



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



Ghana Agriculture and Natural Resource Management Project

Final Report | 2016 – 2018

Ghana Agriculture and Natural Resource Management Project Final Report

May 2 2016 to December 31 2018

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ACTIVITY/MECHANISM OVERVIEW

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1. ACRONYMS AND ABBREVIATIONS

AgNRM	USAID Ghana Agriculture and Natural Resource Management Project
BCC	Behavior Change Communication
BVC	Black Volta Corridor
BY	Builsa Yening
CBEAs	Community Based Extension Agents
CEC	CREMA Executive Committee
CECOTAPS	Center for Conflict Transformation and Peace Studies
CFC	Community Field Coordinator
CLDV	Community Land Demarcation Volunteer
CLUP	Community Land Use Plan
COP	Chief of Party
CREMA	Community Resource Management Area
CRMC	Community Resource Management Committee
CSA	Climate Smart Agriculture
EBC	Eastern Biodiversity Corridor
ESDST	Ecosystem Services Decision Support Tools
ES	Ecosystem Services
FC	Forestry Commission
FGD	Focus Group Discussion
FMNR	Farmer Managed Natural Regeneration
FSD	Forest Services Division
FY	Fiscal Year
GFSS	Global Food Security Strategy
GIS	Geographic Information System
GoG	Government of Ghana
GPS	Global Positioning System
IP	Implementing Partner
LURF	Land Use Rights Formalization
M&E	Monitoring & Evaluation
METSS	Monitoring, Evaluation and Technical Support Services
MOU	Memorandum of Understanding
MUS	Multiple-Use Water Services
MWK	Moaduri Wuntaluri Kuwesasi
NCRC	Nature Conservation Research Centre
NRM	Natural Resource Management
NRP	Natural Resource Product
NWP	Nature, Wealth and Power
PES	Payment for Ecosystem Services
PRA	Participatory Rural Appraisal
Q	Quarter
RFA	Request for Application
RFP	Request for Proposal
SKGK	Sanyiga Kasena Gavara Kara
SMS	Short Message Service
TNS	TechnoServe
ToR	Terms of Reference
ToT	Training of Trainers
USAID	United States Agency for International Development
USG	United States Government
USGS	U.S. Geological Survey
VSLA	Village Savings and Loan Association
WBC	Western Biodiversity Corridor
WCHS	Wechiau Community Hippo Sanctuary
WD	Wildlife Division
ZOI	Zone of Influence

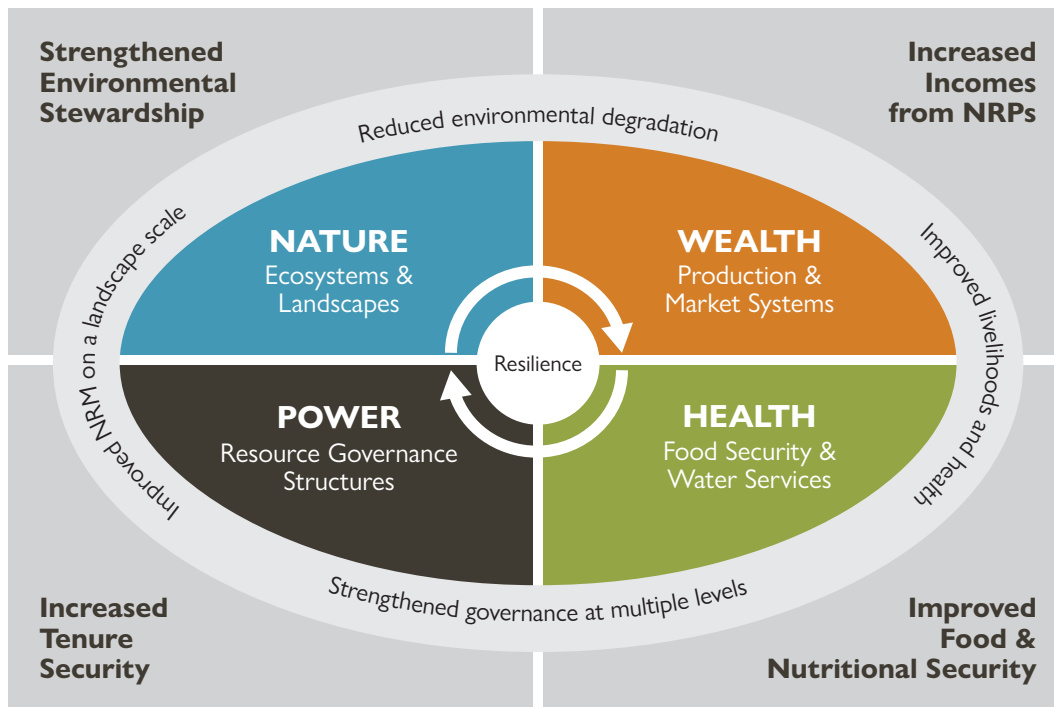


2. EXECUTIVE SUMMARY

The Feed the Future Ghana Agriculture and Natural Resource Management (AgNRM) project was awarded as a five-year, \$24,900,000 program to run from May 2, 2016, to April 30, 2021. Winrock International implemented AgNRM in partnership with the Nature Conservation Research Centre (NCRC) and the Center for Conflict Transformation and Peace Studies (CECOTAPS). AgNRM was at the forefront of the United States Agency for International Development (USAID) Ghana's Feed the Future portfolio to address issues of environment and natural resource management (NRM) in northern Ghana.

AgNRM supported USAID|Ghana's Development Objective 2, the Ghana Feed the Future Multi-Year Strategy and built on USAID's resilience strategy and its investments in the Feed the Future Zone of Influence (ZOI). Interventions and approaches were designed to mutually reinforce systemic changes that align with and augment the Government of Ghana's (GoG) Food and Agriculture Sector Development Pol-

FIGURE 1: AGNRM OBJECTIVES SUPPORTING THE NATURE WEALTH HEALTH AND POWER FRAMEWORK.



icy, and the Nature, Wealth, Health and Power (NWHP) framework. This ensured integration of food security and water systems and highlighted the importance of these factors to nutrition and resilience.

AgNRM achieved progress towards the project goal of poverty reduction through sustainable increases in wealth and nutrition from natural and non-traditional agriculture products by addressing environmental, agricultural, governance, and natural resource management (NRM) challenges. AgNRM project interventions resulted in transformative change: adoption of improved practices, technologies, and behaviors; better functioning value chains and governance structures; more equitable access to land and resources; increased capacity of organizations to manage natural resources, address drivers of environmental degradation, and enhance rural livelihoods.

AgNRM established and maintained partnerships with a range of stakeholders, including Ghanaian and US government authorities, community groups in target landscapes, as well private sector enterprises on a wide range of project interventions, including technical support, sharing of information, coordination and planning, and business development

AgNRM project activities were implemented under four project outcomes:

- 1) Increased Incomes from Natural Resource Products (NRPs);**
- 2) Improved Food and Nutritional Security;**
- 3) Increased Farmer and Community Security/Access to Land and Natural Resources; and**
- 4) Strengthened Environmental Stewardship.**

NRPs provide sources of food, fodder, fuel, medicine, cosmetics, and construction materials to rural communities. AgNRM interventions increased the sustainable production and trade of NRPs, improving rural livelihoods and household incomes for vulnerable populations across the target geography. Through a value chain approach, AgNRM facilitated collaboration between NRP collectors and producers in the CREMAs, buyers, and marketing agents, training 9,620 individuals on improved agricultural practices and increasing incomes of 3,507



rural people. The implementation of shea, moringa, dawadawa and tamarind value chain activities increased production levels, value addition and improved access to market and financial services for the project beneficiaries.

AgNRM assisted farmers to scale up adoption of climate smart agriculture practices (CSA) that increased both water and plant nutrient-use efficiencies. CSA approaches offer men and women farmers substantial benefits in terms of increased productivity and income, better risk management, and improved resilience to climate change. AgNRM CSA interventions included improved rainfall harvesting, trenching, contour plowing, integrated soil fertility management (ISFM) as well as diversification of perennial crops and promotion of drought tolerant varieties. These interventions resulted in improved productivity, increased yield, reduced input costs and overall reduction in vulnerability to climate shocks and extreme weather events. AgNRM interventions on improving natural resource management resulted in 1,306,072 tons of Carbon Dioxide Equivalent (CO₂e) sequestered or avoided – equivalent to 277,298 passenger vehicles driven for one year.

Through strengthening Village Savings and Loan Associations (VSLAs), the project increased women's abilities to save and better manage finances, enabling payment for farm activities and agricultural inputs which resulted in both improved incomes and overall food availability and family nutrition. To address land conflict and insecure tenure rights, AgNRM worked with local leadership structures, community associations as well as faith leaders to harmonize land and resource tenure frameworks and improve cooperation between local customary and government decision makers. AgNRM helped women's groups acquire long-term tenure arrangements, providing a foundation for NRP enterprises, small scale horticulture and livestock raising.

AgNRM provided crucial support to the strengthening and establishment of 8 CREMAs, enhancing the CREMA approach through the deployment of local experts and community-based resource persons. Bio-monitoring systems were established to record and monitor a range of important biodiversity, including numerous threatened bird species, elephant, as well as northern Ghana's most significant hippo population. AgNRM built community interest in establishing CREMAs in the Eastern Biodiversity Corridor (EBC), a significant step towards protecting habitat connectivity for elephants and securing access to land and NRPs for local communities.

AgNRM produced The Northern Ghana Land Use Ecosystem Service and Economic Valuation Study, which assessed the economic and environmental implications of land use and land use change which serves as a useful resource for land users and other stakeholders to make better decisions on how to balance short and long-term food security and financial needs in the face of population growth, natural resource constraints and a changing climate. Accompanying products such as the Eco Game and Land Use Impact Planning learning tools helped educated CREMA members on complex environmental issues and trade-offs through graphic representation and interactive game playing.

Due to a shift in programming with the launch of the new Global Food Security Strategy (GFSS) and reduced funding levels for Ghana, USAID made the difficult decision to end the AgNRM activity early to better align its reduced funds with GFSS strategic imperatives. The project ended December 31, 2018. This final report provides a narrative overview of work undertaken across each of the four technical objectives, partnerships established and developed, as well as crosscutting themes such as grants, gender, communications, and M&E. Lessons learned and recommended actions for the way forward are also presented. A table of complete results against performance indicators is provided in Annex 1.

1. Notable AgNRM Achievements

9,620

people received agriculture or food security training

3,507

people with increased economic benefits derived from sustainable natural resources management

\$980,000

in value of sales revenue generated by MSMEs from natural resource products

3,790

people trained in child health and nutrition

30

land use plans proposed, adopted or implemented

Greenhouse Gas emissions:

1,306,072

tons of Carbon Dioxide equivalent reduced, sequestered and avoided

238

food security private enterprises assisted

4,149

farmers applying improved agricultural practices or technologies





3. INTRODUCTION

The AgNRM project design applied an integrated, landscapes approach that aligns development and conservation and responds to the interdependencies of ecosystems and livelihoods.

Integration was reflected across the full spectrum of programming, including geographic targeting, technical approach, outcomes measurement, and program management. Geographic targeting was driven by the successful CREMA model promoted by the Forestry Commission for sustainable resource management in Northern Ghana, which addresses landscape level protected area management and biodiversity conservation while simultaneously catalyzing sustainable livelihoods in natural resource products (Box 2). The project implemented activities across the four outcomes in the three biodiversity corridors, targeting eight CREMAs. The targeted CREMAs were selected after extensive assessment and consultation with the Wildlife Division, the CREMAs themselves, and USAID. AgNRM worked in three CREMAs in the Black Volta corridor, three in the Western Biodiversity corridor, and two in the Eastern Biodiversity corridor. These locations strategically connect critical gazetted parks and reserves, ensuring a landscapes approach. Please see Map 1 showing geographic targeting.

AgNRM established three satellite offices to support activities across this broad geography – in Sandema, Wa and Bolgatanga, supported by the main project office in Tamale.

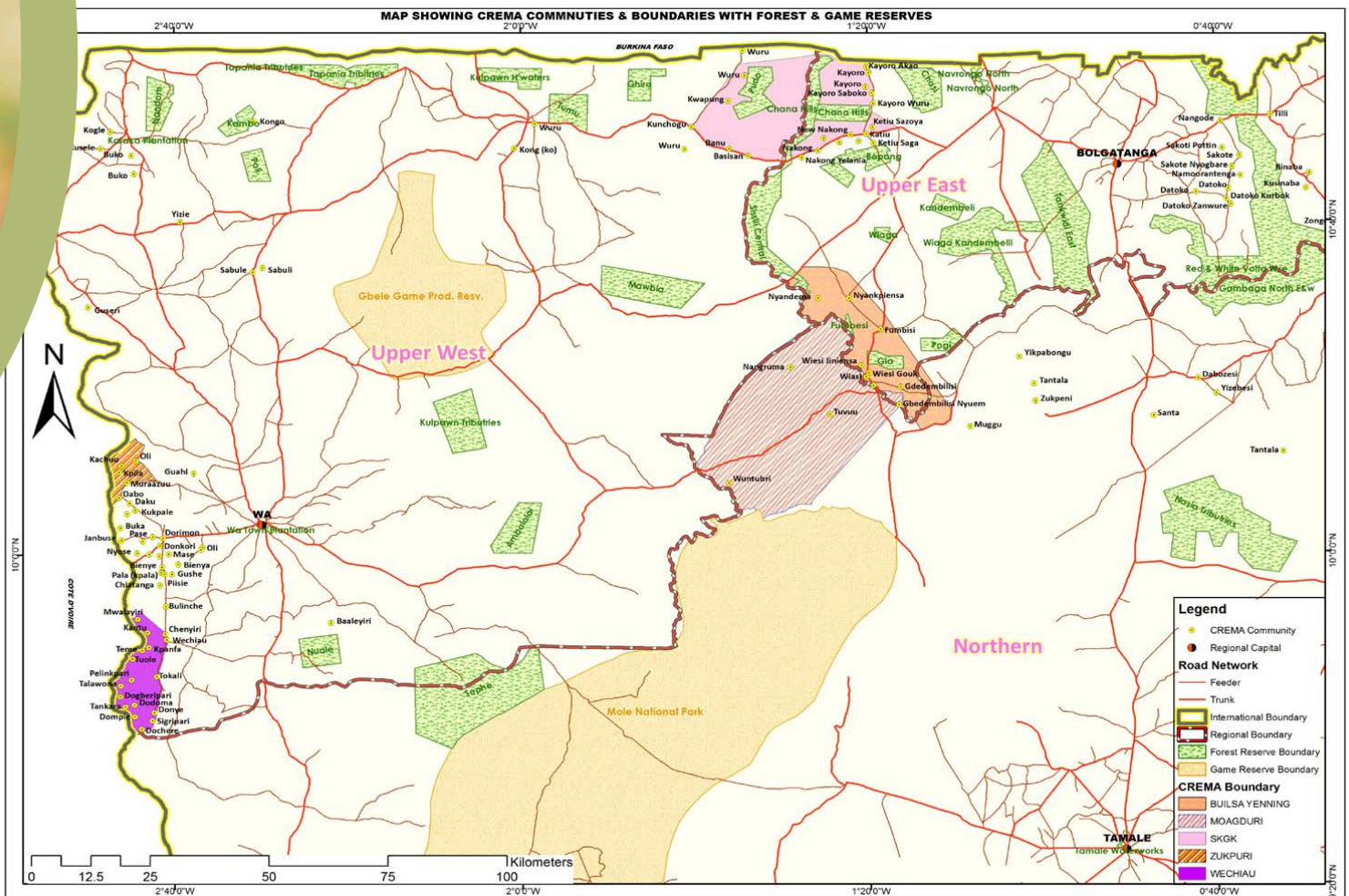


2. GoG's CREMA mechanism

The CREMA model conserves critical wildlife corridors while increasing compatible economic livelihoods for communities. Our approach was informed by NCRC's in-depth experience working with the Forestry Commission to develop and implement the CREMA model. A GoG CREMA is characterized by:

1. A protected area with clear social/physical boundaries and land rights
2. Grassroots mobilization uniting residents and communities in planning
3. Governance structure that includes traditional authorities, ordinary citizens, and GoG enforcement authority
4. Sustainable balance between conservation and economic use
5. Conflict resolution based on allocation of resources through community decision-making.

MAP 1: AGNRM TARGET CREMAS



To strengthen the CREMA governance structures, AgNRM conducted a CREMA Institutional Capacity Assessment (CICA) across all target landscapes. The assessment highlighted focal areas that must be further developed to ensure CREMAs function effectively and efficiently. A summary of competence areas with requisite trainings were developed and a complete list of findings to be carried forward by future implementers are available in Annex 2.

Black Volta Corridor

Despite a financial slow-down which limited the number of activities implemented, the Wechiau and Dorimon CREMAs made crucial progress with support from NCRC in validating new or revised by-laws in a process that was highly participatory and included significant engagement from the District Assembly and other government stakeholders. The development of by-laws that have real buy-in, is essential to effective natural resource stewardship and biodiversity conservation by communities. In 2018, the three Black Volta CREMAs also demonstrated considerable improvement in their capacities to monitor biodiversity during the bird and hippo surveys, reporting 36 bird species recorded for the first time by the biodiversity monitoring team in the three CREMAs and the highest number of hippos along the river corridor to date.

Eastern Biodiversity Corridor

Significant progress has been made with the CREMA development initiative in the EBC. AgNRM consulted with all the major stakeholders and traditional authorities on the development of CREMAs. Using trained community representatives, 72 communities in the enclaves 1 and 2 have been sensitized on the CREMA concept and formation process. A formal request has been submitted to WD by the traditional authorities for a development of CREMAs in the EBC as well as CREMA governance structures have formed in all the communities (i.e. Community Resources Management Committees and CREMA Executive Committees). Members of the governance structures have been orientated on their roles. AgNRM has also developed a road map for the development of constitution and by-laws for the CREMA. AgNRM has also worked with traditional and local government authorities to mitigate human elephant conflicts with the proposed corridor area.

Western Biodiversity Corridor

AgNRM in collaboration with WD mapped the external boundaries of CREMAs in the WBC. A roadmap for the development of a community led biomonitoring program was developed. Implementation of the community led biomonitoring program will help communities to protect and monitor population of plants and animals within the CREMAs.

TABLE 1: CREMA SITE INFORMATION

No.	Site Name	CREMA Name	Status	District	Region	Biodiversity Corridor
1	Zukpiri	Zukpiri	Certified	Nadawli (Zukpiri)	Upper West	Black Volta
2	Wechiau	Wechiau Community Hippo Sanctuary (WCHS)	Certified	Wa West (Wechiau)	Upper West	Black Volta
3	Dorimon	Dorimon Paramountcy	Implementation	Wa West (Dorimon)	Upper West	Black Volta
4	Wuru-Kayoro	Sanyiga Kasena Gavara Kara (SKGK)	Certified	Sissala East / Kasena Nankana (Kayoro)	Upper East	Western
5	Bulsa Yening	Bulsa Yening (BY)	Early Implementation	Bulsa South (Wiasi)	Upper East	Western
6	Moaduri Wuntaluri Kumwusai	Moaduri Wuntaluri Kumwusai (MWK)	Early Implementation	Mamprugu / Moagduri (Yezisi)	Northern	Western
7	Enclave 1 (Bongo Nangodi Windnaba Tili)	TBD	Inception	Bongo/Nabdam/Bawku West	Upper East	Eastern
8	Enclave 2 (Sakote Dutuku Kusanaba)	TBD	Inception	Bawku West	Upper East	Eastern





4. PARTNERSHIPS

AgNRM established and maintained partnerships with a range of stakeholders, including relevant Ghanaian and US government authorities community groups in target landscapes, as well as private sector enterprises on a wide range of project interventions, including technical support, sharing of information, coordination and planning, and business development.

Government of Ghana

Close collaboration with GoG partners ensured that project interventions were well aligned with government programs and policies. Each quarter, AgNRM and the Wildlife Division (WD) met to agree on joint activities. These meetings allowed the project to deepen collaboration and establish clear lines of communication with the WD. Through these meetings both parties developed and implemented joint action plans for activities of common interest in the EBC and WBC. AgNRM and WD collaboratively implemented action plans on transboundary resource management; worked closely together on mitigation of human-elephant conflicts in the EBC and CREMA formation programs in the EBC.

AgNRM maintained strong collaboration with other relevant GoG partner agencies throughout the project life. The team engaged the Upper East and Upper West Regional Agriculture Development Unit (RADU) of the Ministry of Food and Agriculture (MoFA) each quarter to review and evaluate CSA priority interventions planned for AgNRM sites in the two regions. These agencies applauded the AgNRM community-based extension agent approach and hope to replicate it by using lead community members in a similar way. Furthermore, AgNRM engaged the Upper East Regional Office of the Environmental Protection Agency, the Water Resources Commission, the Forestry Services Division of the FC and the FC's Climate Change Unit (CCU) to identify linkages and synergies between AgNRM's interventions in northern Ghana and evolving GoG policies and programs.

CREMAS

Building on the CREMA concept designed by the Government of Ghana's (GoG) Wildlife Division (WD), AgNRM strengthened participatory, community-based landscape-level natural resource management and development in eight CREMAs in landscapes across northern Ghana. Project activities reinforced governance structures in the existing CREMAs and initiated the CREMA formation process in three new landscapes: Dorimon Paramountcy and two expansive enclaves along the Red Volta in the Eastern Biodiversity Corridor (EBC). The project design was focused on empowering and strengthening CREMAs through an integrated approach, which was also supported through a small grants program.



Private Sector

AgNRM improved the ability of NRP collectors and processors at the CREMA-level to directly connect with reliable markets. NRP collector and producer groups were progressively moving to better engage and trade directly with buyers and to secure financing to grow their NRP enterprises, resulting in increased income levels. AgNRM interventions strengthened community and CREMA-level collectors and producer groups to engage and trade directly with private buyers; increased their attractiveness to financial institutions through group strengthening and management; and increased incomes for NRP collectors/producers through aggregation and storage of product to promote price maximization within the cash constraints that they operate.

The team organized business-to-business negotiations between end market buyers, processors and shea and moringa collectors. Through these meetings, AgNRM and the Global Shea Alliance (GSA) secured buyers for shea collected by AgNRM-supported beneficiaries in five of the targeted CREMAs. During the life of the project, ORGIIS and Naasakle sourced shea nuts in the WBC, while Wilmar and Savanna Fruits Company purchased BVC-based shea kernel collected. AgNRM partnered with the GSA among others, to foster relationships and increase the visibility of shea collector/producer groups with GSA members/buyers.

Bunge Loders Croklaan (BLC) provided additional resources to support the development of shea nurseries in the Builsa Yenning CREMA. This public-private partnership both served the long-term goals of the shea collectors in BY and the addressing supply considerations of BLC through support for development of a CREMA seedling nursery in the Builsa Yenning site at Weisi. The nursery will continue to produce shea seedlings after the project has finished and will receive additional technical support from BLC.

Stakeholder Engagement

Through regular stakeholder consultative meetings, AgNRM ensured strong synergies were maintained between project interventions and activities, plans and policies of GoG partner agencies and enabled the team to avoid duplication of government efforts.

