (page 42).

CC-IR5 (NRM): Illustrative activity: Integrate food systems development into USG biodiversity conservation efforts to help food-insecure populations living in or near high biodiversity areas adopt strategies for intensification, encourage reduced levels of deforestation, and enable access to sustainable wild foods, including fish and other marine food products (page 39). [NB: This is already happening in programs such as around Gorongosa National Park in Mozambique and Okapi Wildlife Reserve in the Democratic Republic of Congo.]

CC-IR6 (WRM): Illustrative activity: Supporting watershed conservation and restoration efforts that improve water quality and retention and strengthen natural systems and ecosystem services, such as soil conservation practices, reforestation, and the construction of infiltration ponds, sand dams, and vegetive buffer strips (page 44).

CC-IR7 (Governance and policies): Illustrative activity: Strengthening land, marine, and resource tenure, rights, and systems, especially for women and small-scale producers (page 38). Note: no mention of NRM governance generally.

CC-IR8 Improved human, organizational, and system performance: Nothing specific to NRM identified in this IR but the concept of promoting alliances could be applied, e.g., alliances for watershed management. There is ambiguity in the use of the term "system."

CC-IR9 Increased Opportunities for Conflict Prevention, Peace and Social Cohesion
Illustrative activity: Investing in political economy analysis and conflict analysis to identify the root causes and triggers of conflict and violence in countries and regions. This includes a context-specific lens on crosscutting factors such as gender, age, land and water resources, livelihoods, migration and pressure on natural resources, systems that support social cohesion, local governance, and others as applicable (page 45).

CC-IR10 (Digital technologies). Nothing specific to NRM but USAID has supported the development of digital technologies to characterize and assess land suitability and natural resources

endowments (e.g., the Land Potential Knowledge System LandPKS). The Center for Resilience uses wide scale digital technologies in landscape mapping and risk management for resilience.

Research and Monitoring, Evaluation and Learning
"Agricultural Research, Development and Extension (R, D&E) is essential to meeting and reconciling food-security, nutrition, environmental, biodiversity, and climate change challenges, as these are integrally linked in both local and global contexts" (page 75).

This policy review does not involve a detailed analysis of FTF and related indicators and measures. However, few if any indicators in the 2019 FTF Indicator Handbook (cited as still valid for GFSS-R) unambiguously reflect NRM results (e.g., "improved management practices" or "tenure rights" could focus on agriculture and/or natural resources). There are, however, some context indicators related to climate change (e.g., FTF Context 12, 13 and 14). Page 81 notes that performance indicators will be set within Zones of Influence (ZOIs). This may result in lack of information about ecosystem or landscape scale results and trends.

Endnotes

[i]The term "NRM" will henceforth cover WRM, environmental policy, land tenure and property rights policy and governance, climate mitigation and adaptation.

[ii] For this analysis, the term "policy" covers policies, strategies, and frameworks. Refer to ADS 201 for USAID definitions of policy, strategy, framework, and guidance.

[iii]There is now emphasis, through the New Partnership Initiative and other Agency efforts (e.g., Localization Agenda), to channel funding and support directly to local partners and engage in co-creation with them. These efforts may have implications for how RFS implements policies, including the types of activities proposed as appropriate for local groups and how they can have direct input into the process. Such efforts involve considering how local-regional-global systems and networks of partnerships across the sectors function and integrate to deliver results (e.g., CGIAR>National Agricultural Research Systems NARS)->Farmer Groups; Indigenous umbrella groups>local advocacy groups; Global environmental/climate change organizations>country level organizations>local environmental defenders).

[iv] See Environmental guidelines for agriculture. Other sectoral environmental guidelines are found here

[v] GFSS 2022-2026, page 54: In the terrestrial context, land degradation has reduced agricultural productivity across nearly a quarter of the global terrestrial area, and pollinator loss puts at risk between $235 billion and $577 billion in annual global crop output.

[vi] GFSS 2022-2026, page 51: Illustrative example under crosscutting IR4: Enhancing carbon sequestration and climate resilience through agroforestry, agropastoral systems, perennial crops, soil health enhancement, and improved WRM.