AgNRM expanded stakeholder engagement with GoG partner agencies, maintained strong partnership with GoG agencies (at the regional and district levels) and developed partnerships with complementary USG agencies including the United States Geological Survey (USGS). To address the lack of high-resolution maps (from remote sensing data) and related technical capacity needs within GoG partner agencies, AgNRM collaborated with the United States Geological Survey (USGS) through inter-agency collaboration with USAID/Ghana, to develop and disseminate Land Cover Land Use maps of project areas. The Forestry Commission are now using the maps for managing and monitoring the highly fragile savanna ecosystems of the AgNRM's ZOI. As part of this collaboration, AgNRM and the USGS trained officials of the Resource Management Support Centre, the Center for Remote Sensing and Geographic Information Services, and the Climate Change Unit of the Forestry Commission on mapping and monitoring Land Use, Land Cover, and Land Management Practices. New knowledge from the training and the map resources provided by USGS will advance production and use of GIS tools by partner institutions as related to the mapping and monitoring of landscapes.

AgNRM collaborated with other FtF projects, which resulted in significant benefits for the AgNRM project. For instance, the Resiliency in Northern Ghana (RING) project provided timely and meaningful support as AgNRM introduced the orange-fleshed sweet potato in our targeted CREMAs. USAID's Agricultural Development and Value Chain Enhancement (ADVANCE) project joined forces with AgNRM to organize the first Climate Smart Agriculture Forum and to support AgNRM's efforts to educate farmers about the Fall Army Worm.



5. ACTIVITY AREAS

OUTCOME 1: INCREASED INCOMES FROM NATURAL RESOURCE PRODUCTS

Approach

NRPs hold enormous potential for strengthening resiliency among Northern Ghana's poor households. Yet fragmented and undeveloped markets for shea and other tree crops undermine the ability of collectors, mostly women, to sell at a reasonable profit and of buyers to obtain products in the quantities and quality required to meet market demand. AgNRM's facilitated market systems approach focused on moringa, tamarind, and dawadawa (Sub-Outcome 1.1) in addition to shea (Sub-Outcome 1.2). Many households participated in multiple value chains;

with shea as the primary value chain and moringa a large secondary value chain. Engaging in NRP value chains offers diversified income streams, providing cash for food purchases in lean seasons or when crops fail, thus increasing household resiliency.

AgNRM interventions on NRP value chain development led to significant improvements in the quantity and quality of NRPs produced and processed by beneficiaries; resulting in improvements in livelihoods of individuals, households and communities. Project implementation has led to improved income streams for poor households resulting in proactive and renewed interest in promoting collective management of resources in the CREMAs.

1.1 Natural resource value chains developed

AgNRM interventions strengthened the competitiveness of moringa products in both international and domestic markets and increased tamarind and dawadawa production to meet local demand. Moringa has two primary products, oil and dried leaves, and a wide array of uses for nutritional supplements, traditional medicine, cosmetics, industrial and vegetable oils, plant growth enhancement, and animal feed. Ghanaian tamarind and dawadawa have strong local demand and offer nutritional benefits. Tamarind fruit contains important micronutrients and is used to make cooking pastes, while dawadawa seeds are a popular high-protein West African condiment. The AgNRM approach to strengthening these value chains was to:

1. Conduct sector analyses on NRP value chains;
2. Organize and strengthen producer/collector groups; and,
3. Strengthen market linkages and investment.

Sector analyses were completed in early 2018 and can be found on the Development Experience Clearinghouse^{1,2}. AgNRM organized and strengthened producer/collector groups, connecting those groups to markets as well as organic certification of NRP producers, which resulted in private sector actors at the end market showing commitments in sourcing their supplies from the CREMAs. AgNRM strengthened the productive capacities of actors in the NRP value chains resulting in a competitive value chains. The implementation of moringa, dawadawa and tamarind value chain activities increased production levels, value addition and improved access to market and financial services for the project beneficiaries.

1.1.1 Create greater understanding of the income potential of selected NRPs

AgNRM identified bottlenecks and opportunities to increase product competitiveness and provide baselines from which to measure results of training and value chain facilitation. The analyses were used to

determine interventions to strengthen and improve market systems and explore opportunities to leverage private sector investments. The team surveyed interested small and medium enterprises (SMEs) and matched them with engaged communities where improved natural resource governance and access to land will enhance entrepreneurial opportunities for producer/collector groups. AgNRM showcased the potential of NRPs in selected CREMAs to investors. Various studies conducted on the availability of NRPs in the various CREMAs were presented to stakeholders to generate their interest in doing business in these areas.

AgNRM linked NRP entrepreneurs to processing and packaging input suppliers. This improved entrepreneurs' access to a reliable supply of inputs/ingredients throughout the year for the processing of their products. AgNRM introduced processors to suppliers of packaging materials and processing inputs in Accra for soap, pomade, and ointments. These connections have addressed the challenges of shortage of inputs and positioned them to expand their businesses.

AgNRM created linkages between processors and regulatory authorities. This supported processor groups and individual entrepreneurs to acquire the necessary regulatory approval for expanding their businesses beyond the CREMA. A series of training workshops facilitated by the Food and Drug Authority (FDA) were conducted for NRP processors which has positioned them to expand their business. Similarly, nine NRP based entrepreneurs (producers of tea, cosmetics, and oils) were supported to register with the registrar general department as sole enterprises.

Beekeeping is a major source of income for many families in the CREMAs. AgNRM supported beekeeping as an alternative livelihood strategy, providing over 500 bee hives to farmers in six CREMAs. Prior to the supply of the hives, beneficiaries were trained on setting up the bee hive, hive colonization, apiary management, bee queen breeding/production, harvesting and processing of hive products, honey marketing and the market for bee products. Bee keeping has the added benefits of enhancing ecosystem services, particularly pollination of tree crops including shea, in the catchment areas. Income from honey production has increased incomes and created job opportunities for those engaged in it. AgNRM has linked the Savanna Fruits Company (SFC), a buyer of honey, to producers in the CREMAs.

1.1.2. Organize and strengthen collector/producer groups

AgNRM developed and profiled NRP groups, firms and entrepreneurs. The project team identified and organized collectors, producers and aggregators of the various NRPs into groups to effectively provide capacity building, enhance sharing of information, ease of NRP aggregation and market access facilitation. AgNRM organized a series of capacity building programs which enhanced the readiness of these groups to do business with buyers. By working within groups, NRP producers, mainly women, are now able to easily aggregate their produce for sale at more competitive prices.

AgNRM profiled shea collector groups, shea processing groups,

1 Assessing the Availability of Natural Resource Products in the CREMAs: https://pdf.usaid.gov/pdf_docs/PA00TGBM.pdf; Natural Resource Product Analysis – Shea Roadmap: https://pdf.usaid.gov/pdf_docs/PA00TGBN.pdf; Natural Resource Product Sector Analysis – Moringa, Tamarind, and Dawadawa: https://pdf.usaid.gov/pdf_docs/PA00TGBN.pdf

2 Technoserve made significant technical contributions to AgNRM outcomes 1 and 2 under a subaward which ran between May 2016 – February 2018.



shea aggregation groups, moringa processing groups, dawadawa collector groups, dawadawa processing groups, tamarind collector groups, and tamarind processing groups. Profiling the groups was a prerequisite for tailored business and leadership skills development to help the groups grow their businesses towards generating additional income for members. In total, 238 groups comprising a total 3,929 members in BVC, 42 groups comprising 1,699 individuals were profiled in the WBC and 40 groups comprising of 1,568 individuals in EBC.

Following the profiling of NRP groups, AgNRM rolled out capacity development programs covering several topics including facilitation and leadership training as well as group dynamics and aggregation. Through various interactive sessions, participants were trained on the techniques of decision making using a variety of training methods.

AgNRM also partnered with Africa Lead to organize a training of trainers (ToT) workshop on Champions of Change for leaders of NRP groups in the various CREMAs. Participants from all the eight CREMAs participated and enhanced their facilitation skills.

1.1.3 Strengthen market linkages and investment

Access to finance for NRP groups was a significant focus of the project. The team identified the financial needs of the various NRPs and conducted savings and financial literacy trainings for the NRP groups. 30 entrepreneurs across the 6 CREMAs in WBC and BVC were linked to 3 financial service providers; Buco bank, GN bank and Sinapi Aba Savings and loans.

To build capacities of the actors in NRPs, entrepreneurs in these value chains were profiled, selected and supported to participate in trade fairs and business events to showcase their products in Accra. The events not only linked the entrepreneurs to buyers but also improve their understanding of how the NRP industry is organized in Ghana.

To enhance development of the moringa value chain, the project

signed an MoU with MoringaConnect as a buyer of moringa seed. Following this, farmers were organized, sensitized, trained and provided with planting material (seeds) for production of the crop. AgNRM facilitated purchase agreements between the CREMAs and individual farmers. Through AgNRM interventions, planting of moringa was adopted by farmers. The availability of a guaranteed market has encouraged the farmers to cultivate the crop. Despite being initiated only shortly before the project closed, almost 2,000 farmers enthusiastically planted the moringa seedlings across AgNRM CREMAs. Moringa planting was a popular activity due to the multiple health, food security and income generating opportunities and should be continued with any potential future project interventions of development partners.

Farmers were trained on the agronomy of moringa cultivation including pest and disease management which enabled them to manage their fields well and minimize losses. The project also developed an organic moringa strategy which the CREMAs are incorporating to meet the organic certification requirement. MoringaConnect will continue to collaborate with the farmers on organic certification after the closure of the project.

AgNRM trained producers of tamarind on improved collection and processing methods. The team provided market linkage for producers. Yapco, a local beverage company operating from Bolgatanga sourced its raw materials, including tamarind, from the collectors in WBC and EBC. AgNRM engaged Yapco representatives to discuss deepening of the ongoing collaboration and identify measures to increase the company's uptake of raw materials from the CREMAs.

1.2 Increased income from the shea butter value chain

Shea plays a critical role in the Ghanaian economy and has a variety of uses, yet only a fraction of the West African shea nut production is collected and moved to market. Also, despite a well-developed market for the shea kernel, the market for traditionally produced shea butter, a cocoa butter equivalent, is limited because quality

fails to meet U.S. and European Union (EU) market specifications. To expand shea market linkages, AgNRM conducted activities similar to those under Sub-Outcome 1.1, but with a focus on large, corporate buyers and in partnership with the GSA, whose growing membership reflects a reorientation of the global market toward sustainable sourcing that benefits local market actors.

The shea butter value chain was a significant focus for AgNRM in FY 2018. An assessment of existing shea butter processors was conducted, their capacities and challenges were identified. Trainings were conducted to improve the quality of butter produced and to meet the specification of the market. As a result, the processors were successfully linked to many buyers including ORGIIS, Wilmar, SFC, Hope Givers among others, and concluded sales agreements

AgNRM introduced improved fuel-efficient cook stoves such as EnviroFit and InStove institutional cookstoves to enhance quality of processed NRPs, which reduced fuel wood requirements and overall production time. The adoption of the improved cook stoves was also essential in ensuring consistency in the quality of shea kernel and butter produced in the CREMAs in line with industry standards. In this regard, the cookstoves allowed women to process shea kernels and butter more efficiently and effectively, help to reduce smoke and particulate emissions that negatively affect the quality of the shea butter; and reduce carbon emissions.

1.2.1 Develop a comprehensive roadmap³ for shea sector investments

A detailed shea roadmap was developed and presented to stakeholders in the various CREMAs and at regional level fora involving private sector players, policy makers and consumers. Following this, many private sector stakeholders expressed interest in working in the project CREMAs. The roadmap served as the guide for shea interventions in the subsequent year of the project. The full shea roadmap can be found at the link below.

1.2.2 Maximize market opportunities through private sector and collector/processing groups

The private sector plays a critical role in unlocking the opportunities in the shea sector. AgNRM implemented series of activities in FY18 building on successes and lessons from previous years.

The project facilitated the acquisition of organic certificate on shea for the Zukpiri CREMA, covering 17 communities with over 800 individual collectors. This will enable producers in the CREMA to have access to niche market for shea. AgNRM conducted series of trainings for collectors and CREMA management on organic certification. Internal documentation required for organic certification were put in place. The acquisition of the certificate attracted many interested shea buyers to the CREMA. In FY 2018 the Zukpiri CREMA secured prices of GHS 130 per 85 kg bag of shea with Mother Shea, a shea product company. The organic certification program will be sustained beyond the life of project following the capacity building programs rolled out in FY 2018.



facilitated the acquisition of organic certificate on shea for the Zukpiri CREMA, covering **17 communities** with over **800 individual collectors**

To better understand prevailing market prices for moringa and shea, AgNRM conducted monthly price monitoring in Wa, Tamale, Sandema, and Bolgatanga in FY18. Average prices stayed above GHS 120 against the GHS 90 per 85 kg of shea nuts producers received in 2017. AgNRM provided data on NRP prices at regional markets to the CREMAs, which enabled beneficiaries and CREMA management to negotiate competitive prices for their products. Yields of shea fruits in the FY18 was low and market pricing reflected low supplies of shea kernel, especially as compared to the FY 2017 season.

Through business-to-business (B2B) negotiations between end market buyers and processors and shea collectors, AgNRM and the GSA secured buyers for the shea kernels collected by AgNRM-supported beneficiaries in five of the targeted CREMAs. ORGIIS and Naasakle sourced shea kernel in the WBC, while Wilmar purchased BVC-based shea kernel collected.

1.2.3 Increase the quality and quantity of shea products cultivated & produced

Bunge community shea planting Initiative and Business Development

In collaboration with Bunge, a private shea kernel purchasing and processing company, AgNRM supported the Builsa Yenning CREMA to enhance its stock of shea trees through tree planting. As part of this partnership, CREMA management identified farmers and individuals interested in planting shea trees in their fields. With support from Cocoa Research Institute of Ghana, over 10,000 shea seedlings were planted in the CREMA in the 2018 season alone. The initiative is expected to increase the supplies of shea kernel in the coming years as well as renew the commitments of communities and farmers in protecting the shea resource.

Project Accomplishments and Key Outcomes

A number of key accomplishments were achieved, paving the way for future work in the sector:

Agreement between CREMA members and MoringaConnect.

AgNRM facilitated a series of meetings and negotiations which culminated in the signing of a contract between MoringaConnect and the three CREMAs in the Black Volta Corridor. Meetings held between the buyer and the farmers/CREMAs had high participation and more farmers were interested in enrolling than could be included in the initial phase. The signing of the contract signaled

³ Natural Resource Product Analysis – Shea Roadmap: https://pdf.usaid.gov/pdf_docs/PA00TGBP.pdf

the start of a good business relationship and has energized farmers to produce as well as guarantee the supplies of quality moringa seeds to the company. With Zukpiri and other CREMAs gaining organic certification, the buyer interest and potential price will likely increase.

Key outcome: Planting of over 5,000 moringa seedlings, with high interest on both sides to plant more seedlings.

Shea collectors/processors negotiating trade deals with large shea buyers.

Reflecting the improved collector group organization and function, collector groups from the CREMAs met with large shea buyers to discuss potential terms of sale. With the support of the Global Shea Alliance, a range of buyers negotiated with CREMAs on price, transportation, packaging, quality and other key factors. Prior to AgNRM interventions, CREMA-based shea collectors largely took whatever price was offered to them at the community level, but they are now better organized and knowledgeable about their product and pricing to be able to engage in trade deals for more favorable terms.

Key outcome: 1.7MT of shea sales negotiated with large buyers by CREMA representatives

Formal Business Registration for nine SMEs in the NRP sector.

AgNRM trained and supported SMEs to register their operations with Register General and Food and Drug Authority. The registration is a recognition of a long process to formalize businesses that have been in the informal sector and is a key step that will enable them to expand their business beyond the localities of the CREMAs.

Key outcome: Nine SMEs focused on Natural Resource Products registered with the FDA

Group development strategy and manual developed.

During FY18, AgNRM developed a manual for delivering trainings on group development, enterprise development and aggregation of NRPs. The development of the manual was participatory as many actors in the NRP value chain were involved at various levels. The manual builds on lessons learned in similar contexts and is highly-focused on the unique challenges of the NRP sector in northern Ghana. The manual will serve as a key resource and can be used by other projects focusing on NRP group development⁴.

Key outcome: Completed NRP group development manual

Organic certification achieved in Zukpiri; strategy developed for other CREMAs.

During the AgNRM project, CREMAs explored ideas for different niche markets for their NRPs. In Zukpiri, they chose to pursue organic certification, which AgNRM supported. At the end of FY18, Zukpiri successfully completed an organic certification audit. Given the successes of the project in facilitating organic shea for the Zukpiri CREMA, the project developed a strategy to up-scale beyond shea and the Zukpiri CREMA.

Key outcome: Organic certification achieved in Zukpiri, along with a premium price for organic shea.

NRP entrepreneurs linked to 3 financial service providers.

One of the critical challenges facing the NRP sector is the lack of access to finance. Many NRP collectors/processors have limited financial literacy and work with their own limited savings for liquidity. Over the course of AgNRM, the project worked to strengthen hundreds of Village Savings and Loan Associations with the aim to link them to the formal financial sector. AgNRM supported 30 Entrepreneurs across the 6 CREMAs in WBC and BVC to link to 3 financial service providers. Buco bank, GN bank and Sinapi Aba Savings and Loans. These linkages are an important start to opening financial access for the sector.

Key outcome: 30 NRP entrepreneurs linked to 3 financial service providers.

Key challenges

- The supply of shea is a notable constraint and becoming an increasing concern. Shea trees are cut for competing uses, particularly charcoal. Anecdotal evidence suggests the changing weather patterns in northern Ghana appear to be impacting the flowering and fruiting of shea.
- The lack of warehousing at community and CREMA levels affects the aggregation of NRPs especially shea kernel for sale to structured buyers. The private sector is hesitant to invest in warehouse construction yet expects aggregation at the local level for any increased price to the collector/producer.

Lessons Learned

- Market led facilitation is key for sustainability of project interventions under Outcome 1. A clear testimony of this is the continuation of the market led interventions by the private sector following the early closure of the project. Mother shea is continuing with organic certification program in Zukpiri. MoringaConnect is continuing with moringa program in BVC.
- Organic certification is very important in enabling communities to benefit from the niche market for shea and moringa, but this is only feasible if communities and CREMAs have adequate capacity to manage the certificate requirements.

Recommendations and the Way Forward

- Expand and deepen AgNRM's organic certification initiative for niche markets through collaboration with private sector actors, the CREMAs and the Forestry Commission. The Eco-Cert certification for Zukpiri can serve as a model for similar communities.
- The supply of shea in northern Ghana will continue to decrease as trees continue to be cut for charcoal and changes in weather affect fruiting of shea trees. While planting shea has not been a part of the culture historically, AgNRM's collaboration with Bunge Lodgers Crocklaan, the Cocoa Research Institute of Ghana (CRIG) in the Builsa Yenning CREMA to plant shea provides a workable approach for the restoration of degraded shea parklands in Northern Ghana. We recommend the AgNRM approach for adoption and scale up by future landscape restoration programs in the ZoI.

⁴ Natural Resource Product Sector Analysis – Moringa, Tamarind and Dawadawa. https://pdf.usaid.gov/pdf_docs/PA00TGBN.pdf

OUTCOME 2: IMPROVED FOOD AND NUTRITIONAL SECURITY

Approach

Food and nutritional security are integral to USAID's Global Food Security Strategy. Rural families in AgNRM's targeted CREMAs face multiple challenges in attaining sufficient food security in terms of quantity, nutritional quality, safety, and socio-cultural preferences. Biophysical and climatic challenges to growing food in northern Ghana include erratic rainfall characterized by short, intense periods followed by extended drought; and highly weathered soils with poor structure and low fertility, which leads to diminished yields regardless of investments made to maximize production. Other constraints include degraded land cover, destructive pests such as the fall armyworm and, in limited areas, destruction of crops by wildlife. Most smallholder farmers in AgNRM's Zone of Influence are marginal players in the formal agriculture sector; this is particularly true for women. As such, women have little leverage in agricultural markets, and face an uphill battle to secure access to the fundamental inputs required to increase productivity and strengthen their resilience to environmental shocks.

AgNRM assisted farmers to address these threats through widespread scaling up and support of adoption of climate smart agriculture practices (CSA) that increased both water and plant nutrient-use efficiencies. CSA approaches can offer men and women farmers in Africa substantial benefits in terms of increased productivity and income, better risk management, and improved resilience to climate change. AgNRM CSA interventions are detailed below in table 1.

These activities were deployed at the field, community, landscape and institutional levels and take into consideration the many dimensions of CSA including economic, technical and governance. Further detail on the climate smart agriculture strategy used by the project can be found on the Development Experience Clearing-house⁵.



TABLE 2: CSA INTERVENTIONS TO SUPPORT SMALLHOLDER FARMERS

Challenge	CSA Intervention	Impact	Result
Erratic rainfall	Improved rainfall harvesting (trenching, contour plowing, zai pits)	Reduced run-off and increased absorption of water	Improved productivity and yield
	Increasing soil organic matter	Increased water retention for crop roots	
Weathered, nutrient deficient soils	Integrated Soil Fertility Management (ISFM) – increase organic matter, mineral fertilizer and improved seed varieties	Improved nutrient uptake, reduced fertilizer run-off	Improved productivity and yield, reduced input costs
Failure of annual crop	Diversification and integration of perennial crops, drought tolerant varieties, promotion of NRPs, small animal husbandry and dry season irrigated gardens	Increased and diversified income streams	Reduced vulnerability to climate shocks and extreme weather, improved income

⁵ Climate Smart Agriculture Strategy: <https://dec.usaid.gov/dec/home/Default.aspx>

2.1 Intensified and diversified climate smart technologies for production

As climate change and its associated risks continue to affect northern Ghana, AgNRM progressively introduced farmers to adaptation and mitigation technologies associated with soil, water and pest management to build their food security resilience. Knowledge building approaches designed and implemented included the establishment of farmer-peer-learning demonstration sites in all six CREMAs in the BVC and WBC, respectively, and the two enclaves in the EBC. These sites facilitated learning in appropriate technologies with deliberate incorporation of local farming knowledge systems that had contributed to improved resilience and food availability.

In the learning sites, farmers were introduced to appropriate agricultural practices for adoption. These included drought resistant and early maturing varieties of maize, minimum tillage, cover cropping, best planting and fertilizer application methods. The results from the farmer learning sites showed an impressive yield suggesting that when farmers adopt appropriate technologies in farming they are better placed to increase food availability.

Green and brown field days were organized to promote uptake of the technologies demonstrated in the farmer learning sites. These were major events that showcased the performance of the technologies at the vegetative and the brown stages of the physiological development of the crops in the learning sites. 1,143 men and 441 women beneficiaries participated in the green field days. Agro-input dealers were connected with farmers during the green field days to ensure farmers were independently able to purchase farm inputs such as seeds and fertilizers once they were convinced of the benefits they will derive.

1,355 people (1,189 women and 166 men) participated in brown field days. They also received training in post-harvest management, essentially to reduce losses that typically occur from harvest to storage, including losses in quality, which threatens nutritional value.

Over 2,000 farmers were provided with a weather information service, Iska. This enabled beneficiaries to get weather alerts via their mobile phones. The weather information provided for farmers were specific to their respective localities. This enabled farmers to plan their farm cultivation practices in a timely manner. Time for planting and fertilizer application requires some level of moisture in the soil to drive maximum benefit. The weather alert services provide this opportunity to farmers to be able to plan when to plant and when to apply fertilizer. Call centers were created to allow farmers get weather information in their local languages, if they cannot read the text messages.

A major challenge to dissemination of weather information is the limited mobile network coverage in the rural areas and the lack of mobile phones, especially among women. This in turn limited the rate at which beneficiaries could access the weather information using the mobile phones. The Iska weather service was not compatible with other mobile network operators such as Vodafone, Airtel and Tigo. This further limited the number of beneficiaries who benefited from the services.

To diversify production, AgNRM supported beneficiaries to engage in dry season farming using available water resources in the various communities. Nine demonstration gardens in the six CREMAs were established. This provided opportunities for 426 households to engage in vegetable production for dietary diversity towards improved household nutrition. This diversification provided opportunities for households to balance the production of staples in the rainy season with vegetables in the dry season. The vegetable production plots were intercropped with moringa to further boost nutrition of households.

2.1.2 Promote integrated soil fertility management, agriculture water management, and integrated pest management

The importance of organic matter in the soil to improve soil's water holding capacity is critical. After harvesting there is enough crop residue that can be utilized to enhance the capacity of the soil for the next production season. The availability of combustible material on the soil surface also presents a risk for bush fires. AgNRM supported beneficiaries to create alternative use for crop residue to enhance soil fertility.

AgNRM trained farmers in the use of crop residue to enhance soil fertility through compost preparation. A total of 2,656 farmers (543 men and 2,113 women) participated in the training sessions in 56 communities in all the intervention zones. The surface or aerobic method of compost manufacturing was used to train farmers because of its suitability with beneficiaries especially women. Farmers were trained on how to identify suitable composting materials that are available locally; how to prepare and maintain the compost heaps, test for decomposition and/or microbial activity, and determine compost maturity; as well as the best methods for storing the mature compost.

Training on compost preparation provided opportunities for farmers to use these composts for their farms and vegetable gardens. It also provided cheap alternatives for households to combine inorganic and organic fertilizer for soil fertility management.



Figure 2: Compost Preparation Training

The zai pit technology was introduced to over 2,000 farmers in all intervention zones to produce moringa. The technology proved useful for the rapid growth of moringa with little water use in home gardens and in the open field. The low cost and availability of materials for the technology made adoption among farmers scalable.

305 beneficiaries received training on neem extract preparation as a bio-pesticide for the control of insect pests in farms and home gardens in the BVC. Thresholds for pest were established in some communities which required intervention. As such, farmers were trained on how to prepare and use bio-pesticides for the control of pests that were causing damage to plants in the home gardens.

2.2 Strengthened capacities for modifications to existing livelihoods and improved nutrition

2.2.1 Increase women's ability to save and manage finances

Over the course of the project, AgNRM supported 134 VSLA groups with a membership of 3,070. This enabled beneficiaries to self-manage their finances and invest in productive activities such as crop production and other household needs. The loans largely went into payment for farm related activities such as land preparation, planting, weeding and fertilizer application. The availability of the loans from VSLA ensured that farm practices were done in a timely manner to align with the season. The VSLA became an important mechanism, which increased household access to farm inputs that led to increased production, and subsequent availability of food for the household.

2.2.2. Increased diversity of nutritious plants produced and consumed by households

AgNRM provided training to communities in the preparation of nutrient dense meals for improved household nutrition. Eight different recipes of high nutritional value were developed, and beneficiaries subsequently trained through cooking demonstrations on the preparation and utilization of these recipes. The recipes were made from available local food ingredients commonly found in their gardens and farms, which can easily be harnessed for household nutrition.

The project also trained 80 nutrition champions and their male allies as advocates for nutrition in the various communities. 21 males took up the challenge to be advocates for nutrition and to support women with the needed resources in their respective households to prioritize issues of nutrition among children and women in their communities.

To broaden awareness to drive impact for nutritional activities, AgNRM worked with community health nurses, Women in Agriculture Development (WIAD) unit of MoFA and the school feeding caterers to train beneficiaries on the importance of child and maternal health care and nutrition, with an emphasis on the nutritional benefits of NRPs. A total of 328 participants, of which 17 were men, were trained in the WBC on child care and feeding



Figure 3: Cooking Demonstration on-going in EBC

practices. The training further demonstrated that nutritional needs can be met using available local food groups such as NRPs, which includes moringa, dawadawa, tamarind, and shea, along with local leafy vegetables, soya, and Orange Flesh Sweet Potato (OFSP).

Project Accomplishments and Key Outcomes

Community-level structures and resources accelerate technology uptake:

AgNRM progressively introduced climate smart technologies targeted at increasing the resilience of beneficiaries to appropriately adapt or mitigate changes arising from climate change. Over the project period, a number of gains have been made in addressing the technological needs of farmers by increasing their access and use of appropriate technology. Some of the technologies introduced by AgNRM included: the zai pit technology, minimum tillage, cover cropping, improved seed, live fencing and agroforestry. To increase the sustainability of interventions, AgNRM used community level structures in the delivery of interventions to increase household

resilience. The CREMA structures were a principal part of the sustainability agenda where staff of the CREMA were engaged as field coordinators and Community Base Resource Persons. These persons were adequately equipped with relevant knowledge and skills in agronomic practices. They will continue to deliver extension services to community members after the exit of the project. The CREMA management structures involved in implementation of CSA interventions are an important sustainability mechanism since they will continue to deliver services to communities on CSA.

Key outcome: Community level resources enable a wider reach for impact at lower cost.

Women lead in adopting new technologies and hectares under improved technologies.

It is significant to note that women accounted for the highest number of adoptions in all units of measurement ranging from improved seed, soil and water conservation, cultural practices and climate smart methodologies. Among similar projects, this is an outlier, and should be noted. The success of women adopting new technologies may be due to the following: 1) improving land tenure security for women incentivizes more sustainable practices; 2) AgNRM used Community-Based Resource Persons to help promote new methods and the CBRPs included both men and women, making information more accessible for women that would generally not travel distances for such information; and 3) AgNRM designed the CSA strategy with the feedback of female farmers to ensure the approaches would meet their needs and abilities. .

Key outcome: 2,802 farmers adopted and applied at least one technology introduced by AgNRM. While 3,109 hectares have been cultivated using at least one technology introduced by AgNRM. The majority of both were done by women.

Direct linkages to buyers builds relationships for better inputs.

AgNRM linked communities and beneficiaries with service providers. Agro-input dealers were linked to communities during field days to create market opportunities for these input dealers to provide services to expand their market base to increase the sale of seed, fertilizer and compost to farmers. The CREMA level business fora also provided opportunities to connect communities and CRE-

MA executives directly to service providers in the agro-input market. This provided direct contact between communities and service providers to do business in the absence of AgNRM.

Key outcome: Agro-input dealers and CREMA communities are able to engage in business after the project.

Challenges

- The limited availability of service providers to conduct minimum tillage/conservation agriculture was an obstacle.
- Crop destruction by livestock limited scalability of moringa in open farms as an agro-forestry system.
- Inadequate water availability in the households, and the cost of increasing water availability, limited scalability of household gardens for nutrition.

Lessons Learned

- Beneficiaries are willing to invest in technology if there are proven results of the technology.
- Engaging community structures in development interventions is key for scalability and sustainability. The more accessible the intervention is to community-members, the more adoptable it becomes.

Recommendations and the Way Forward

- Agro-input service providers are a critical entry-point. As practitioners can demonstrate the business case for agro-input service providers, they will independently drive sales and increase farmer access to and use of improved technologies.
- Cost sharing mechanisms with beneficiaries to minimize the fear/risk of adoption or changes in technology are critical for upscaling CSA technologies and should be considered by future programs.
- The approach of using Community-based Resource Persons (CBRPs) was effective in many ways, however, to be most effective, recruitment should prioritize community members with at least basic literacy and numeracy skills. An investment of time and training is required to have CBRPs become strong implementers.

TABLE 3: FY 2018 TECHNOLOGY TYPE APPLICATION - FARMERS

FY 2018 TECHNOLOGY TYPE APPLICATION - HECTARES

Technology Type	Number Applying Improved Technologies			Total Hectares Under Improved Technologies
	Female	Male	Total	
Cultural Practices	1,908	823	2,731	2,423
Crop Genetics (Improved Seed)	1,784	750	2,534	1,147
Soil-related Fertility and Conservation	1,865	905	2,770	3,012
Climate Mitigation / Climate Smart Agriculture	1,582	669	2,251	2,128
At least 1 technology	1,899	901	2,802	3,109



OUTCOME 3: INCREASED ACCESS TO LAND AND NATURAL RESOURCE PRODUCTS

Approach

Access to land and resources is at the root of most conflicts in the North, and insecure tenure rights are the primary constraint to investment in conservation agriculture and natural resource management. The Winrock team worked with local leadership structures and community organizations, including traditional chiefs and earth priests, CREMA organizations, producer groups, VSLAs, and other community associations to ensure broad representation in assessment, planning, and decision-making related to land and resource access. Negotiated agreements harmonized land and resource tenure frameworks and created incentives for cooperation between local customary and district decision-makers.

AgNRM convened multiple stakeholders in each community to introduce the collaborative process for CLARUP, described under Sub-Outcome 3.2. A public awareness campaign using Social and Behavior Change Communications emphasized the importance of women's access and rights to land and natural resources, provided leadership training to male and female champions, and empowered women with the skills to make land-related decisions. The messages highlighted the benefits that accrue when women have stronger land-based decision-making authority.

3.1 Strengthen women's access and rights to land and natural resources

Women's unequal access to, control over, and ownership of land and other assets inhibit their full participation in improving food

security at the household and community level and safeguarding natural resources. AgNRM's approach helped women's groups acquire land under long-term agreements for dry season vegetable gardening, agroforestry, NRP enterprises, and/or livestock/fodder production—not only to improve women's livelihoods and nutrition, but also to demonstrate to the wider community the positive health and economic outcomes for the entire household that result from securing women's access to land and natural resources.

Land Use Rights Formalization (LURF)

The LURF process covered five broad stages: engagement of stakeholders, education and sensitization activities, training and capacity building of community members, land use rights negotiations, agreement signing and documentation.

Engagement of Stakeholders and Education and Sensitization Activities

The team drew on CECOTAPS' networks and knowledge of the region to lead community-level assessments on land and resource tenure security and decision-making using focus groups, community forums, and key stakeholder interviews (with traditional chiefs and women leaders, and men and women of different ages and marital and economic status). The findings informed the project's Gender Integration Plan (GIP). AgNRM convened stakeholder discussions with local leaders to clarify the hierarchy of resource access and use rights, and the gender dimensions of local production systems. The assessment mapped community structures and relationships related to land and resources allocation and access, management and use rights (e.g., who has access and whether access is seasonal or through leasing or other financial transactions). It also outlined rights with respect to tree tenure and NRPs; water access and use for domestic and productive purposes; and competing demands for land or resources. Involving men and boys was critical to advancing women's access to land and preventing backlash. Through CECOTAPS' extensive networks of mediators and trainers, AgNRM identified male champions to advocate on behalf of women and vulnerable groups and disseminate key messages to targeted audiences.



Figure 4. Beneficiaries displaying their land use in Banu (SKGK)

Messages highlighted positive outcomes resulting from women's ability to enhance household food security, nutrition, and income due to increased tenure security.

Trainings and Capacity Building of Community Members

AgNRM facilitated the training of 167 women leaders in Interest Based Negotiations (IBN) Land and Natural Resource Rights to position them well to negotiate for land, and productive resources. The training of the women leaders supported the processes for formalizing land use rights for 687 individuals and groups in the Black Volta and Western Biodiversity Corridor.

Land Use Rights Negotiations

To improve women and vulnerable groups' secured access to land and natural resource products, AgNRM facilitated the negotiations and demarcation of 687 land parcels with a total size of 549 hectares. These negotiations were done in Dorimon, SKGK, Zukpiri, and Builsa-Yening with the support of traditional authorities, CREMA executives and the Community Land Demarcation Volunteers (CL-DVs). For communities new to LURF, they were educated and sensitized on the rationale and the security of tenure the process offers to women and vulnerable groups (widows, settlers, migrants and physically challenged individuals).

Signing and Distribution of Land Use Rights Agreement

AgNRM facilitated the complete signing of 366 land use agreements between lessors and lessees. The land use agreements spelt out the duration of the customary lease, conditions that guide change of status and signatures of lessees, lessors, chiefs and CREMA executives. The chiefs and CREMA executives served as witnesses to the land use rights agreements. The agreement also incorporated pictures of the lessees and lessors to enhance security features of the agreement. The absence of at least one or more actors in the signing of agreements delayed the process.

Key Outcome: 366 completely signed agreements were given to beneficiaries in Banu, Wiesi, Pase, Jambuse and Banu. At the close of the project, there were 320 additional agreements that are partially signed and 271 pending.

The signed land agreements grants customary leasehold to individuals, couples and groups from an average of 10 years to the death of lease. The formalization process has increased women's interest in



Figure 5. COP giving out land use agreements in Banu

cultivating tree crops such as moringa to improve household income and nutrition. Their commitment to tree cultivation is buoyed by the fact that they have secured land and investment. Hitherto, women within the CREMAs had no such opportunity to cultivate tree crops since any attempt to do so was tantamount to claiming ownership of the land.

3.2 – Develop clear land boundaries for project interventions to avoid conflict

Communities were mobilized to prevent protected area degradation and adopt sustainable resource use practices. Through the collaborative Community Land and Resource Use Plans (CLARUP) approach, AgNRM worked with targeted communities to map and demarcate land use zones. Training on boundary determination, demarcation and geo-referencing, built capacity to resolve boundary-related disputes and ensure local ownership of the process. The public awareness campaign emphasized transparency, inclusiveness, and systematic dispute resolution procedures. In CREMAs where land use plans already existed, efforts focused on clarifying boundaries and use zones as needed.

The AgNRM's CLARUP process broadly encompasses the following steps: engagement of stakeholders, community visioning, resource mapping, crafting of management and implementation plans.

Engagement of Stakeholders

AgNRM engaged and sensitized stakeholders drawn from Dorimon and Zukpiri CREMAs on the CLARUP processes. They included traditional leaders (chiefs and tendamba), community members and government sector agencies (District Assemblies). The engagement educated and gathered inputs from the stakeholders on the CLARUP strategy and the roadmap. Furthermore, focus group discussions were held with CREMA executives, women, youth groups and settlers in 30 communities within the Dorimon and Zukpiri CREMA. These engagement and consultations were geared towards galvanizing community support, participation and ownership of the process.

Community Visioning

AgNRM used ecosystem services decision support tools (ESDST) to facilitate the community visioning in the development of the community land use plans. One of the tools used was the Eco Game; an ESDST tool. Before the roll out of the Eco Game, a two-day training

was held for key AgNRM staff with the responsibility of facilitating CLARUP activities.

The Eco Game triggered the selection and adoption of sustainable land use practices that have the potential to enhance ecosystem services and livelihoods opportunities. The game offered communities the opportunity to predict into the future; land use options and their impact on food, water and energy. The Eco Game generated excitement and stimulated experiential learning for community members. It also exposed them to the stark realities of bad land use practices and its aftermath. Therefore, the Eco Game greatly influenced community visioning and resulted in the selection of land use decisions focused on environmental sustainability and enhancement of ecosystem services. A key success of the Eco Game was the resourcefulness of female teams to choose land use practices which provided adequate food, water and energy even in the face of disasters. However, this dexterity was not observed in male teams across CREMA communities.

Participatory Community Resource Mapping and Validation

The community vision was reflected in sketches AgNRM supported communities to draw. The sketches brought to the fore the vision, existing spatial information and proposed land use and changes. It also provided direction for community resource mapping and a bird's eye view of communities' boundaries, settlements and resources. Sub-

sequently, the Community Land Demarcation Volunteers (CLDV) were used to map out land use, existing infrastructure and land uses resources using Geographical Position System (GPS) devices. A few also administered questionnaires on multiple water use system (MUS) in CREMA communities.

Key Outcome: The participatory resource mapping resulted in the generation and validation of resource map for 30 CREMA communities. These maps captured the current and proposed land uses as well as land use changes.

Outcome 3 facilitated the development of management plans which were born out of land use practices communities have decided to adopt. The process was facilitated by the CLARUP management tool which helped in the collection of data on land use management practices as envisioned by community members. The management plan encapsulates actions, by-laws, sanctions and proposed land and water use changes as captured in the participatory resource maps. It also profiles communities; considering community leadership, demographics and CREMA structures. The management plan will be integrated seamlessly into the broader CREMA management plan.

Key Outcome: Communities have up to date, integrated management land use plans that are aligned with community needs and relevant by-laws.

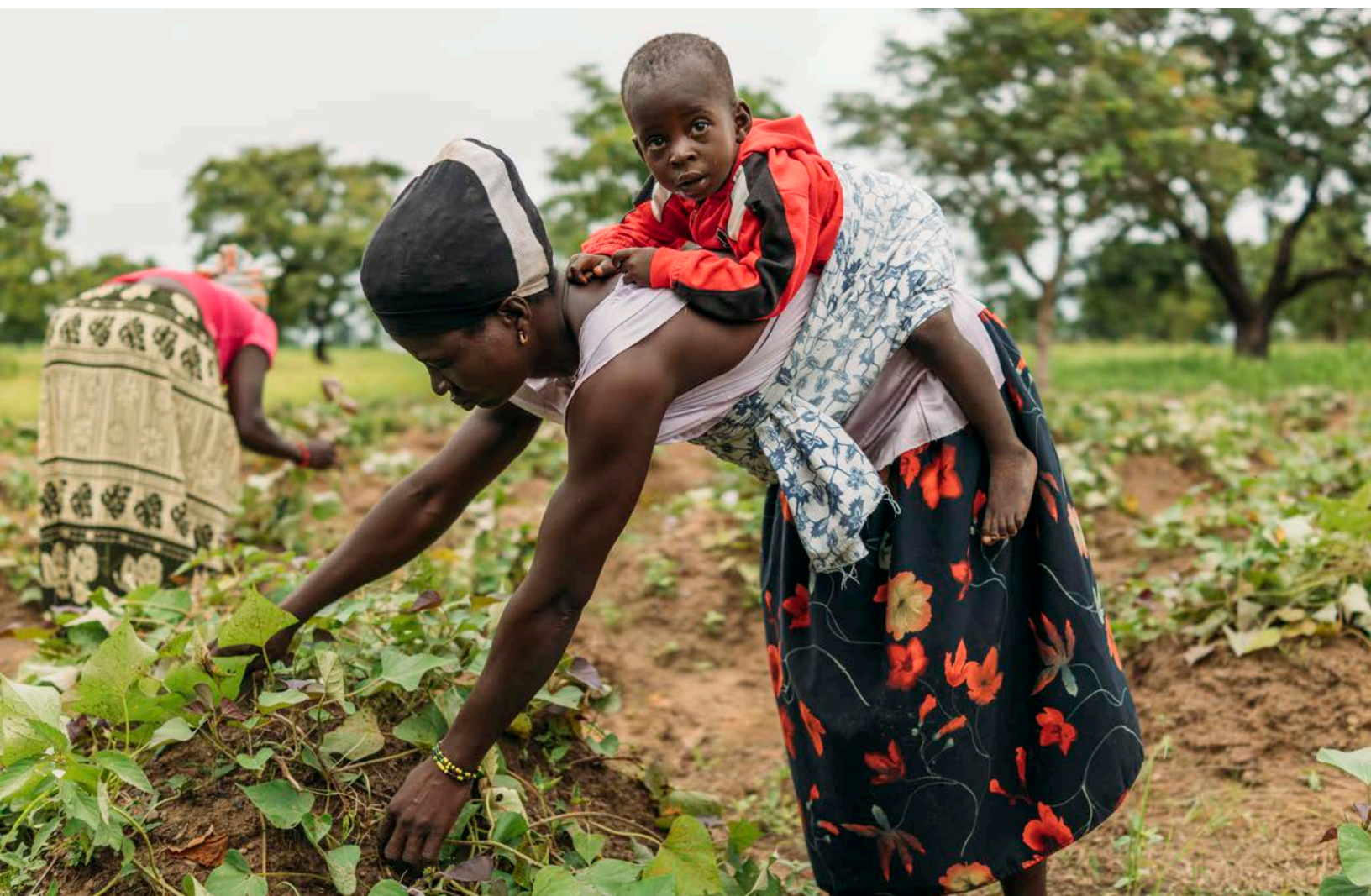




Figure 6-7. Community members playing the Eco Game in Pase to facilitate the development of CLARUP

Lessons Learned

- The Eco Game gave women a voice to contribute effectively on development issues in their communities which was not observed in the LURF process. Women could decide, propose and recommend desired land uses for specific land patches in the community independently and convince community leaders. In the siting of water sources, markets and gardens, the voice of women overshadowed the men and the men would compromise.
- Community entry and sensitization was critical. Land rights can be a flashpoint for conflict and so community members were hesitant at first to engage on the issue. However, with conflict-sensitive approaches, people began to participate and quickly saw the merit in the activity. Community members eventually became champions and advocates for the activity.
- The team has observed that extensive investigation, ground truthing and due diligence are critical aspects of the LURF process.
- At the beginning of the process, few men were interested in land agreements. However, after engaging with their wives in discussions on land and ceding part of their land to their wives and other women, men became more interested in documenting their land holding rights as well.
- The public signing and releasing of signed land use agreements

to stakeholders in the LURF process is key to building trust and preventing conflicts.

- The building and strengthening of local CREMA structures to smartly administer land tenure security is key to the scale-up and sustainability of tenure security reforms instituted by the AgNRM project. This has yielded fruits in land use rights formalization and support for women to invest in medium to long term landscape activities like moringa farming.

Recommendations and the Way Forward

- As CREMA managers continue their process of development after AgNRM, there are a number of resources used on AgNRM that will be useful to CREMA managers and available through CECOTAPS, including: A number of critical dispute resolution resource materials that will be useful to CREMA authorities to guide their dispute resolution processes; a training of trainers to nurture these models in land tenure security and dispute resolution processes; a dispute resolution resource for quick advice on tenure security.
- Land rights registration is a slow process, but when well executed, local authorities and communities are bought in to the process. Future activities should ensure that prior extensive consultation as well as sensitization is a part of any registration effort.



Figure 7-8. Validating CLARUP map in Mantari and Meguo all within the Zukpiri CREMA Management Plan

OUTCOME 4: STRENGTHENED ENVIRONMENTAL STEWARDSHIP

Approach

Northern Ghana's fragmented wooded savanna shows signs of vulnerability to global climate change. The AgNRM team's in-depth expertise with CBNRM, forest co-management, land and resource tenure, ecosystem services, and forest carbon measurement in West African Sahelian zones guided support for the GoG CREMA model to improve landscape-level protected area management and biodiversity conservation while catalyzing sustainable livelihoods focused on NRP collection and processing. AgNRM used training and practical preparedness planning to strengthen local capacity to mitigate the impacts of climate change and increase household, community, and ecosystem resilience.

4.1 – Improved management and conservation of selected watersheds and biodiversity corridors in the Volta Basin

Drawing on pioneering CREMA-related experience, AgNRM harnessed the GoG CREMA mechanism to implement a participatory, community-based approach to landscape-level watershed man-

agement and development targets in eight CREMAs. This section provides a summary of outcome 4 activities covering the Wechiau Community Hippo Sanctuary (WCHS), Dorimon Paramountcy CREMA (DPC) and Zukpiri CREMA in the Black Volta Corridor (BVC), as well as the Sanyiga-Kasena-Gavara-Kara (SKGK), Builsa Yenning (B-Y) and Moagduri-Wuntanluri-Kuwomsaasi (MWK) CREMAs in the Western Biodiversity Corridor (WBC). The report also covers AgNRM's enclave 1 and 2 CREMA sites in the Eastern Biodiversity Corridor (EBC).

The AgNRM project worked with CREMAs in every stage of development: from well-established CREMAs such as WCHS to areas interested in becoming CREMAs in the EBC. The project worked to support communities through the various steps to become formalized CREMAs with the Wildlife Division and capable of being managed without external donor support. The development challenges in each CREMA vary and so did the support they received from the AgNRM project. For more established CREMAs, a lot of guidance was focused on governance structures: making them more sustainable and representative of the whole community. In more nascent CREMA areas, the project focused on sensitizing communities to the idea of becoming a CREMA and engaging with local authorities to support the process. With any such community-based natural resource management initiative, the development of these structures takes time and involves a great deal of capacity building. AgNRM made significant strides to create and/or strengthen the eight CREMAs under the project, however the early closure does mean there is work yet to be done.





Strengthening of CREMA management capacities: AgNRM supported CREMA development through the following steps:

i. Community sensitization and engagement with local leaders.

From the beginning of AgNRM, the team worked very closely at the community level to understand the interests and capacity of the community to support CREMA development. Some areas were eager, where some areas had reservations in the beginning. Through extensive discussions, meetings and consultations with traditional and GoG authorities, decision-makers and communities alike bought into the process. In the EBC, AgNRM established the foundation for two new CREMAs where none had previously existed and substantial effort went into raising awareness in the community for the CREMA process. Communities in the WBC and BVC were more familiar with the concept and understood the benefits more readily.

ii. CREMA polygon agreements and zoning. AgNRM staff worked with CREMAs to understand how they use their land and what areas are key for conservation. The work conducted under outcome 3 to support participatory land use planning was a key ingredient in these discussions. In some cases, polygons had already been established and needed to be reviewed, whereas other CREMAs had not yet established their polygons or determined their core conservation zones. At the conclusion of the project, AgNRM had supported local community land use planning teams of the Dorimon Paramountcy CREMA to record GPS coordinates of agreed areas designated as Core Zone of the CREMA. Demarcation of the CREMA boundaries will ensure that high conservation areas and other major land uses in the CREMA are well defined and mapped. The output from this process feeds into the CREMA formalization and devolution process. In the WBC, AgNRM in consultation with WD, FSD and the communities mapped the core and external boundaries of the SKGK and Builsa Yenning CREMAs. In the EBC, AgNRM working through the WD had assessed the vegetation to identify potential core areas of the EBC CREMAs.

iii. Develop biological monitoring systems. AgNRM worked with each CREMA to develop biomonitoring protocols and trained CREMAs on how to conduct biomonitoring along key transects. This enabled communities to create datasets on their ecosystems for monitoring purposes, and also to showcase conservation results to external parties. For a complete list of species recorded during biomonitoring activities, please refer to Annex 6.

The Biodiversity monitoring program in the BVC is well advanced than those of the EBC and WBC. In the Black Volta Corridor, Ag-NRM supported biomonitoring teams for the WCHS, Dorimon Paramountcy and Zukpiri CREMAs to successfully conduct dry season and wet season bird surveys, as well as dry season hippo monitoring exercise for the three CREMAs. Sixteen bird transects were surveyed in the 2018 dry season with a total of 153 species of birds recorded.

The 2018 survey reveals a total of 36 species of birds not recorded previously across the three BVC CREMAs (i.e. 25 species were observed during dry season and 11 in the wet season). The total number of bird species recorded to date across the three CREMAs has increased from 181 in 2017 to 218 (2018). Along bird transects, the biomonitoring teams also recorded the presence of other wildlife. Mona monkeys (*Cercopithecus mona*), vervet monkeys (*Chlorocebus pygerythrus*), hares and rabbits (lagomorphs of the family Leporidae) and species of snakes (family Colubridae) were physically observed. Evidence of the feeding activities and burrows of giant rats and tree and ground squirrels were observed, mostly in patches of unburnt vegetation. Prints and fecal remains suspected to be that of medium to large mammals including different species of duikers were also observed mostly in swampy areas and gallery forests.

The team surveyed globally vulnerable hippo across the 3 BVC CREMAs. Altogether, the teams counted 56 hippos along the stretch of the river covering the three BVC CREMAs. Trends from this monitoring shows that this population is likely to be stable, and

or increasing. Of the 56 hippos the team counted, 31 were adults, 11 were juveniles, and 14 were of uncertain age. The dry season monitoring also resulted in the highest number of sightings of hippos in the Zukpiri CREMA (17 individuals, including 6 adults and 11 of uncertain age). Unfortunately, hippo monitoring could not be repeated for the wet season monitoring session due to the early closure of the AgNRM project. Hippos are a keystone mammal species of the Black Volta River ecosystem whose numbers are declining across Ghana due to hunting, construction of dams, and mineral extraction in river beds, amongst other threats. The hippos of the Black Volta River likely represent the last viable population of hippopotamus outside of a protected area in the country and are the only known population under community-based protection in West Africa.

Habitat assessments along the riverine belt indicated a strong association between abundance of hippos and condition of the riparian cover. Since the beginning of the corridor's biomonitoring activities, neither the presence or activities of hippos have been recorded in sections of the river with intensive river bank and riverine zone cultivation. Consequently, in the Dorimon Paramountcy CREMA therefore, none of the hippos recorded from the 2018 dry season surveys, or those from earlier surveys, were sighted along the Chitanga-Buka transects as dry season cultivation in these communities is quite pronounced. Nonetheless, the consistent increase and expanding range of the hippo population north of the Wechiau and Dorimon CREMAs into Zukpiri CREMA and beyond is an indication of a growing population and a gradual reduction in habitat degradation along the riverbank in some places.

In the WBC, AgNRM collaborated with WD to develop a road-map for implementation of a biodiversity monitoring program within the core zones of the SKGK, B-Y and MWK CREMAs. The initial phase includes consultation with the CECs of the CREMAs, development of a biodiversity data storage and capturing system, training of CREMA level multi-taxa biodiversity monitoring team as well as the development of a permanent transects within each CREMA.

Key Outcome: Communities are equipped to identify and monitor biodiversity in their areas against baseline data. Information gathered will be crucially important to inform long-term biodiversity conservation efforts, of endangered water birds and hippos in particular.

Support for mitigating Human-Elephant Conflicts in the EBC: Elephant crop raiding in the EBC has a direct impact on food security in affected households and may serve as a pretext for poaching of elephants by hunters from outside the area in collaboration with affected farmers. In view of our shared interest and concern for the protection of elephants and for ensuring food security in the EBC, the AgNRM and the WD collaborated to address elephant crop raiding issues in the EBC during harvest seasons. AgNRM together with the Bawku West and Binduri District Assemblies supported the operations of the Elephant Control Team (ECT) in the EBC. ECT helped farmers to ward off elephants from their agricultural fields as well as sensitized them on local elephant crop mitigation strategies. The team also collected data on elephant crop raiding from 78 farmers spread across the EBC. Furthermore, AgNRM supported a WD-led Stakeholders Forum to

discuss the activities of elephants in the EBC. This forum presented the opportunities for chiefs from affected communities to discuss their concerns regarding elephant activities in the EBC. AgNRM has developed a map to help stakeholders understand elephant movement, and the extent and magnitude of elephant crop raiding in the EBC. The WD and AgNRM outlined planned activities to mitigate human-elephant conflict in the corridor and urged the chiefs to support them in the implementation of the activities. A resolution was signed by the chiefs to protect elephants in the area and collaborate with WD to arrest poachers of elephants in the EBC.

iv. Development of CREMA and Formation of CREMA Governance Structures: The Wechiau Community Hippo Sanctuary (WCHS) had only two-members for each of the 20 Community Resource Management Committees (CRMCs) of the CREMA. This was deemed inadequate. At the end of FY 2017, the CREMA executives solicited AgNRM's support to reconstitute CRMCs of the CREMA to allow greater representation from community members. AgNRM therefore supported the WCHS to expand membership of the CRMCs to a minimum of 5 community representative and a maximum of 11. Enhanced representation of community members on the CRMCs will enable CREMA management committees to better address infractions of CREMA by-laws and strengthen communication with the local population.

In the EBC, AgNRM teams working together with trained community representatives conducted sensitization programs on the CREMA concept in 73 communities within Bongo, Nandogi, Tili and Widnaba (Enclave 1) as well as in Sakote, Datuku, Kusanaba, Zongoiri chiefdoms (Enclave 2) of the EBC. AgNRM's approach



Figures 9-10. Community-based biodiversity monitoring

of deploying a joint team of trained community representatives and staff of the Wildlife Division (WD) and Forest Services Division (FSD) for the CREMA sensitization program presents an innovative way of scaling up implementation of project activities across multiple communities within culturally diverse project landscapes. It promotes early community acceptance as well as builds the capacity of community members. Mr. John Naada, Northern Zonal Manager of the WD indicated that WD will document and adopt this approach during a review of the WD's CREMA training manual. AgNRM supported communities in enclaves 1 and 2 to constitute interim CRMCs. Following formation of the CRMCs, the team supported the enclave 1 site to elect representatives for the CREMA Executive Committee. AgNRM staff trained members of the interim CRMCs and CEC on the CREMA concept and the processes involved in establishing and running a CREMA.

v. Drafting and Revision of CREMA Constitutions and by-laws:

By-law development is critical to enabling effective management of CREMA resources, as it gives clarity on which human activities are prohibited in the CREMA. It also aligns locally appropriate penalties which strengthen both deterrence and enforcement. Over the course of the AgNRM project, staff worked with several CREMAs to either draft or revise their CREMA constitutions and bylaws.

AgNRM supported the **Dorimon Paramountcy CREMA** to complete final steps in developing a constitution for the CREMA. The CREMA management committee formally submitted copies of the constitution to the Wildlife Division in line with the Forestry Commission requirements. Sharing the CREMA constitution with the Wildlife Division is a pre-requisite for a Certificate of Devolution of Management Authority to the CREMA by the Government of Ghana. By-laws covering six focal areas were accepted. These by-laws relate to control and prevention of vegetation clearing, control and prevention of bushfires, control and prevention of livestock herding, control and prevention of fishing, control and prevention of oyster collection, and occupation of the core zone and hunting. Each by-law was discussed in detail and framed to the understanding of the CEC and community representative, while ensuring that it did not compromise on the integrity of the environment or its resources. The document has been presented to Wa West District Assembly for ratification.

The **WCHS CREMA** adopted a revised constitution in early 2018. The patrons/chiefs, management board, and representatives from the twelve communities fringing the Wechiau CREMA's core zone, validated and accepted revised by-laws that were facilitated by AgNRM. In addition to by-law revision, some of sanctions and penalties attached to the by-laws were adjusted. The validated revised by-laws were submitted to the District Assembly for ratification and incorporation into the Assembly's by-laws. AgNRM supported the CREMA to submit copies of the revised constitution to the Wildlife Division.

AgNRM developed and initiated implementation of a roadmap to support communities in enclave 1 of the **EBC** in developing a CREMA constitution. AgNRM's approach ensures communities, traditional authorities and local government authorities are actively involved in the constitution development process. The project team deployed community mobilizers to lead community engagement for the CREMA constitution. AgNRM commenced the process

by working with key stakeholders to constitute a local constitution Development Assembly (CDA) with membership from iCRMCs, WD FSD, District Assembly and representatives of the traditional authorities.

AgNRM also conducted an **Institutional Capacity Assessment** of the Black Volta and Western Biodiversity Corridor CREMAs to identify institutional capacity needs that will promote their effective functioning. Some of the areas covered under the assessment included CEC understanding of the CREMA concept, the governance structure and function, relationship with key stakeholders, financial management and project management skills. The assessment showed different capacity needs of the various CECs. AgNRM has developed a summary report on the consolidated responses, recommended institutional capacity areas and draft outline of the detailed institutional capacity modules for each of the CREMAs. These documents have been shared with key stakeholders include the WD and NCRC for review and follow up. A summary is also available in Annex 2.

4.2 Ecosystem Services Strengthened

Significant work was done to quantify and communicate the value of ecosystem services in Northern Ghana over the course of AgNRM. Through stakeholder consultations, extensive data collection, scientific and economic analyses, and careful consideration of CREMA needs, a series of products were developed with lasting value both to the targeted communities as well as the development and scientific communities.

Work began in 2016 with an initial stakeholder assessment to inform the development of analyses of ecosystem services and products that would meet local needs. An Ecosystem Services in Northern Ghana Background Report was produced that provided an initial analysis of how AgNRM would support the development of ecosystem valuation for the Upper West Region, Northern Region, and Upper East Region and to integrate their intrinsic values into daily natural resource management. This involved a preliminary spatial analysis using global data sets (e.g., tree cover and forest loss, elevation, protected areas, burned area and rainfall; see figure 11) to generate an evaluation of ecosystem services in the project areas and the likely beneficiaries of these. This initial analysis assisted in framing future work and identified data needs to refine the analysis to better reflect the local context, such as records from rainfall and stream gauges in northern Ghana, data on timber volumes logged, volume of bushmeat sold, habitat studies for key species and tourism statistics from protected areas.

This report also offered context for the ecosystem valuation stakeholder consultation workshop and subsequent stakeholder consultations. It identified stakeholders and experts that could support the consultation process for identifying the specific ecosystem services that would be evaluated and communicated through AgNRM and advise the ecosystem valuation study to ensure that it responds to the realities on the ground. Identified stakeholders included the Forestry Commission, Environmental Protection Agency, the Water Resources Commission, the Wildlife Division, the Volta River Authority, the Ghana Water Company, representatives from Mole National Park, the Ministry of Food and Agriculture (MoFA), Dis-

trict Assemblies in the CREMA areas, as well as CREMA representatives.

The work undertaken in 2016 laid the groundwork for the full [Northern Ghana Land Use Ecosystem Service and Economic Valuation Study](#)⁶ (herein referred to as ‘the ES Study’) completed in 2017, as well as the series of accompanying products developed to convey the results of the studies to CREMAs. This study provided a scientifically credible and locally relevant assessment of the ecosystem services and economic value provided by different land uses, and transitions between them, and informed CREMAs and land planners to better understand the tradeoffs between these land uses as they make decisions.

Work on this study began with a stakeholder workshop in early 2017 in Tamale that presented the findings of the ecosystem services background paper and collected input from key stakeholders on the most relevant ecosystem services in Northern Ghana. The workshop brought together representatives from key government institutions as well as experts from local universities and representatives from the six target CREMAs.

A scientific analysis was then carried out to quantify the key ecosystem services offered by common land uses (figure 12) and those gained or lost from land use transitions in the region.

The ecosystem service assessment was conducted through a range of quantitative and qualitative assessments that combined internationally accepted scientific methods and approaches with local data and expertise (see figure 13).

An economic analysis was also undertaken to quantify the value of different land uses and the financial impact of land use transitions.

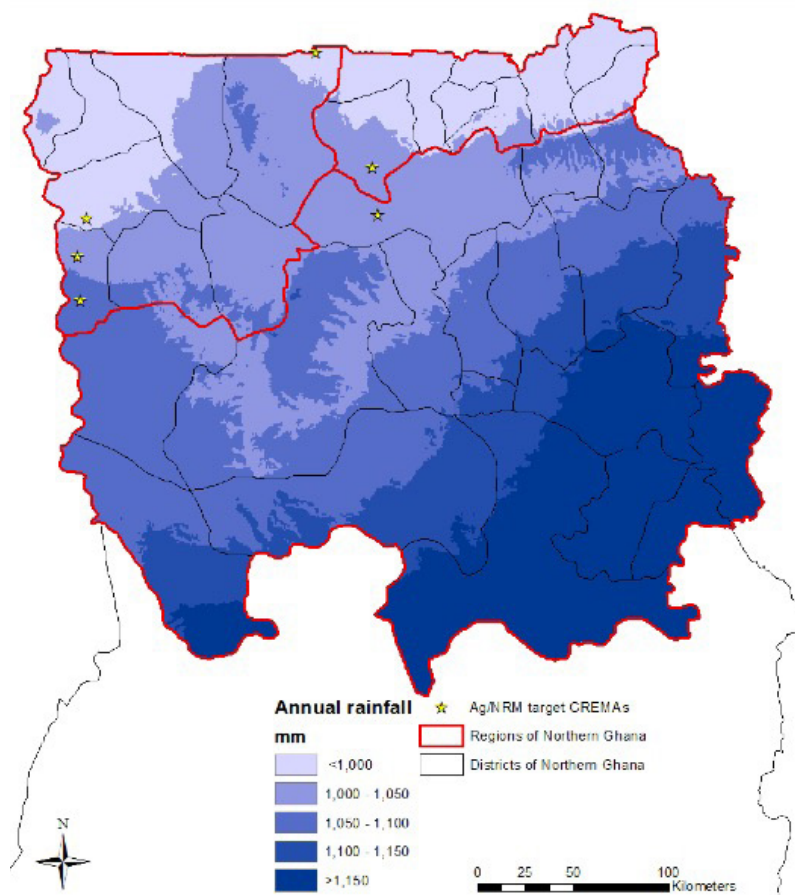


Figure 11. Annual rainfall distribution in northern Ghana (taken from *Ecosystem Services in Northern Ghana Background Report*)

6 Can also be found on the DEC here: https://pdf.usaid.gov/pdf_docs/PA00TGGBK.pdf

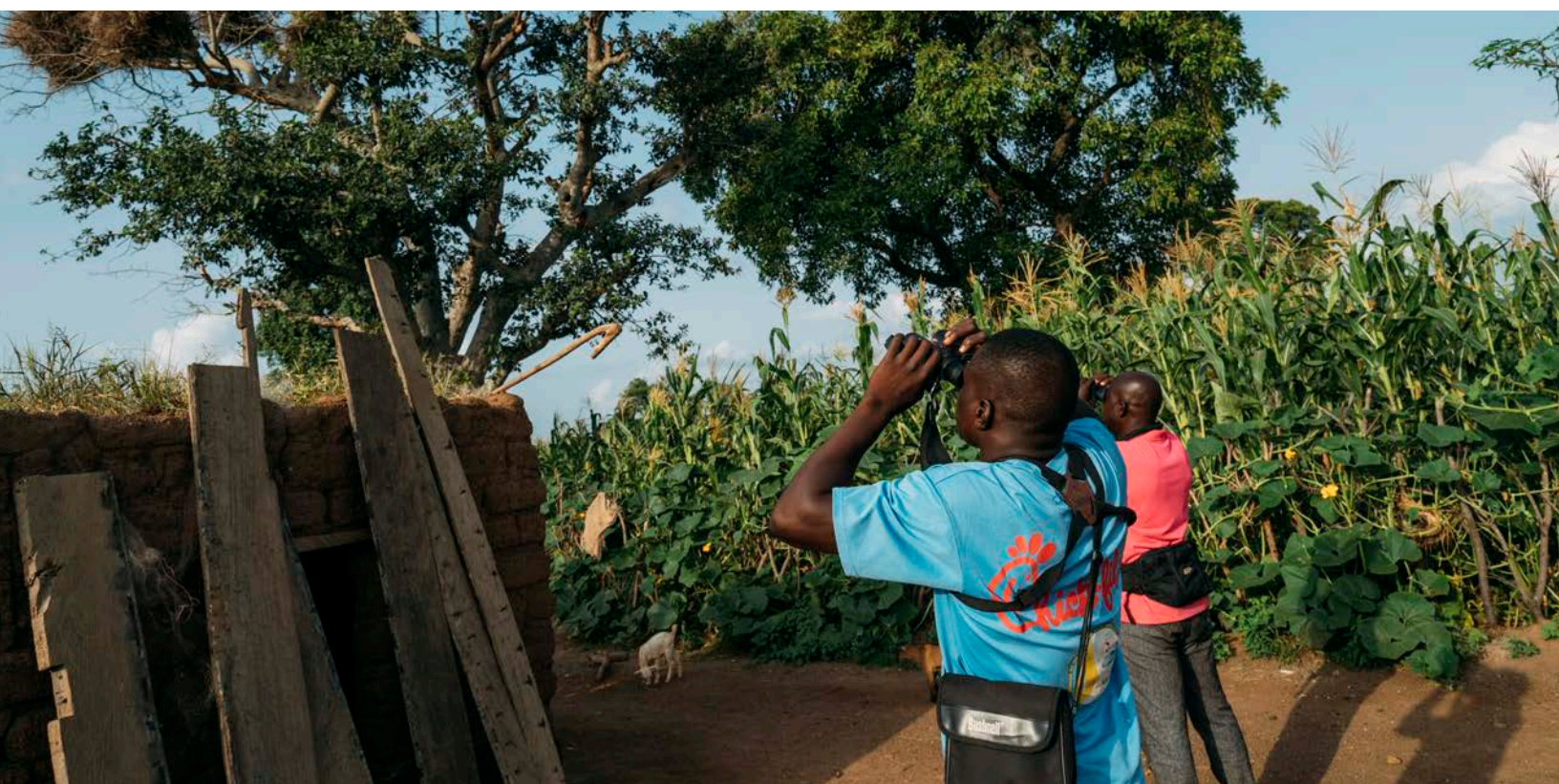


FIGURE 12. LAND USES INCLUDED IN ES STUDY

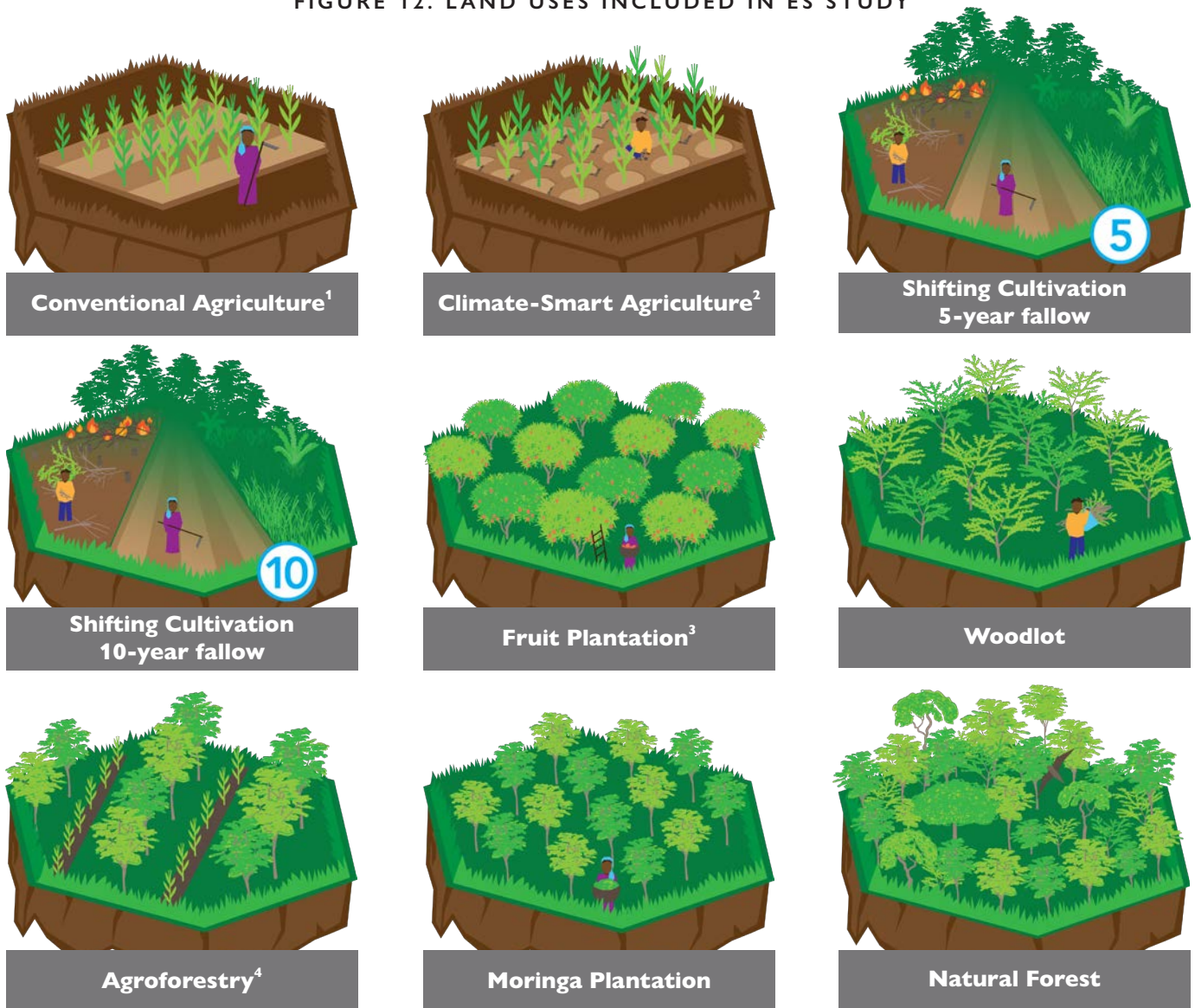
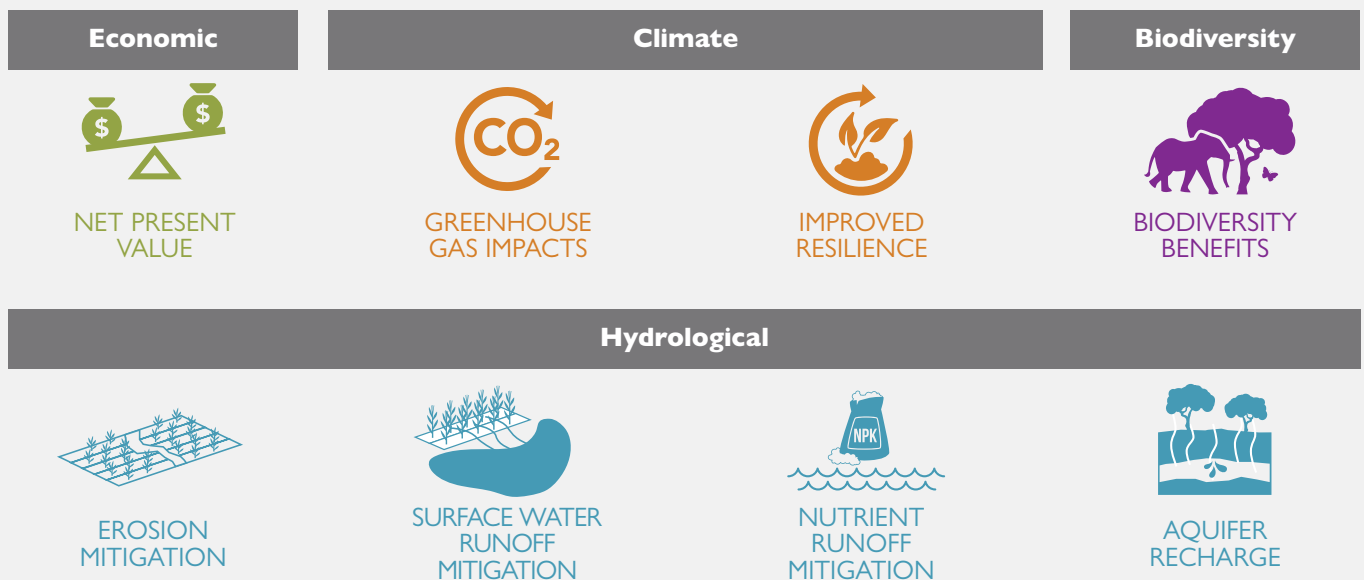


FIGURE 13. ANALYSIS CONDUCTED TO ASSESS THE VALUE OF ECONOMIC AND ECOSYSTEM SERVICES IN THE ES STUDY



The result was an estimation of the net present value (NPV) – the revenue from each land use minus the costs, providing a holistic assessment of the net income that land use would provide. Changes in land value (NPV) from converting between land uses were also estimated, and included land clearing costs (e.g., stump removal) as well as any benefits that arise from land clearing, such as selling fuelwood.

Overall, results of the study underscored the environmental and economic benefits of climate smart agricultural practices which have significant positive impacts on erosion and aquifer recharge as well as economic gains for mulching and manure application. When compared to traditional, ‘conventional’ agricultural practices, the capacity of CSA to not only improve ecosystem services, but also to better withstand the shocks and stresses of climate change such as drought and rain variability, makes a compelling argument for the integration of CSA practices.

Similarly, in comparison to conventional agriculture, the tree crops assessed also represent a significant improvement in the provision of ecosystem services. High establishment, input, and labor costs associated with most of the tree crops make the economic argument less strong, yet their more climate resilient profile overall and capacity to improve hydrological ecosystem services should not be overlooked. The analysis also revealed the high value of natural forests, both economically and for the provision of essential ecosystem services. This land use offered the highest values for most of the ecosystem services, underlining the importance of maintaining these ecosystems. The fuelwood they provide, as well as revenue from the collection of forest products such as shea nuts demonstrates the true economic value of this commonly undervalued land use.

In presenting the results of the analysis, the ES Study heavily integrated graphic design elements to communicate outcomes in a highly accessible and intuitive way (see figures 12, 13 and 14) to clearly convey findings to non-expert or scientific audiences. A series of accompanying communications products were developed in 2017 and 2018 which translated outcomes to CREMA audiences in a meaningful way. These are outlined below:

The Land Use Impact Planning Flip Charts for Northern Ghana.

A laminated ‘flip chart’ product (figure 14) was created that offers a graphic representation of the impact of transitions between land uses in Northern Ghana. Each page in the flip chart conveys the impacts of a specific transition (e.g., erosion, run off, infiltration, GHG, biodiversity, adaptation capacity, net present value) between the land uses examined in the ES Study. This tool helped AgNRM staff working on CREMA land use planning and also functioned as a teaching tool to elaborate discussions during ECO Game: Northern Ghana game playing sessions.

The Eco Game: Northern Ghana.

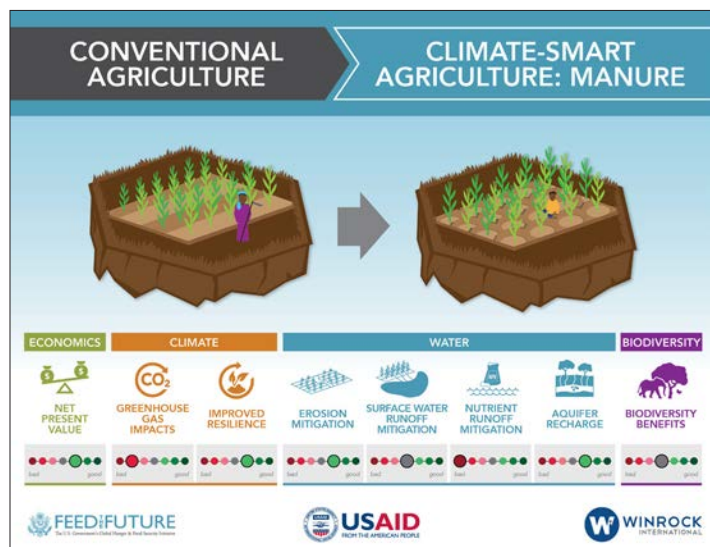
Building on the results of the ES Study, this game translates the results of the analysis into an interactive and engaging game that educates players about the different impacts land management decisions can have on water, greenhouse gases, income, and the long-term potential for communities to thrive.

Designed to be played as individual players or in teams, players select from a set of land uses, each conveying specific sets of resources and resilience. Over several rounds, players must survive natural disasters and other introduced events while maintaining enough resources supplied by the land use choices to meet household needs. Through game play, communities learn about building resilience through land decisions and broaden their understanding of the importance of sustaining ecosystem services.

Players (or teams) select a set of land uses and over the course of four rounds (each round representing one decade) must balance community needs with the resources the land uses provide or require. During each round, players may switch land uses and draw chance cards that introduce circumstances specific to northern Ghana that have positive or impacts and withstand natural disasters.

Game creators engaged the same graphic designer as the ES Study to produce game props and materials, working to ensure a product

FIGURE 14. EXAMPLE OF LAND USE IMPACT PLANNING FLIP CHART (FRONT ON THE LEFT, BACK ON THE RIGHT)



SUMMARY:

Adopting a ‘climate-smart’ agricultural practice where instead of synthetic fertilizers, manure is applied to improve soil health and moisture. Impacts of this transition are mixed – increased yields result in a slight improvement in economic outcomes, but addition of manure to soil leads to emissions and increased risk for nutrient runoff.

ECONOMIC IMPACTS:

Slightly improved economic outcomes over time due to higher yields.

CLIMATE IMPACTS:

Addition of organic matter (fertilizer) to soil will lead to increased greenhouse gas emissions, but increased yields and improved soil moisture enhances resilience.

SOIL AND WATER IMPACTS:

Increased soil health and moisture lowers rates of erosion and increases aquifer recharge, but increased nutrients in soil result in a significant increase in potential for nutrient runoff.

BIODIVERSITY IMPACTS:

No positive or negative impacts assumed.



Figure 15. Eco Game, Northern Ghana Piloting February 2018

that was clear and durable for CREMA use. To further enhance player engagement and learning, game creators engaged heavily with local staff to ensure game events and circumstances effectively reflect the Northern Ghana socioeconomic and biophysical context.

AgNRM staff were trained to be moderators/facilitators for the Eco Game: Northern Ghana and to effectively discuss the ecosystem services associated with land uses in Northern Ghana to reinforce the overarching concepts. Through the training, valuable feedback was also collected from AgNRM staff on how to improve the game and make it more effective for targeted CREMAs. Once the game was finalized and piloted, the overwhelming result was an enthusiastic and positive response to the game, and after playing, participants were able to demonstrate a genuine understanding of the concepts the game presents including balancing economic value of land uses with needed ecosystem services and building resilience against natural disasters. This piloting and training effort was also captured in a video accessible [here](#).

Major Accomplishments and Key Outcomes

Introduction of new approaches in CREMA development.

The AgNRM project has introduced the concept of training and deploying community representatives and local experts within beneficiary communities for implementation of CREMA development activities. The locally trained community representatives called the (Community Based Resources Persons and Field Coordinators) have contributed significantly to scaling up implementation of interventions across multicultural diverse communities in the corridors. The AgNRM team also trained and deployed local experts to conduct sensitization programs on CREMA development in the communities. Overall, the use of the CBRPs and local expert ensure community acceptance of the project and promoted quicker cross learning among participants. We recommend that future projects working in the CREMAs should engage these CBRP and FCs together with the CECs of the CREMAs

Development of a community-led biomonitoring program:

AgNRM has developed a Community-led biomonitoring system for the BVC CREMAs. The project established joint bio-monitoring teams which conduct systematic surveys across CREMA in the landscape. This has resulted in the emergence of credible population trends for birds and hippos from consistent field data collection. Local biodiversity monitoring teams in the BVC are now able to successfully conduct synchronized hippo population survey of the Black Volta river within the 3 CREMAs. We recommend the establishment of such programs in the WBC and EBC. Patrolling trainings should also be encouraged.

Strengthening of CREMA governance structures:

To move the CREMA beyond individual voluntary efforts and to function as an institution, AgNRM conducted a CREMA institutional Capacity Assessment in six CREMAs in the BVC and WBC. The assessment highlighted focal areas that must be developed to ensure the efficient functioning of the CREMAs. A summary of competence areas with requisite trainings have been developed. We recommend implementation of programs developed in the report.

Habitat Connectivity and mobilization for CREMA development:

The viability of wildlife populations is linked to presence of contiguous habitats. Elephants have large home ranges and require adequately protected areas, or corridors, to complete seasonal migrations. Elephants also carry out other important ecological functions and are often referred to as “forest gardeners” or ecosystem engineers” due to their role in maintaining wildlife trails, salt licks, watering holes and dispersing seeds of plants and trees. AgNRM worked with the chiefs and communities in the BVC to develop the Dorimon Paramountcy CREMA to link the WCHS and the Zukpiri CREMA. This has led to the protection and management of a large continuous area of forest within the BVC corridor. Overall success and sustainability of the BVC CREMAs is now more likely, with comprehensive corridor management without geographical gaps.

Initiated development of two CREMAs in the EBC.

Using trained community representatives and local experts, AgNRM created buy-in for the establishment of new CREMAs.



Formal Letter of Intent (LoI) have been submitted by traditional authorities in the EBC, communicating their willingness to establish a CREMA within their jurisdiction. AgNRM has facilitated the formation of interim CECs and CRMCs in two enclaves of the EBC. There has also been increased awareness of the CREMA concept among key stakeholders: District Assembly, MOFA, Community members, traditional authorities and opinion leaders in the EBC. We recommend continuation of the program aimed at CREMA development at the EBC.

Lessons Learned:

The overarching takeaway from the work completed under 4.2 was the value that a stakeholder-centric and evidence-based product offers to beneficiaries. By translating the results from a robust scientific analysis into an interactive game, a much broader group of stakeholders was able to access and effectively understand the impact of impacts land use transitions have on their ecosystem services. Moreover, the themes of resilience introduced by the game also equipped

communities to think more critically about long-term economic and biophysical impacts land use decisions can have.

Another finding was a significant gap in available data on the climate impact of moringa growing. While it is often promoted as a promising economic and environmental crop, especially in terms of its potential to remove carbon dioxide from the atmosphere, only one or two studies were found that confirm this and reflect specific geographies and conditions. In fact, most studies cite a single study conducted in Japan⁷. AgNRM had planned to conduct field research to ascertain the economic and climate benefits of Moringa and believe further studies are recommended to examine and validate this assumption at a broader geographic scale.

On CREMA strengthening, AgNRM conducted a thorough capacity assessment of each CREMA, and compiled capacity strengthening recommendations, which can be found in Annex 2.

⁷ Villafuerte LR, Villafuerte-Abonal L (2009) Data taken from the Forestry Agency of Japan in Moringa. Malunggay Philippines, Apples of Gold Publishing, Singapore, P 240.



6. CROSSCUTTING THEMES

6.1 GENDER

Gender sensitization trainings

AgNRM project team improved its capacity to support gender equality and women's empowerment through series of in-house gender trainings for project staff. Trainings were structured on gender integration issues that were relevant to the project context. They provided the project team with a common understanding of gender inequality issues and strategies for addressing them when they surface and allowed the team greater understanding of the gender dynamics in project communities and their implications for women and men's time, resources allocation and control. This better equipped the project team to sensitize and challenge beneficiary communities to pursue changes in the existing patterns of inequalities to transform gender relations of power and control in the long run.



Counter child labor training

AgNRM educated and trained community leaders and households on prevailing child labor issues in project communities in the Eastern, Western and Black Volta corridors. A total of 2,109 beneficiaries were trained during FY18, for a total of 4,109 over LOP. The training included video drama episodes in local languages that highlighted specific activities in the household in which child labor is exploited. These include picking and processing of shea, fishing, farming, domestic activities, and catering industry in cities and towns. Following the videos, the project team held focus group discussions during which very relevant child labor related lessons and experiences were shared. The beneficiaries were enthusiastic and determined to work together to put an end to child labor practices and to serve as advocates, helping to raise child labor awareness in their communities. The child labor sensitization trainings have provided community leaders the opportunity to develop action plans to root out child labor from their communities and to prioritize actions that will promote the well-being of children.

Conduct Focus Group discussions (FGDs) for women groups

FGDs highlighted how women demonstrated much knowledge on best practices for moringa cultivation and provided extension support to their community members to cultivate the crop for income and household nutrition. This sense of empowerment experienced

by the women also included increased control and decision making over incomes and household nutrition as well as a sense of confidence in their new knowledge and opportunity to work together on something that is of great interest to them. While this sense of empowerment may not be radical and absolute, it provides the foundation for shifting the dynamics in women's favor in terms of decision making power within the household and access to agricultural information.

Strengthening women's groups

AgNRM gender specialist worked with outcome 1 team and community leaders to conduct trainings in group development and strengthening for women's groups in the targeted communities in the third and fourth. The trainings included two training of trainers workshops for staff and five community level trainings for natural resource product groups. The trainings enhanced the capacity of women to access the needed resources for household resilience and economic empowerment.

Work with outcome leaders to ensure gender integration

The AgNRM gender specialist worked closely with the Outcome 2 team, the Monitoring and Evaluations director, the Communications Specialist, and Human Resource Manager to implement some key activities in the project's gender strategy. The outcomes of these activities include strengthening the gender analysis of AgNRM data by developing tools for use and integrating gender sensitivity and awareness in recruitment processes



6.2 MONITORING AND EVALUATION

AgNRM Baseline Survey

The AgNRM project baseline survey commenced in FY 2017|Q2 and was successfully completed in FY 2018|Q1. The draft report was submitted by the service provider in December 2017, followed by a feedback session where AgNRM technical team provided inputs to the report. AgNRM finalized and submitted the baseline report to USAID on March 28, 2018. The report provided information on socio-demographic characteristics and the livelihoods of the enrolled households, which assisted AgNRM to keep track of project outputs and measurement of outcome indicators defined in the project's approved Monitoring and Evaluation Plan.

As part of the baseline data collection process, project beneficiaries were profiled and issued with Quick Response (QR) code-based ID cards. In all, a total of 4,505 individuals in 3,322 households were profiled in 59 communities located across the Black Volta Basin and the Western Biodiversity Corridor. Profiling of additional beneficiaries and households were put on hold because of USAID's directive to AgNRM to slow down on project interventions. AgNRM developed mobile applications integrating beneficiaries' profiles for all routine data collection tools to ensure real time access to quality and credible data.

External Data Quality Assessment (DQA)

In November 2017, a joint USAID Ghana and the Monitoring, Evaluation and Technical Support Services (METSS) team conducted a Data Quality Assessment of the AgNRM project to ascertain data compliance against data quality standards set by USAID. The team examined specific AgNRM's data collection processes including the use of data collection tools and processes. The team also visited and interacted with selected project beneficiaries. The DQA report was submitted by USAID in August 2018. The report highlighted the strengths and weaknesses of the project's data management and reporting system and provided recommendations for resolving the identified weaknesses. These recommendations were fed into the project's feedback loop and addressed by AgNRM during FY 2018.

Capacity Building and Collaborative Learning Events

The M&E team participated in a number of capacity building activities and collaborative learning events:

The 'Agriculture, Forestry and Other Land Uses (AFOLU) Carbon Calculator' Training:

AgNRM's prime awardee, Winrock International (WI), collaborated with the USAID Global Climate Change team, and developed

a set of simple, user-friendly, web-based calculation tools titled the 'Agriculture, Forestry and Other Land Uses (AFOLU) Carbon Calculator'. The Calculator uses sound and transparent science to produce yearly estimates of avoided and/or sequestered greenhouse gas (GHGs) emissions, reported in tons of CO₂ equivalent (tCO₂e). In March 2018, WI Ecosystem Services (ECO) team organized an in-house training for four M&E staff and two technical staff on the use of the AFOLU Calculator. The training empowered the AgNRM team to take up the responsibility of estimating GHG emissions in the project's Zone of Influence.

Iska Weather SMS Forecast Training and Baseline Survey:

AgNRM, in partnership with Ignitia/iska, conducted a training of trainers with AgNRM Tamale-based staff, field staff and CREMA community members to equip them with the expertise to explain weather forecasting to beneficiary farmers, and how they can use this information to plan their farm activities. In the two-day training workshop in Tamale in May, 2018, participants were introduced to the Ignitia/iska weather forecast Short Message Service (SMS), which uses Global Positioning System (GPS) coordinates to provide weather information within a 9-kilometer radius. The team subsequently signed on about 2,000 farmers who are currently receiving daily weather messages, which helps them make informed decisions on their farming practices.

Training on Community Facilitation

AgNRM continuously reinforced and improved upon the effectiveness of its approaches and techniques used for engaging with project beneficiaries – to effectively communicate complex concepts, facilitate productive discussions, build skills and change behaviors. A total of 14 participants (6 male, 8 female) were trained. The focus of the training program was the transfer of technical knowledge to adults and the facilitation of discussion to solve problems and/or help groups to take decisions on certain issues. The following topics concerning training were discussed: how to structure a training session, adult learning, training approaches and methods, and questioning. All AgNRM staff who attended acknowledged how valuable this training was for them and they were able to train illiterate audiences in more actionable and realistic terms.

Conducted a Collaborative Learning and Adaptation (CLA) Survey

Based on the illustrative CLA questions in the FY 2018 annual work plan, presented per Outcome, a CLA survey was conducted. The scope of the survey was at the level of staff reflection on the CLA questions. The exercise emphasized deeper reflection on approaches, stakeholder engagement – beneficiaries and partners, immediate or early outcomes and how they could be harnessed for sustainable impact and scalability.

Women's access and rights to land: As part of the activities AgNRM is implementing to increase land tenure security and access to communal natural resources for women, the M&E team provided guidelines for collecting land parcel location data by the Outcome 3 team. During this reporting period the M&E team generated 436 site plans for the preparation of land use agreements.

Women's access and rights to land

As part of the activities AgNRM is implementing to increase land tenure security and access to communal natural resources for women, the M&E team provided guidelines for collecting land parcel location data by the Outcome 3 team. The M&E team generated 436 site plans for the preparation of land use agreements.

Revised Global Food Security Strategy (GFSS) Indicator Comparison and Alignment:

The Feed the Future Indicator Handbook presents the set of performance management indicators for phase two of the U.S. Government's (USG's) Feed the Future initiative and is guided by the Global Food Security Strategy (GFSS). The updated handbook includes a host of both new and modified standard performance monitoring indicators. The AgNRM team reviewed this new set of indicators and their implications on the AgNRM project. These observations were communicated to USAID and series of meetings were convened by USAID to discuss them. A final list of proposed indicators for FY2019 were subsequently submitted to USAID, for consideration.

Annual Surveys:

The M&E team conducted field surveys to determine progress for a number of AgNRM project indicators, including the number of individuals who have applied new and/or improved technologies (EG.3.2-17); income levels of individual beneficiaries and households; and value of sales revenue received by MSMEs from natural resource products (NRP) as a result of USG assistance, all of which are required to be assessed and reported annually.

6.3 GRANTS

The grants unit facilitated the development of requests for grants, selection, award, post-award training and implementation of in-kind grants, operational support grants and implementation grants. The unit also engaged in the training of CREMA management teams on financial management.

Grants Activities Implemented

Post Award Workshops with CREMAs:

The grants unit conducted post award workshops to five CREMAs CECs who received in-kind grants to emphasize the purpose of the grant items and address potential post award challenges. A presentation was made on expected use for the in-kind grants presented and respective roles and responsibilities of AgNRM and the CECs. Each of the CREMAs, represented by their CECs, also explained the various measures put in place to guide the use of those items. These were then reviewed to serve as their respective internal operational manuals. These would further be reviewed by AgNRM grants unit.



Selection and Approval of subgrantees for Matching Grants:

AgNRM sought matching grants to support the work of Outcome 1, where AgNRM would match the resources of a private sector firm interested in investing in our NRPs. After review, negotiation and USAID approval, Winrock executed a subaward with Burro Brand to support the design of more efficient cooking technology for shea.

Implementation Support Grants for Behavior Change Communication:

As part of AgNRM's efforts to promote Behavior Change Communication (BCC) messaging, the grant unit issued a Request for Application (RFA002) soliciting for applications from qualified firms with substantial experience in developing and disseminating quality information, knowledge and skills to promote new behaviors and attitudes and to empower community members. In all, seven (7) applications were received and after preliminary vetting by the grants team, only two applicants were responsive to the RFA requirements. The two applications were then reviewed by a technical review committee and finally Literacy Bridge Ghana (LBG) was selected. A request to issue grants to LBG was then obtained from USAID.

Trained Six CREMA Management Team on Financial Management:

As part of AgNRM's efforts to build the capacities of the CREMA management teams and staff to fully manage their resources effec-

tively, the grants unit after drafting a Financial Management Training module facilitated a trainings for the six CREMA's in both the Black Volta Basin and Western Biodiversity Corridor in using the SDF model which made it interactive and using visual and practical demonstration in the delivery. The CREMA Management Team which constitute the CECs, the staff and /volunteers and some representatives of the CRMCs were trained on basic financial management tools and systems which includes: introduction to financial management, bookkeeping and accounting systems, budgeting, internal controls and filing. The participants were so excited over the simple and practical budgeting steps that they learnt and asked refresher annually.

Disbursed funds to five CREMAs for Operational Support Grants:

The Operational support grant are aimed at facilitating the CREMA operations and certification to enhance conservation and natural resource management by CREMA staff. After the financial management training for six CREMAs in the BVB and the WBC, follow up post award orientations on the Operational Support Grants was conducted for all six CREMAs except Moagduri Wuntanluri Kuwansasi (MWK) CREMA which had governance issues to be sorted out by outcome 4. The orientation was basically on the rules and regulations regarding the subagreements particularly the underlining documentations. The grants unit then facilitated the initial advance payment to five CREMAs to kick start their operations.

6.4 COMMUNICATIONS

AgNRM delivered various communications products and field activities throughout the life of the project, in line with project communications goals. The Communications team successfully produced two editions of the project's bi-annual newsletter to communicate a wide range of project and partner activities to key stakeholders. The newsletters supported project communication efforts, and reached a wide audience with AgNRM information, activities, and results.

Working with other project technical teams the Communications team developed a total of ten success stories highlighting the project's key achievements and positive impact on project beneficiaries including individuals, producer groups, and communities. AgNRM Communications also successfully delivered 28 editions of

Bi-Weekly Bulletins to USAID. The bi-weekly bulletins presented regular update on project implementation activities, feedback from project beneficiaries, and strategic collaborations with key stakeholders across project landscapes. In addition, the Communications team produced several short videos on key achievements of project interventions.

AgNRM conducted capacity building training for media partners supporting project activities in the Western and Eastern Biodiversity Corridor CREMAs to enable the media better understand the AgNRM project and to ensure factual, accurate and consistent reporting on project activities. Working closely with Winrock Home Office Communications team, AgNRM increased visibility of project activities, particularly on social media.

A complete list of AgNRM communications outputs over the life of project is provided in table 4 below:

TABLE 4: AGNRM COMMUNICATIONS OUTPUTS

Communications Product	Quantity	Title
Project Fact Sheet	1	Ghana Agriculture and Natural Resource Management Project
Project Newsletter (Bi-annual)	2	USAID AgNRM Newsletter (December 2017 and June 2018 editions)
Project Short videos	3	i. USAID AgNRM Biomonitoring Program. Available at https://vimeo.com/282503075 (password: biomonitoring) ii. USAID AgNRM Land Game. Available at https://vimeo.com/267320180 (password: game) iii. Rahinatu's Story: Moringa Entrepreneur. Available at https://www.youtube.com/watch?v=658VWuYxxJ0&t=3s
Success Stories	10	i. AgNRM Collaborates with Peace Corps Volunteer to Support Smallholder Farming in Northern Ghana ii. AgNRM's Biomonitoring in the Community Resource Management Areas (CREMAs) Yields Result iii. Land Tenure Security for Women Inspires Sustainable Gardening Practices Efforts Yield Results for the People of Dorimon Paramountcy\) iv. Local Communities Have High Hopes for A New Approach to Natural Resource Management v. Dry Season Gardening Builds Resilience and Bridges the Food Security and Nutrition Gap for Vulnerable Families vi. How Homegrown Vegetables are Impacting Nutrition And Income Generation vii. Moringa Processing Diversifies Income Sources for Women Entrepreneurs viii. Community Natural Resource Conservation Efforts Yield Results for The People of Dorimon Paramountcy ix. From Volunteer to Entrepreneur Alice Reaps the New Promise of Shea x. Enhancing AgNRM's Community Based Extension Approach for Sustainable Household Gardening Practices Bondaana Leads by Example As An AgNRM Training Volunteer for Her Community and Beyond
Bi-Weekly Bulletins	28	



7. ANNEXES

ANNEX 1: AGNRM PERFORMANCE AGAINST INDICATORS

TABLE 5: AGNRM RESULTS

FTF Ghana AgNRM Objective, Results and Indicators		FY3 Target ¹	FY3 Achievement (Oct 2017 - Sept 2018)	% of FY3 Target Achieved	LOP Achievement	LoP Target ²	% of LoP Target Achieved	Cumulative Target Y1-Y3	% of Cumulative Y1-Y3 Target Achieved
Goal: Poverty Reduction in Northern Ghana through sustainable increase and wealth and nutrition from natural and non-traditional agriculture products									
1. EG.10.23 (Required)	Number of people with increased economic benefits derived from sustainable natural resource management and conservation as a result of USG assistance	3,000	2,286	76.20%	3,507	15,000	23%	4,000	88%
2. Custom	Number of households demonstrating improvement in score on resilience index	N/A	N/A	N/A	N/A	2,750	N/A	N/A	N/A
Outcome 1: Objective: Increased income from natural resource products									
3. EG.5.2-1	Number of firms receiving USG-funded technical assistance for improving business performance	250	93	37.20%	243	700	35%	350	69%
4. Custom	Number of shea producer groups selling shea butter and kernels that meet international exporting standards as a result of USG assistance	0	0	N/A	0	150	N/A	0	N/A
5. Custom	Number of individuals with increased income from targeted natural resource products (NRP) as a result of USG assistance	600	482	80.30%	887	4,000	22%	800	111%
6. Custom	Value of sales revenue received by MSMEs from natural resource products (NRP) as a result of USG assistance (\$'000)	\$1,059	\$779	73.60%	\$980	\$21,761	5%	1,059	93%
Outcome 2: Objective: Improved food and nutritional security									
7. Custom	Number of households with improved access to water	N/A	N/A	N/A	N/A	7,500	N/A	N/A	N/A
8. Custom	Number of people trained in child health and nutrition through USG-supported programs	1,500	1,807	120.50%	3,790	5,000	76%	2,000	190%
Outcome 3: Objective: Increased security of farmer access and use of community natural resources									
9. EG.3.1-13	Number of households with formalized land with USG assistance.								
	Stage 1: Land identified and use/access rights negotiated	N/A	210	N/A	687	N/A			
	Stage 2: Development of land plot maps	N/A	436	N/A	687				
	Stage 3: Signing of Land Agreement	650	366	56.30%	366	4,000	9.20%	900	41%
10. Custom	Number of community land use plans proposed, adopted, or implemented as a result of USG assistance	30	30	100.00%	30	150	20.00%	30	100%

1 FY3 targets were set under the assumption of full funding in FY3

2 LOP targets cover the full anticipated implementation period (2016-2021) and funding

ANNEX 1: AGNRM PERFORMANCE AGAINST INDICATORS

FTF Ghana AgNRM Objective, Results and Indicators		FY3 Target ¹	FY3 Achievement (Oct 2017 - Sept 2018)	% of FY3 Target Achieved	LOP Achievement	LoP Target ²	% of LoP Target Achieved	Cumulative Target Y1-Y3	% of Cumulative Y1-Y3 Target Achieved
Outcome 4: Objective: Strengthened environmental stewardship									
11. 4.8-7 (Required)	Greenhouse gas (GHG) emissions, estimated in metric tons of Carbon Dioxide Equivalent (CO ₂ e), reduced, sequestered and/or avoided as a result of USG assistance	N/A	1,306,072	N/A	1,306,072	1,746,000	74.80%	227,000	575%
12. EG.10.2-2 (Required)	Number of hectares of biological significance areas under improved natural resources management as a result of USG assistance	N/A	N/A	N/A	N/A	250,000 ³	N/A	0	N/A
13. EG.10.2-1 (Required)	Number of hectares of biological significance areas showing improved biophysical conditions as a result of USG assistance	N/A	N/A	N/A	N/A	100,000	N/A	0	N/A
Crosscutting Indicators									
14. EG.3.2-1 (Required)	Number of individuals who have received USG supported short-term agricultural sector or food security training	4,700	4,288	91.20%	9,620	15,000	64%	6,700	144%
15. EG.3.2-4 (Required)	Number of food security private enterprises (for profit), producer organizations, water user associations, women's groups, trade and business associations, and community-based organizations (CBOs) receiving USG assistance	105	100	95.20%	238	210	113%	160	149%
16. EG.3.217 (Required)	Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance	1,100	2,802	254.70%	4,149	10,500	40%	2,100	198%
17. EG.3.218 (Required)	Number of hectares under improved technologies or management practices as a result of USG assistance	3,000	3,109.80	103.70%	5,051.80	21,750	23%	5,250	96%
18. EG.3.220 (Required)	Number of private enterprises, producer organizations, water user associations, women's groups, trade and business associations and community-based organizations (CBOs) that applied improved technologies or management practices as a result of USG assistance	74	30	40.50%	134	183	73%	113	119%
19. Custom	Number of people trained in sensitization to trafficking in persons and child labor practices	2,000	2,109	105.50%	4,109	6,600	62%	2,600	158%
20. EG.11-6	Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance	2,000	2,341	117.10%	2,341	6,000	39%	2,000	117%

³ Hectares over LOP were scheduled to be counted after completion of CREMA work. Due to premature closing of AgNRM, cumulative reporting during actual performance period is non applicable.

ANNEX 2: CREMA INSTITUTIONAL CAPACITY ASSESSMENT (CICA) REPORT

CREMA Institutional Capacity Assessment (CICA): Recommended Actions

1. Governance: Vision, Mission and Values			
Rational: Well-articulated and shared vision creates a sense of shared ownership and common commitment to activities.		Who?	
i. Has one of the following: Mission, vision, or statement of shared values	<p>WCHS, DORIMON, MWK, B-Y</p> <p>i. Facilitate visioning exercise for the CREMA leadership to identify or consolidate clear statement of vision, mission and statement of Values</p> <p>ii. Facilitate priority setting guided by vision and mission</p> <p>iii. Support leadership to identify simple ways to communicate these statements to community members, stakeholders and visitors – posting openly in the office and public spaces, slogans, songs, etc.</p> <p>iv. Guide leadership to establish schedule and process for review of vision and mission statement to ensure that they align with prevailing conditions</p>	<p>How will this be done?</p> <p>i. Workshop for CRMCs and CECs to establish statements, priority-setting parameters, medium of communication, and review schedules</p> <p>ii. Support leadership to identify individuals for specific roles and responsibilities for these actions</p> <p>iii. Support leadership to develop communication materials – message, CREMA brand, print, etc.</p> <p>iv. Adapt WINGspan training materials for this exercise</p>	
SKGK			
ii. Has vision and mission statements that all staff are familiar with	<p>i. Facilitate priority setting guided by vision and mission</p> <p>ii. Support leadership to identify simple ways to communicate these statements to community members, stakeholders and visitors – posting openly in the office and public spaces, slogans, songs, etc.</p> <p>iii. Guide leadership to establish schedule and process for review of vision and mission statement to ensure that they align with prevailing conditions</p>	<p>How will this be done?</p> <p>i. Workshop to establish priority-setting parameters, medium of communication, and review schedules</p> <p>ii. Support leadership to identify individuals for specific roles and responsibilities for these actions</p> <p>iii. Support leadership to develop communication materials – message, CREMA brand, print, etc.</p>	

ZUKPIRI			Who?
iii. Clear statement of vision, mission, and organizational values are widely shared, understood and used by staff, beneficiaries and other stakeholders for planning purposes	i. Guide leadership to establish schedule and process for review of vision and mission statement to ensure that they align with prevailing conditions.	How will this be done? i. Support leadership to develop communication materials – message, CREMA brand, print, etc. ii. Select CEC members to share experiences with newer CREMAs on how established vision and mission has enhanced their work with CREMA communities	
2. Legal Status			Who?
Rationale: Legal recognition (open bank account and adherence to relevant tax laws)			Who?
DORIMON, MWK			Who?
i. CREMA legal status and registration are not current or known to CECs	i. Support the CREMA to be legally registered/recognized by Chiefs, Government or District Assemblies? a. Support to agree on and finalize CREMA boundaries b. Support CEC to finalize constitution (Dorimon only) c. Support CECs to finalize by-laws (Dorimon only) d. Support CREMA to acquire certificate of devolution (Dorimon only) ii. Provide guidance to CREMA to comply with tax codes without the need for external intervention iii. Provide guidance to CREMA to comply with annual statutory requirement (audits and other reporting) iv. Orient the CREMA board on their roles and responsibilities, including review and approval of audit and other statutory reports	How will this be done? i. Planned sessions at community level, facilitated by the CEC/CRMCs ii. Direct support to CEC by AgNRM IPs iii. Facilitate the active participation of Chiefs, GoG and District Assemblies throughout these processes iv. Conduct orientation retreat for CREMA board – include legal compliance as part of the agenda	
WCHS, B-Y, SKGK			Who?
ii. CREMA is legally registered but does not always comply with all relevant laws and regulations	i. Provide guidance to CREMA to comply with tax codes without the need for external intervention ii. Provide guidance to CREMA to comply with annual statutory requirement (audits and other reporting) iii. Orient the CREMA board on their roles and responsibilities, including review and approval of audit and other statutory reports	How will this be done? i. Incorporate with financial management training for CECs and Finance Officers/Treasurers ii. Direct mentorship of CECs by AgNRM IPs	

ANNEX 2: CICA REPORT

		iii. Conduct orientation retreat for CREMA board – include legal compliance as part of the agenda	
ZUKPIRI			
iii. CREMA is legally registered, has appropriate tax status and complies with its legal tax and statutory obligations	i. Orient the CREMA board on their roles and responsibilities, including review and approval of audit and other statutory reports	<p>How will this be done?</p> <ul style="list-style-type: none"> i. AgNRM to request the CEC to develop checklist of all legal/ statutory obligation with required schedules ii. Direct mentorship of CECs by AgNRM IPs iii. Conduct Orientation retreat for CREMA Board – include legal compliance as part of the agenda 	Who?
3. Governing or Advisory Board			
Rationale: Governing boards whose members are committed to the CREMA and bring knowledge and experience, thus providing guidance, support and oversight to the CREMAs			
WCHS, DORIMON, ZUKPIRI, MWK, SKGK, B-Y			
<p>ii. A committed board but lack some relevant experience. Meetings are held periodically</p> <p>Inconsistent level of involvement with organization</p>	<ul style="list-style-type: none"> i. Facilitate explanation of clearly defined Terms of Reference (TOR) that detail its primary mandates, powers and limitations ii. Support the board to clearly differentiate roles within the board, and distinguish it from the executive roles of the CEC – A deeper understanding the CEC roles will be crucial iii. Work with board to agree on how its membership will be involved in strategic planning, resource mobilization, and developing and approving organizational policies and budget and annual financial statements – based on provisions of the constitution and by-laws iv. Reiterate board membership succession issues <ul style="list-style-type: none"> a. Criteria for becoming a board member b. Term limits c. System for electing or approving board members v. Work with board to establish meeting schedule for the year, making provisions for essential unscheduled meetings vi. Reiterate the importance of documentation of decisions and resolutions with minutes, and other appropriate instruments 	<p>How will this be done?</p> <ul style="list-style-type: none"> i. Board Orientation Retreat <ul style="list-style-type: none"> – this should be done for every new board, even if the membership does not change much ii. A board retreat manual will be developed to capture board roles in Admin., operations, internal controls, financial planning and legal compliance 	Who?

4. Leadership and Succession Plan			
Rationale: Over-reliance on a single person or founder puts the CREMA at Risk of failing in the absence of that person			
	B-Y		Who?
<p>ii. CREMA is somewhat dependent on an individual particularly for relationships with donors and stakeholders.</p> <p>Staff/CEC could sustain operations in the absence of one individual</p>	<p>i. Support individual CEC members to diversify knowledge beyond their stated roles and responsibilities, to understand how the other offices function</p> <p>ii. Support the CECs to design training programs that will ensure that CEC and CRMC members benefit from leadership and management training to include key functions such as fund-raising, operations, and program quality</p> <p>iii. Work with CECs to design and publicize personnel succession plan at all levels, including elections schedule for each office, as prescribed by the constitution and bylaws</p> <p>iv. Encourage the CEC to set up and mandate ad hoc or standing committees to perform specialized tasks with key stakeholders – CRMCS should be prioritized</p>	<p>How will this be done?</p> <p>i. Special facilitated meeting sessions with CEC, during which each member present their office to the rest, followed by Q&A</p> <p>ii. Support CECs/ CRMCS to incorporate reporting-out during regular meetings, followed by Q&A</p> <p>iii. Support CEC to brainstorm and prioritize activities that require dedicated committees to address</p> <p>iv. Appoint and train committee members – prioritize CRMCS</p> <p>v. Support CECs to design feedback mechanism for task force committees</p> <p>vi. Conduct Leadership Training (WINGspan Training Manual, Session 3.1 pg. 52-55 – Adapted)</p>	
	WCHS, DORIMON, ZUKPIRI, MWK, SGK		Who?
<p>iii. CREMA is reliant but not dependent on an individual.</p> <p>A plan is in place for succession and designated staff have been mentored for the role.</p> <p>IF an individual leads the CREMA it would continue to function smoothly</p>	<p>i. Support the CECs to design training programs that will ensure that CEC and CRMC members benefit from leadership and management training to include key functions such as fund-raising, operations, and program quality</p> <p>ii. Work with CECs to design and publicize personnel succession plan at all levels, including elections schedule for each office, as prescribed by the constitution and bylaws</p> <p>iii. Encourage the CEC to set up and mandate ad hoc or standing committees to perform specialized tasks with key stakeholders – CRMCS should be prioritized</p>	<p>How will this be done?</p> <p>i. Support CECs/ CRMCS to incorporate reporting-out during regular meetings, followed by Q&A</p> <p>ii. Support CEC to brainstorm and prioritize activities that require dedicated committees to address</p> <p>iii. Appoint and train committee members – prioritize CRMCS</p> <p>iv. Support CECs to design feedback mechanism for task force committees</p> <p>v. Conduct Leadership Training (WINGspan Training Manual, Session 3.1, pg. 52-55 – Adapted)</p> <p>vi. Incorporate other trainings cited in this document into a leadership training manual</p>	

ANNEX 2: CICA REPORT

5. Administration			
Rationale: Systems in place, ensures coordination within and among governing structures (CEC and CRMC) to improve efficiency and effectiveness			
DORIMON, B-Y		Who?	
ii. There is a basic structure (organogram) but it is incomplete. CEC and CRMC functions are not well-defined nor are the lines of communication and responsibility across the CEC and CRMC	<p>i. Support the CEC to finalize the design, documentation and publicize an organizational and reporting structure</p> <p>ii. Support the CEC to finalize the design of their organogram that outlines supervisory and staff responsibilities; document and publicize</p> <p>iii. Support the CEC and CRMCs to identify activities associated with their functions, and determine how they will:</p> <ol style="list-style-type: none"> Let others know what they are doing and plan to do Work with others to the benefit of the entire CREMA <p>iv. Support CEC and CRMCs to develop self-assessment schedule, including each level of the administrative structure</p>	<p>How will this be done?</p> <ol style="list-style-type: none"> Combine these actions with those recommended under leadership (i – iv) Support the printing of products for dissemination by the CEC/ CRMCs 	
ZUKPIRI, MWK, SKGK, WCHS		Who?	
There is a well-defined structure (organogram) in line with the CREMA's mission and goals. CEC and CRMC function are well defined and lines of communications and coordination are clear.	<p>i. Support the CEC and CRMCs to identify activities associated with their functions, and determine how they will:</p> <ol style="list-style-type: none"> Let others know what they are doing and plan to do Work with others to the benefit of the entire CREMA <p>ii. Support CEC and CRMCs to develop self-assessment schedule, including each level of the administrative structure</p>	<p>How will this be done?</p> <ol style="list-style-type: none"> Special facilitated meeting sessions with CEC & CRMC, during which each member of the CEC, and selected members of the CRMCs, present their office to the rest, followed by Q&A Support the printing of products for dissemination by the CEC/ CRMCs 	
6. Operation policies, Procedures and systems			
Rationale: Availability and operational knowledge of constitution and by-laws at the CRMC and CEC level			
WCHS, DORIMON, MWK, B-Y, SKGK		Who?	

ii. Some training on content of by-laws and constitution but adherence is inconsistent	<ul style="list-style-type: none"> i. Facilitate training for CEC and CRMcs on the contents of the constitution and by-laws ii. Support CEC and CRMcs to log issues of non-compliance with constitution or bylaws iii. Support CEC and CRMcs to identify options for addressing recurring issues of non-compliance – including amendment, sensitization and training 	How will this be done? <ul style="list-style-type: none"> i. Combine this with relevant actions on legal status ii. CEC to buy a ledger and ruled for recording non-compliance issues iii. Set time and/or issues threshold for review and decision-making 	Who?
ZUKPIRI			
iii. Complete and appropriate procedures are known to CEC and CRMc members Constitution and by-laws are consistently adhered to and applied	<ul style="list-style-type: none"> i. Support CEC and CRMcs to log issues of non-compliance with constitution or by-laws ii. Support CEC and CRMcs to identify options for addressing recurring issues of non-compliance – including amendment, sensitization and training 	How will this be done? <ul style="list-style-type: none"> i. CEC to buy a ledger and ruled for recording non-compliance issues ii. Set time and/or issues threshold for review and decision-making 	Who?
7. Filing and Information Systems			
Rationale: Efficient and effect information filing and flow can improve on overall performance			
DORIMON			
i. There is no organizational filling system or person responsible for filling	<ul style="list-style-type: none"> i. Work with CEC and CRMcs to determine the different types of information needed, transacted/ exchanged and generated by the CREMA at different levels ii. Support CEC and CRMcs to sort, categorize and cluster these information iii. Support the CEC and CRMcs to rationalize how these will be flowing in and out systematically iv. Support the CEC and CRMcs to determine the best storage system for different media – paper, CDs, USB Pen Drives, etc. v. Support the CEC and CRMcs to mirror this system in electronic files on their computers vi. CEC and CRMcs appoint competent individual to manage the different tiers of information, and someone responsible for the entire system 	How will this be done? <ul style="list-style-type: none"> i. Design and conduct training workshop in the context of information management ii. Facilitate the use of CREMA operational grant to purchase essential office supplies to upgrade the system for the CEC, with additional supplies to last for a few months iii. Install appropriate applications (MS-Office & Biodiversity monitoring system) on CREMA Computers iv. Provide training of CECs in the use of such applications 	Who?

ANNEX 2: CICA REPORT

	<p>vii. Work with CEC and CRMCS to determine information gaps and how to fill them to enhance performance</p> <p>viii. Communicate the information system structure to all staff, including gaps needing their responses</p> <p>ix. Provide training to individuals, and/ or group of individuals who need specialized training for specific types of information, including where to source them (allies, gate-keepers, etc.)</p>	
	WCHS, ZUKPIRI, MWK, B-Y, SKGK	Who?
<p>ii. There is documentation of some information system, policies and procedures</p> <p>A staff member is responsible for managing the information system</p>	<p>i. Support the CEC and CRMCS to mirror existing filing system in electronic files on their computers</p> <p>ii. CEC and CRMCS appoint competent individual to manage the different tiers of information, and someone responsible for the entire system – diversify responsibilities for specific information cluster under a central coordinator</p> <p>iii. Work with CEC and CRMCS to determine information gaps and how to fill them to enhance performance</p> <p>iv. Communicate the information system structure to all staff, including gaps needing their responses</p> <p>v. Provide training to individuals, and/ or group of individuals who need specialized training for specific types of information, including where to source them (allies, gate-keepers, etc.)</p>	<p>How will this be done?</p> <p>i. Design and conduct training workshop in the context of information management</p> <p>ii. Facilitate the use of CREMA operational grant to purchase essential office supplies to upgrade the system for the CEC, with additional supplies to last for a few months</p> <p>iii. Install appropriate applications (MS-Office & Biodiversity monitoring system) on CREMA Computers</p> <p>iv. Provide training of CECs in the use of such applications</p>
8. Personnel Policies – HR (Staff members & Volunteers)		
<p>Rationale: This provides clear rules and regulations that governs how staff, volunteers and other CREMA representatives are expected to act and what they can expect from the organization</p>		
	DORIMON, MWK, B-Y, SKGK	Who?
<p>i. There is no guidance for identifying needs and managing volunteers</p>	<p>i. Support the CEC to develop a documented policy for recruiting, selecting, engaging, and managing/supervising volunteers</p> <p>ii. Provide training and orientation for staff of legal and statutory requirements related to HR management</p> <p>iii. Support CEC to develop templates of job descriptions for staff and volunteers</p> <p>iv. Support CEC to develop performance standards and corresponding staff assessment forms, based on job descriptions – determine frequency of performance assessment</p>	<p>How will this be done?</p> <p>i. Provide CEC with sample policies for recruiting, selecting, engaging, and managing/supervising volunteers, including those from other anonymous CREMAs, to review and develop their own customized policies</p> <p>ii. Integrate HR management training with administration in one manual</p>

	<p>v. CEC to document functional units, supervision and reporting lines</p> <p>vi. CEC to document/ or provide documentary evidence of financial or non-financial recognition/compensation to staff and volunteers</p>		
ZUKPIRI			
<p>ii. There is guidance on volunteer selection criteria and management procedures.</p> <p>- Volunteers are provided with job descriptions</p>	<p>i. Support CEC to develop performance standards and corresponding staff assessment forms, based on job descriptions – determine frequency of performance assessment</p> <p>ii. CEC to document functional units, supervision and reporting lines</p> <p>iii. CEC to document/ or provide documentary evidence of financial or non-financial recognition/compensation to staff and volunteers</p>	<p>How will this be done?</p> <p>i. Design and integrate training workshop with administration and some aspects of leadership</p>	Who?
<p>iii. Volunteers and interns are trained and supervised</p> <p>They receive performance reviews and are recognized for their work</p>	<p>i. No intervention</p>	<p>How will this be done?</p> <p>Find out if they have resource persons that can help train other CREMAS</p>	Who?
9. Financial Management			
<p>Rationale: Clear, well-documented policies and procedures for financial management that are understood and used by CEC allows CREMAS to function transparently and promotes integrity and accountability</p>			
MWK, B-Y			
<p>Did not meet the threshold for rating</p> <p>No financial management training</p>	<p>i. Work with CEC to develop basic book keeping with ledgers</p> <p>ii. As transactions evolve, work with CEC to determine what type of accounting system that can best fit the nature of transactions the CREMA is engaged in</p> <p>iii. Gradually transform system into more advanced excel-based system</p> <p>iv. Work with CEC, especially the Treasurer, to develop simple financial procedures with templates for accompanying documentation</p>	<p>How will this be done?</p> <p>i. Develop Financial Management Training Manual to include,</p> <ol style="list-style-type: none"> Internal controls Financial planning and sustainability <p>ii. Adapt contents from (WINGspan Training Manual, Session 5.3, pg. 110-119)</p>	Who?

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	<p>v. Work with CEC to train personnel on the use of the financial system, and approval structure</p> <p>Phase 2</p> <p>vi. Support the CEC to develop financial policies and procedures, including;</p> <ul style="list-style-type: none"> a. Signatory/ authority matrix – check signatories b. Budgeting and reporting requirements c. Policies regarding receipts d. Requirement for documenting expenses /payments and income receipts e. Managing the bank accounts in the CREMA's name f. Managing petty cash g. Monthly reconciliation of all cash accounts h. Handling potential fraud <p>vii. Establishment of separate CREMA accounts for separate programs</p> <p>viii. CEC to acquire cashbook that will be completed in ink, used for each bank account</p> <p>ix. Support CEC to accurately and securely record and file account balances</p> <p>x. CEC to ensure that all payments and receipts are recorded in the CREMA's bookkeeping system</p> <p>xi. CEC to establish a system that links transaction in the accounting system to supporting documentations</p> <p>xii. Work with CEC to identify appropriate and simple accounting system that ensure compliance with financial procedures</p> <p>xiii. CEC to ensure that the end of fiscal year accruals is accurately recorded</p> <p>xiv. Provide targeted regular training for staff members on the procedures</p>	<p>iii. Organize specific training for all CREMA Finance Officers/ Treasurers on finance policies and procedures</p> <p>iv. Establish training schedule for CEC staff on financial policies and procedures</p> <p>v. Support the CEC work with auditing firm to streamline system</p>	
	WCBS, DORIMON, SKGK		
i. CREMA has a simple and mostly informal financial management system	<p>i. Work with CEC to develop basic book keeping with ledgers</p> <p>ii. As transactions evolve, work with CEC to determine what type of accounting system that can best fit the nature of transactions the CREMA is engaged in</p>	<p>How will this be done?</p> <p>i. Synthesize Financial Management Training to include,</p> <ul style="list-style-type: none"> a. Internal controls b. Financial planning and sustainability 	Who?

<p>Few people in the CEC understand and follow the policies</p>	<ul style="list-style-type: none"> iii. Gradually transform system into more advanced excel-based system iv. Work with CEC, especially the Treasurer, to develop financial procedures with templates for accompanying documentation v. Work with CEC to train personnel on the use of the financial system, and approval structure <p>Phase 2</p> <ul style="list-style-type: none"> i. Support the CEC to develop financial policies and procedures, including; <ul style="list-style-type: none"> a. Signatory/ authority matrix – check signatories b. Budgeting and reporting requirements c. Policies regarding receipts d. Requirement for documenting expenses /payments and income receipts e. Managing the bank accounts in the CREMA's name f. Managing petty cash g. Monthly reconciliation of all cash accounts h. Handling potential fraud ii. Establishment of separate CREMA accounts for separate programs iii. CEC to acquire cashbook that will be completed in ink, used for each bank account iv. Support CEC to accurately and securely record and file account balances v. CEC to ensure that all payments and receipts are recorded in the CREMAS bookkeeping system vi. CEC to establish a system that links transaction in the accounting system to supporting documentations vii. Work with CEC to identify appropriate and simple accounting system that ensure compliance with financial procedures viii. CEC to ensure that the end of fiscal year accruals is accurately recorded ix. Provide targeted regular training for staff members on the procedures 	<ul style="list-style-type: none"> ii. Adapt contents from (WINGspan Training Manual, Session 5.3, pg. 110-119) iii. Organize specific training for all CREMA Finance Officers/ Treasurers on finance policies and procedures iv. Establish training schedule for CEC staff on financial policies and procedures v. Support the CEC work with auditing firm to streamline system 	<p>Who?</p>
	ZUKPIRI		

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ii. Has a good financial system with documented policies and procedures - Financial management staff adhere to policies and procedure but other many not be familiar with the system	i. Work with CEC to train personnel on the use of the financial system, and approval structure	How will this be done? i. In-house working session with the CEC ii. If the diagnostics show that the system is not as robust as was assessed, then the financial management training can be administered iii. Organize specific training for all CREMA Finance Officers/ Treasurers on finance policies and procedures iv. Establish training schedule for CEC staff on financial policies and procedures v. Support the CEC work with auditing firm to streamline system
10. Internal Controls		
Rationale: Strong internal controls helps organization safeguards assets and manage internal risks and ensure accurate and reliable financial accounting and reporting		
	DORIMON, MWK, B-Y	Who?
i. No documented internal controls Checks and balances for financial transactions are weak	i. Support CECs to draft internal control policies that guide the segregation of duties among staff involved in financial management ii. Support CECs to establish transaction review, approval and financial reporting system, involving multiple people iii. Clearly define petty cash management procedures iv. CEC to determine safest means for storing cash, check books and other valuable items v. Support CEC to document procedures for handling possible instances of fraud and theft vi. Support CECs to establish schedule for review and update of internal controls	How will this be done? i. Integrate internal controls within phase-2 of the financial management training ii. Provide a financial management policy format, from which each CREMA will be supported to develop customized policy documents, including internal control iii. Conduct brainstorming sessions with CEC that will help them to think through various types of transactions they are involved in now or in the near future; and the measures they will put in place to demonstrate transparency and accountability to their membership to build trust iv. Adapt contents from (WINGspan Training Manual, Session 5.3, Activity 4: Money Management; pg. 117-119)
	WCBS, ZUKPIRI, SKGK	Who?
ii. Some internal controls are documented	i. Support CECs to review and update internal control policies that guide the segregation of duties among staff involved in financial management	How will this be done? i. Integrate internal controls within phase-2 of the financial management training

Procedures for checks and balances are understood and frequently adhered to by relevant staff	<ul style="list-style-type: none"> ii. Support CECs to review and update transaction review, approval and financial reporting system, involving multiple people iii. Review and update petty cash management procedures iv. Review and update safety of storage methods for cash, check books and other valuable items v. Review, update and document procedures for handling possible instances of fraud and theft vi. Support CECs to establish schedule for review and update of internal controls 	<ul style="list-style-type: none"> ii. Organize working meeting with CEC members to provide feedback and documentation on how their internal control system has been performing iii. Identify gaps and recommend practical actions to address them iv. Provide guidance on the documentation of actions, using recommended format v. Adapt contents from (WINGspan Training Manual, Session 5.3, Activity 4: Money Management; pg. 117-119) 	
11. Financial planning and sustainability			
Rationale: Financial planning enables CREMAs to implement planned activities and demonstrate accountability to resource providers. This builds confidence in the CREMAs and make them more likely to continue to enjoy support			
	DORIIMON, MWK, B-Y, SKGK		Who?
<ul style="list-style-type: none"> i. Incomplete budgets for activities that partially align with strategies Ad hoc or inconsistent fundraising All funds officially allocated to project, no core operational funds available 	<ul style="list-style-type: none"> i. Support CEC to develop various budgets: <ul style="list-style-type: none"> a. Project activities – ecological management, NRP aggregation, etc. b. Operating budget c. Overhead costs d. Consolidate all into a CREMA master budget ii. CEC to agree on how frequently they will be developing and/ or reviewing their master budget, and what guides the development of activity budgets iii. CEC to determine and document various sources of funding, including income-generating activities, grants, fees iv. CEC to develop resource mobilization strategy, in accordance with their strategic plan 	How will this be done? <ul style="list-style-type: none"> i. Develop module in budgeting, that incorporates learning by doing methodologies for adult learners ii. Adapt contents for budget estimates from (WINGspan Training Manual, Module 7, Part 5 – How to present a project and/ or write a proposal; budget estimate; pg. 152) iii. A manual for financial planning and resources mobilization will be developed iv. Output of facilitated resource mobilization process will be a documented strategy 	
	WCHS, ZUKPIRI		Who?
<ul style="list-style-type: none"> ii. A basic overall organizational budget that was developed separately from the strategic plan Project budgets are developed at the 	<ul style="list-style-type: none"> i. Support CEC to streamline various budgets with the strategic plan: <ul style="list-style-type: none"> a. Project activities – ecological management, NRP aggregation, etc. b. Operating budget c. Overhead costs d. Consolidate all into a CREMA master budget 	How will this be done? <ul style="list-style-type: none"> i. Develop module in budgeting, that incorporates learning by doing methodologies for adult learners ii. Adapt contents for budget estimates from (WINGspan Training Manual, Module 7, Part 5 – How to present a project and/ or write a proposal; budget estimate; pg. 152) 	

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outset of activities but not regularly reviewed	<p>ii. CEC to agree on how frequently they will be developing and/ or reviewing their master budget, and what guides the development of activity budgets</p> <p>iii. CEC to determine and document various sources of funding, including income-generating activities, grants, fees</p> <p>vii. CEC to develop resource mobilization strategy, in accordance with their strategic plan</p>	<p>iii. A manual for financial planning and resources mobilization will be developed</p> <p>vi. Output of facilitated resource mobilization process will be a documented strategy</p>
One or two external donors		
12. Organizational Management (Strategic and Operation Plans)		
Rationale: Ability of CREMAs to realize its mission and goals with a shared vision, long term and costed plan and annual operational plans		
DORIMON, ZUKPIRI		
i. No long-term strategic plan or annual operational plans	<p>i. Support the CEC to facilitate the drafting of their CREMA management plan</p> <p>ii. CEC to identify and engage relevant stakeholders that will participate in the development of their CREMA management plan; these may include WD, FSD, EPA, DA, MOFA, and NGOs</p> <p>iii. CEC to consult with constituent communities, and determine measurable objectives, resource needs, and costs and funding sources</p> <p>iv. Support the CECs to work out a process for developing annual operation and work plans based on the management plan</p> <p>v. CECs to develop annual operations budgets alongside management plans</p> <p>vi. CECs to determine lifespan of the management plan, and review schedules</p> <p>vii. Work with the CEC to establish a management plan review process</p>	<p>How will this be done?</p> <p>i. Provide CEC with CREMA management plan template/ samples from WD to review and adapt</p> <p>ii. Guide CEC to develop a CREMA management planning process, including stakeholder mapping among other facilitation techniques</p> <p>iii. Design Organizational Management workshop with development of mission and vision statement</p> <p>iv. Workshop for CRMCs and CECs to establish statements, priority-setting parameters, medium of communication, and review schedules</p>
MWK, B-Y		
ii. Has a short-term plan that translates its mission and goal into objectives	<p>i. Support the CEC to facilitate the transformation of their short-term plans into CREMA management plan</p> <p>ii. CEC to identify and engage relevant stakeholders that will participate in the review and transformation of their short-term plans into a full fledged CREMA management plan</p> <p>iii. Support the CECs to work out a process for developing annual operation and work plans based on the</p>	<p>How will this be done?</p> <p>i. Guide CEC to update their short-term plans into a full fledged CREMA management plan</p> <p>ii. Design Organizational Management workshop with development of mission and vision statement</p> <p>iii. Workshop for CRMCs and CECs incorporating review process, medium of</p>
Operational plans and budget relate strategic plan to		

management decisions	management plan that align with vision, mission and objectives	communication of management plans, and review schedules iv. Support CEC to develop and implement quarterly action plans, based on their annual operation plans	Who?
Shallow Knowledge of management plan -- Not implemented	iv. CECs to develop annual operations budgets alongside management plans v. CECs to determine lifespan of the management plan, and review schedules viii. Work with the CEC to establish a management plan review process		
Needs revision			
iii. Has a long-term management plan developed with staff and stakeholders	i. Share experiences of management plan implementation with merging CREMAS	How will this be done? i. Coopt CEC members to serve as resource persons in organizational development workshops ii. CEC members to provide peer mentorship to emerging CECs on management planning and implementation issues	
Budget is tied to planned activities. SOP is reviewed annually			
SOP informs annual operation plan and guides CREMA activities, which are reviewed quarterly			
13. Resource Mobilization			
Rationale: Ability of CREMAS to tie strategic plan's budget to enable them prioritize strategies for identifying and approaching appropriate donors			
	DORIMON, ZUKPIRI, MWK, B-Y		Who?
i. No strategic plan or resource mobilization strategy	i. Support the CEC to develop a strategic resource mobilization plan that aligns with the CREMA management plan ii. Work with CEC to identify potential funders or donors that may have shared interest in agreed action areas; these may include WD, DA, EPA-SLMP iii. Work with CEC to develop a strategy for obtaining funds and resources to support program priorities	How will this be done? i. Facilitate a review session with the CEC to identify resource needs within the CREMA management plan ii. Facilitate a brainstorming and consensus-building session with the CEC to identify funding opportunities and potential donors iii. Design and deliver financial resource mobilization training; adapt WINGspan	
External funding is raised infrequently			

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	<p>iv. Provide funds mobilization training for CEC and CREMA board members in proposal writing and implementation of communication strategy</p> <p>v. Work with CEC to identify and operationalize income-generating activities and diversify sources of funding that can support general operations</p> <p>vi. Work with CEC to maximize resources obtained through partnerships with other organizations, and minimize cost</p>	<p>Module 7: Mobilizing Financial Resources for Community Development, Pg. 144-153</p> <p>iv. Incorporate training with “financial planning and sustainability training” .</p> <p>v. Work with CEC to develop a stakeholder outreach plan</p>	Who?
SKGK			
<p>ii. Has a budget linked to the CREMA management plan</p> <p>Actively reaches out to potential donors</p> <p>Has one or more income-generation activities for raiding unrestricted funds</p>	<p>i. Work with CEC to develop a strategy for obtaining funds and resources to support program priorities</p> <p>ii. Provide funds mobilization training for CEC and CREMA board members in proposal writing and implementation of communication strategy</p> <p>iii. Work with CEC to identify and operationalize income-generating activities and diversify sources of funding that can support general operations</p> <p>ii. Work with CEC to maximize resources obtained through partnerships with other organizations, and minimize cost</p>	<p>How will this be done?</p> <p>i. Facilitate a brainstorming and consensus-building session with the CEC to identify funding opportunities and potential donors</p> <p>ii. Design and deliver financial resource mobilization training; adapt WINGspan</p> <p>Module 7: Mobilizing Financial Resources for Community Development, Pg. 144-153</p> <p>iii. Incorporate training with “financial planning and sustainability training” .</p> <p>iv. Work with CEC to develop a stakeholder outreach plan</p>	Who?
WCHS			
<p>iii. Has a resource mobilization strategy listing potential resource providers and an outreach plan</p> <p>Developed partnerships for efficiency</p> <p>Has submitted one or more proposal for funding</p>	<p>i. Provide funds mobilization refresher training for CEC and CREMA board members in proposal writing and implementation of communication strategy</p> <p>ii. Harness capacity of CEC to provide peer mentorship for other CREMAs</p>	<p>How will this be done?</p> <p>i. Facilitate a brainstorming and consensus-building session with the CEC to identify funding opportunities and potential donors</p> <p>ii. Design and deliver financial resource mobilization training; adapt WINGspan</p> <p>Module 7: Mobilizing Financial Resources for Community Development, Pg. 144-153</p> <p>iii. Incorporate training with “financial planning and sustainability training” .</p> <p>iv. Incorporate CEC members in experience sharing sessions and group sessions during training</p>	Who?
14. Communication Strategy			
Rationale: Setting up the CREMA for open communication and decision-making			

DORIMON, MWK, B-Y			Who?
ii. Open communication between and among staff and management	i. Based on constitution and bylaws, task CEC with developing clear meeting schedules, including skeletal agenda for the next two meetings, and operational and activity priorities for specific periods of the year	How will this be done? i. Conduct brainstorming and consensus-building sessions to develop meeting schedules and effective communication mechanisms ii. CEC will consider practical issues such as, mobile phone connectivity, shear distances between communities, transportation costs, FM radio coverage and associate costs, etc. iii. Adapt and deliver WINGspan Communications training; session 3.4., Pg. 61-63 iv. Adapt and deliver WINGspan Conflict training; session 2.2, Pg. 33-36	
Regular opportunity for discussing management, program or technical area	ii. Support CEC to identify and develop appropriate internal communication mechanisms iii. Provide training for CEC in conducting effective meetings, with a focus on participation and inclusive decision-making processes that incorporate ideas and inputs of all		
Decisions are communicated and explained to staff	iv. CEC to create safe spaces and communication channels for individual members to raising challenging issues v. CEC to publicize agreed communication channels that facilitates information inputs, and provide timely information dissemination to the rest of the group and communities vi. CEC to determine a strategy for dealing with various categories of conflicts, and ensure they are well publicized and consistently employed		
WCHS, ZUKPIRI, SKGK			Who
iii. Staff ideas are consistently encouraged and incorporated	i. Provide training for CEC in conducting effective meetings, with a focus on participation and inclusive decision-making processes that incorporate ideas and inputs of all	How will this be done? i. Adapt and deliver WINGspan Communications training; session 3.4., Pg. 61-63 ii. Adapt and deliver WINGspan Conflict training; session 2.2, Pg. 33-36	
Staff are comfortable initiating discussions, contributing ideas and raising issues	ii. CEC to create safe spaces and communication channels for individual members to raising challenging issues iii. CEC to publicize agreed communication channels that facilitates information inputs, and provide timely information dissemination to the rest of the group and communities		
Staff are involved in decision-making and feel responsible and accountable for the process	iii. CEC to determine a strategy for dealing with various categories of conflicts, and ensure they are well publicized and consistently employed		
15. Stakeholder Involvement			

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Rationale: Identifying and nurturing relationships with relevant stakeholders to facilitate program coordination, partnering and resource sharing			
DORIMON		How will this be done?	Who?
i. There is no definition of stakeholders or analysis of their service and geographic coverage	<p>i. Support CEC to identify their stakeholders, and understand their fears, interests, services and coverage</p> <p>ii. CEC to establish a complete and up-to-date information about all stakeholders working in the same geographical and technical areas.</p> <p>iii. Work with CEC to understand the institutional culture, values and approaches of each stakeholder, e.g. gender</p> <p>iv. Based on the stakeholder importance and nature of relationship with the CREMA, support the CEC to establish collaborative agreements or MOUs to better define expectations – e.g. MOFA, WD, EPA, DA, donors, projects, etc.</p> <p>v. Work with CEC to define a process through which relevant stakeholders can participate in the review and update of their CREMA management plan, operational and activity plans</p> <p>vi. CEC to schedule periodic formal information sharing forum for stakeholders, in addition to regular written reports shared with them</p>	<p>How will this be done?</p> <p>i. Conduct a stakeholder mapping exercise and establish a functional roster</p> <p>ii. Integrate with financial resource mobilization training; adapt WINGspan Module 7: Mobilizing Financial Resources for Community Development, Pg. 144-153; with emphasis on:</p> <p>a. PART 2: What are the Steps in a Funding Search?</p> <p>b. PART 3: How to Identify Funding Sources</p>	
MWIK, B-Y		How will this be done?	Who?
<p>ii. There is a strategy to reach informal stakeholders and a basic list of their services and coverage</p> <p>Informal sharing sessions for planning and sharing knowledge are held periodically</p>	<p>i. Support CEC to review and update their stakeholders list, and understand their fears, interests, services and coverage</p> <p>ii. CEC to establish a complete and up-to-date information about all stakeholders working in the same geographical and technical areas.</p> <p>iii. Work with CEC to understand the institutional culture, values and approaches of each stakeholder, e.g. gender</p> <p>iv. Based on the stakeholder importance and nature of relationship with the CREMA, support the CEC to establish collaborative agreements or MOUs to better define expectations – e.g. MOFA, WD, EPA, DA, donors, projects, etc.</p> <p>v. CEC to schedule periodic formal information sharing forum for stakeholders, in addition to regular written reports shared with them</p>	<p>How will this be done?</p> <p>i. Conduct a stakeholder mapping exercise and establish a functional roster</p> <p>ii. Integrate with financial resource mobilization training; adapt WINGspan Module 7: Mobilizing Financial Resources for Community Development, Pg. 144-153; with emphasis on:</p> <p>a. PART 2: What are the Steps in a Funding Search?</p> <p>iii. PART 3: How to Identify Funding Sources</p>	

WCBS, ZUKPIRI, SKGK			Who?
<p>iii. There is a strong link to formal stakeholders</p> <p>A robust list of stakeholder coverage service, cost and quality exist</p> <p>MoUs with one or more partners have been developed</p> <p>Organized semi-annual information sharing and planning occurs</p>	<p>i. CEC to share experiences with other CREMAS</p>	<p>How will this be done?</p> <p>i. Engage CEC as resource persons in training organized for other CREMAS, as necessary</p>	
16. Knowledge Management			
Rationale: Systems for sharing knowledge, technical expertise and best practices among staff, lead to efficient adaption of new practices, stronger programs and more competent staff			
DORIMON, B-Y			Who?
<p>Below rating threshold</p>	<p>i. Based on CREMA management plan, annual operation and activity plans, CEC to identify institutions with the appropriate technical capacities needed to build their knowledge base for effective</p> <p>ii. Support CEC to develop a learning strategy that will:</p> <ol style="list-style-type: none"> inform their relationships with identified technical institutions; define a process for analyzing and identifying new information in order to adapt it for their project incorporate processes for sharing new information and practices among CEC, CRMCs and the community at large Incorporate a monitoring framework that ensures learning is realized at every level identified 	<p>How will this be done?</p> <ol style="list-style-type: none"> Incorporate stakeholder mapping and formalization of relationships with 'stakeholder involvement' facilitation Develop framework for the development of CREMA learning strategies Incorporate learning from working with the current AgNRM community-driven implementation model into the learning strategy – community-based extension agents (CBEAs), community-based resource persons (CBRPs) and field coordinators (FCs) 	

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DORIMON, MWK, B-Y			Who?
i. No strategy exists for involving communities or beneficiaries in needs assessment, planning or program design	i. Work with CEC to develop a process/ processes for involving communities in the designing, monitoring and implementing activities, which fosters buy-in and makes program more relevant, effective and sustainable	How will this be done? i. Facilitate process development forum that incorporate effective discussion and consensus-building techniques with the CEC	
Communication with community leaders is ad hoc	ii. Support CEC to define and enable roles of CREMA communities and their residents in the implementation of program activities, and provide feedback through accessible channels iii. Support CEC to define appropriate forum, format and schedule to provide regular updates on program resources, and solicit feedback from the community iv. Support the CEC to develop appropriate tools to assess the gender and cultural issues facing CREMA communities, and a process for incorporating the assessment findings into program	ii. Incorporate learning from working with the current AgNRM community-driven implementation model to facilitate the definition of CREMA community roles – community-based extension agents (CBEAs), community-based resource persons (CBRPs) and field coordinators (FCs) iii. Adapt gender audit tools with support from AgNRM's Gender Specialist and M&E Manager	
ZUKPIRI, SKGK			
ii. Regular orientation of community, leaders and beneficiaries about activities	i. Work with CEC to formalize a process/ processes for consistently involving communities in the designing, monitoring and implementing activities, which fosters buy-in and makes program more relevant, effective and sustainable	How will this be done? i. Facilitate process development forum that incorporate effective discussion and consensus-building techniques with the CEC	
Sometimes involves community representatives in planning and decision making	ii. Support CEC to define, formalize and enable roles of CREMA communities and their residents in the implementation of program activities, and provide feedback through accessible channels consistently iii. Support CEC to define appropriate forum, format and schedule to provide regular updates on program resources, and solicit feedback from the community iii. Support the CEC to develop appropriate tools to assess the gender and cultural issues facing CREMA communities, and a process for incorporating the assessment findings into program	ii. Incorporate learning from working with the current AgNRM community-driven implementation model to facilitate the definition of CREMA community roles – community-based extension agents (CBEAs), community-based resource persons (CBRPs) and field coordinators (FCs) iii. Adapt gender audit tools with support from AgNRM's Gender Specialist and M&E Manager	
WCHS			
Entered as advanced (iii) but does not reflect	iv. Work with CEC to formalize a process/ processes for consistently involving communities in the designing, monitoring and implementing activities, which fosters	How will this be done? iii. Facilitate process development forum that incorporate effective discussion and	

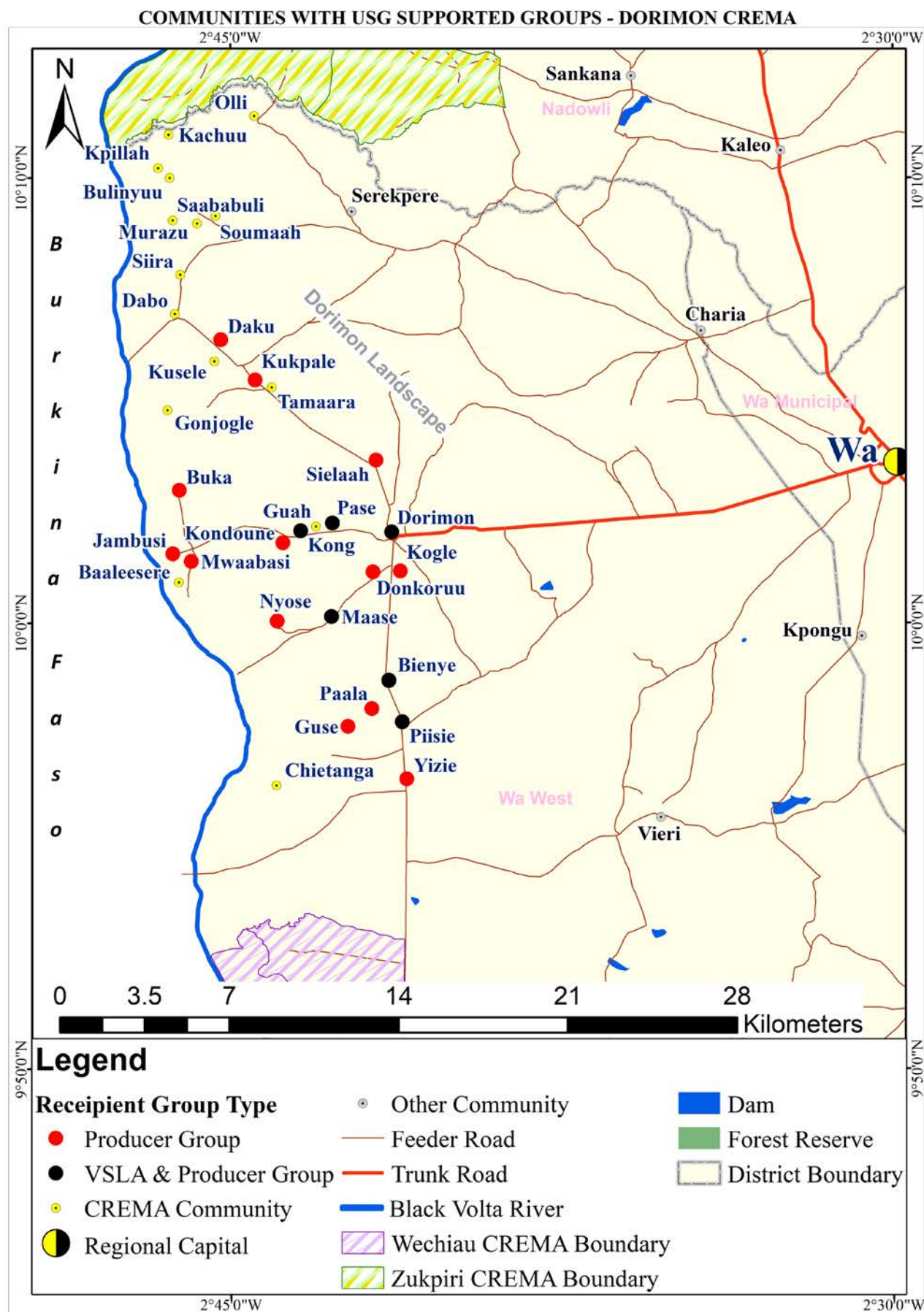
ANNEX 2: CICA REPORT

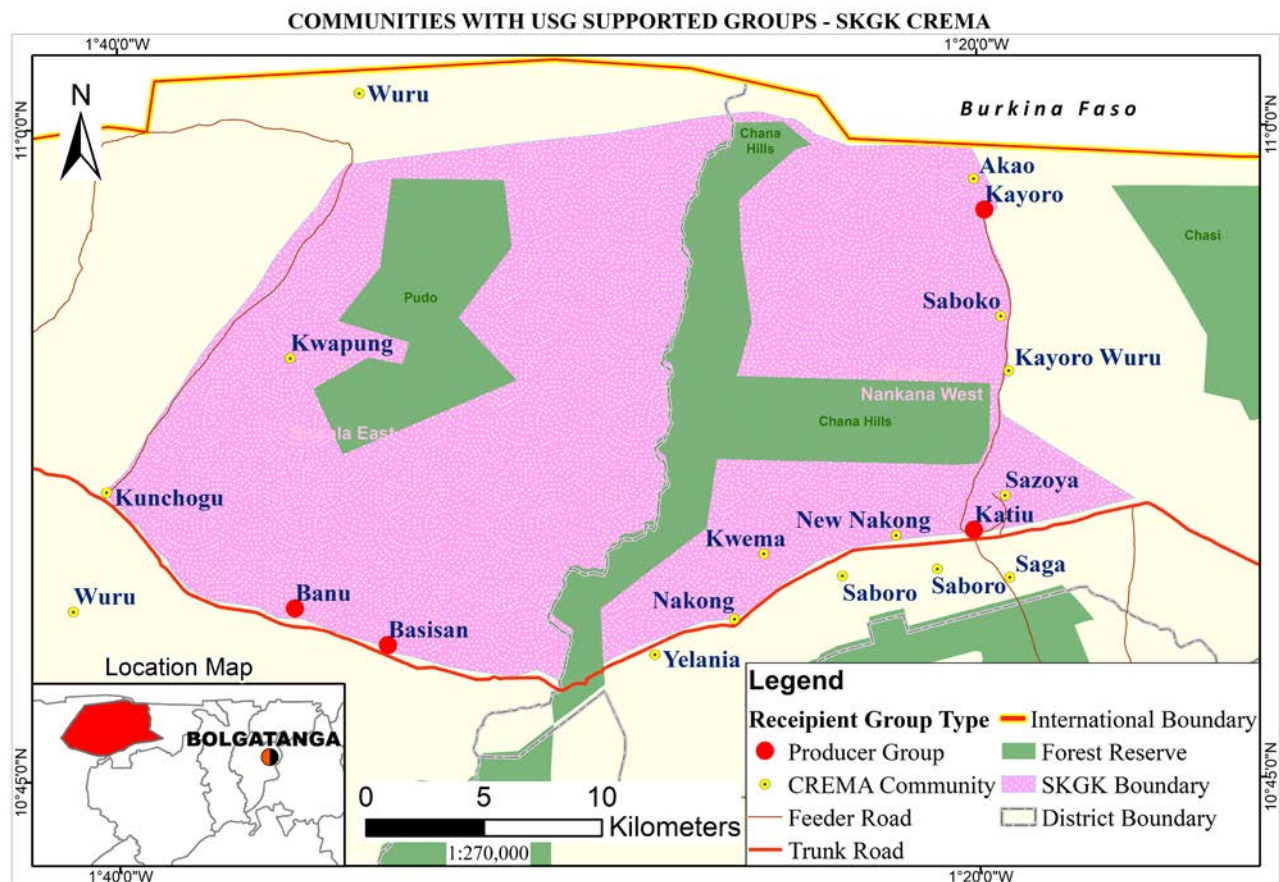
<p>reality on the ground</p> <p>Further facilitation needed</p>	<p>buy-in and makes program more relevant, effective and sustainable</p> <p>v. Support CEC to define, formalize and enable roles of CREMA communities and their residents in the implementation of program activities, and provide feedback through accessible channels consistently</p> <p>vi. Support CEC to define appropriate forum, format and schedule to provide regular updates on program resources, and solicit feedback from the community</p> <p>iv. Support the CEC to develop appropriate tools to assess the gender and cultural issues facing CREMA communities, and a process for incorporating the assessment findings into program</p>	<p>consensus-building techniques with the CEC</p> <p>iv. Incorporate learning from working with the current AgNRM community-driven implementation model to facilitate the definition of CREMA community roles – community-based extension agents (CBEAs), community-based resource persons (CBRPs) and field coordinators (FCs)</p> <p>iv. Adapt gender audit tools with support from AgNRM's Gender Specialist and M&E Manager</p>
<p>18. Project Implementation</p>		
<p>Rationale: Facilitating continual monitoring of CREMA activities</p>		
<p>i. No workplan or budget</p> <p>Activities have not started or are conducted erratically</p>	<p>DORIMON, MWK, B-Y, SKGK</p> <p>i. Work with CEC to develop a work planning process that is centered on the participation of the CEC and CRMCS</p> <p>ii. CEC and CRMCS to develop workplan with budget for key project activities</p> <p>iii. Support the CEC with appropriate tools and processes to monitor the consistency of activity implementation against the workplan, the define timelines and budgets</p> <p>iv. Work with the CEC to develop and implement a monitoring plan, including a process for regular review of data</p> <p>v. CEC to develop and implement a process for adjustment or refinement of project implementation based on monitoring data</p> <p>vi. CEC to identify people with the required skills to implement the activities, and/ or target, design and implement capacity-building programs to meet this need</p>	<p>How will this be done?</p> <p>i. Facilitate work planning process in a forum led by the CEC, based on the CREMA management plan</p> <p>ii. M&E to support the CEC develop or adapt appropriate monitoring tools and processes</p> <p>iii. CREMA community member identified for specific technical task may work as counterpart to AgNRM project staff or another stakeholder opportunity, as appropriate</p> <p>iv. Incorporate aspects of financial planning and organizational management training to support this</p> <p>v. This exercise will follow after these trainings have been delivered</p>
<p>ii. Workplans and budget are created with staff participation</p>	<p>ZUKPIRI</p> <p>i. Work with CEC to develop a work planning process that is centered on the participation of the CEC and CRMCS</p> <p>ii. CEC and CRMCS to develop workplan with budget for key project activities</p>	<p>How will this be done?</p> <p>i. Facilitate work planning process in a forum led by the CEC, based on the CREMA management plan</p>

ANNEX 2: CICA REPORT

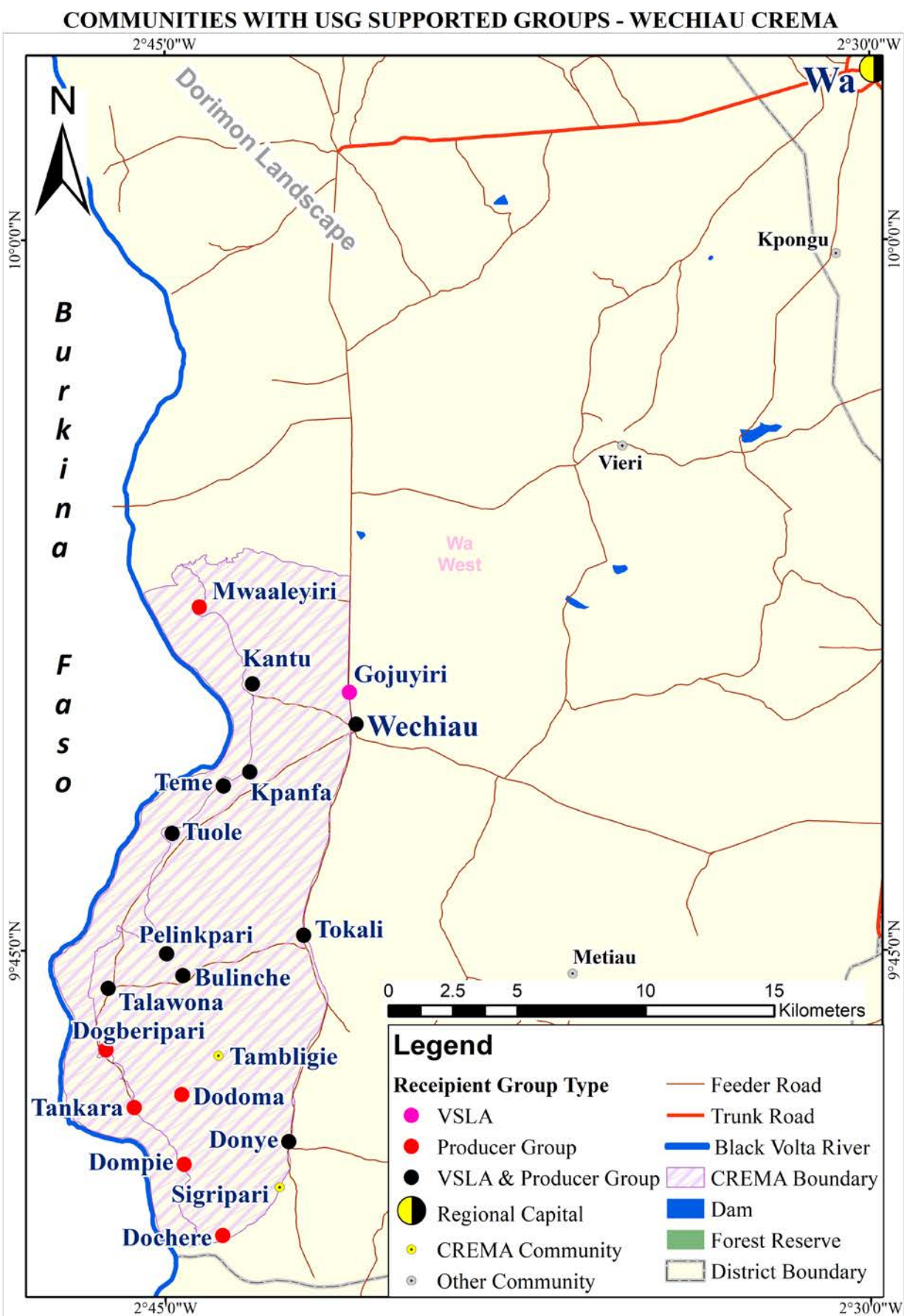
Staffing is incomplete M&E plans are incomplete and data area not used for program revisions	<p>iii. Support the CEC with appropriate tools and processes to monitor the consistency of activity implemetation against the workplan, the define timelines and budgets</p> <p>iv. Work with the CEC to develop and implement a monitoring plan, including a process for regular review of data</p> <p>v. CEC to develop and implement a process for adjustment or refinement of project implementation based on monitoring data</p> <p>v. CEC to identify people with the required skills to implement the activities, and/ or target, design and implement capacity-building programs to meet this need</p>	<p>ii. M&E to support the CEC develop or adapt appropriate monitoring tools and processes</p> <p>iii. CREMA community member identified for specific technical task may work as counterpart to AgNRM project staff or another stakeholder opportunity, as appropriate</p> <p>iv. Incorporate aspects of financial planning and organizational management training to support this</p> <p>v. This exercise will follow after these trainings have been delivered</p>	Who?
WCHS			
<p>iii. Workplans address objectives, targets indicators strategies, timelines, monitoring and budget</p> <p>Project fully and appropriately staffed</p> <p>Monitoring conducted regularly</p> <p>Regular review and revision of data conducted</p>	i. CEC to share experiences with other CREMAs	<p>How will this be done?</p> <p>i. Engage CEC as resource persons in training or forum organized for other CREMAs, as necessary</p>	

ANNEX 3: MAPS OF CREMAS

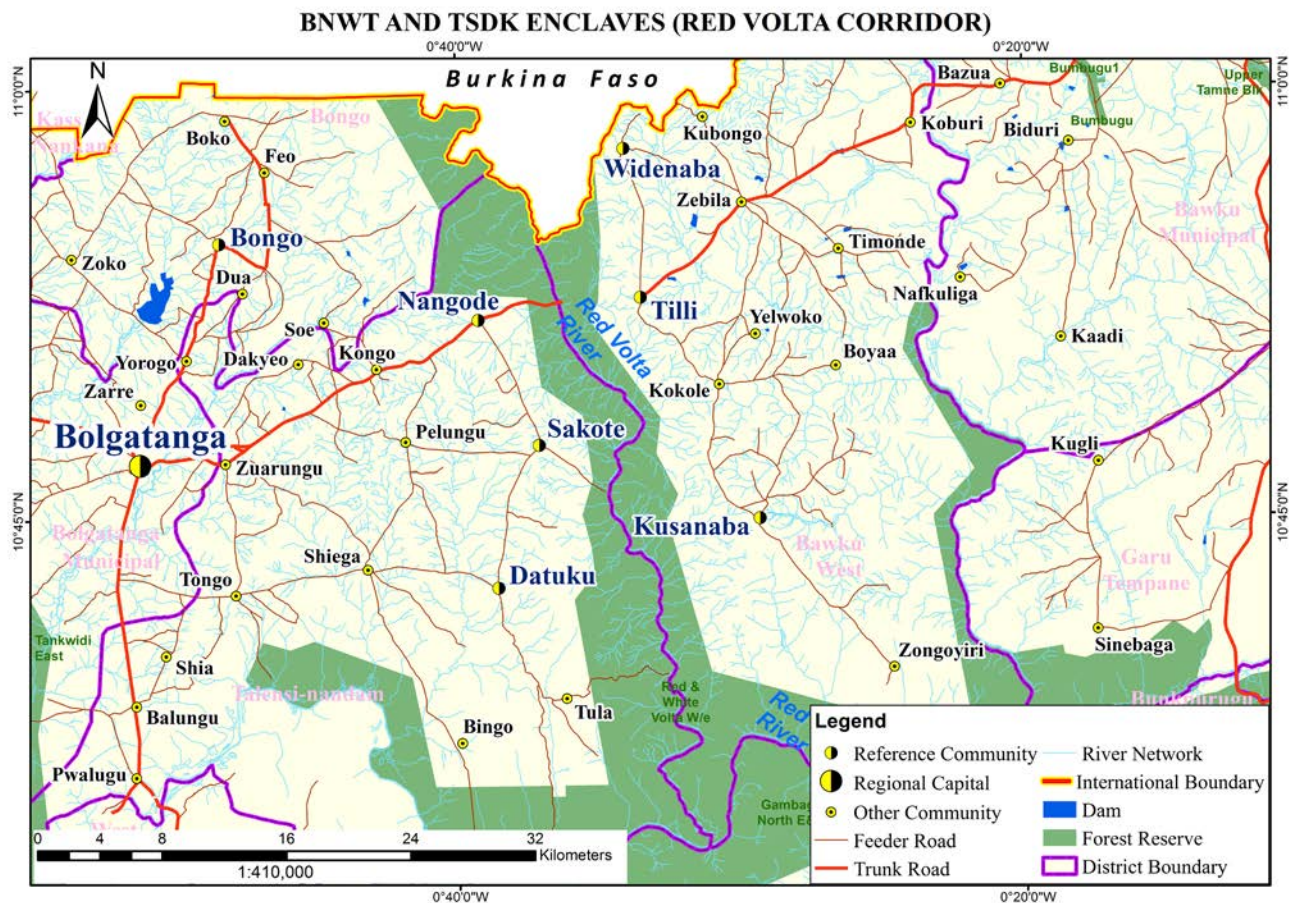
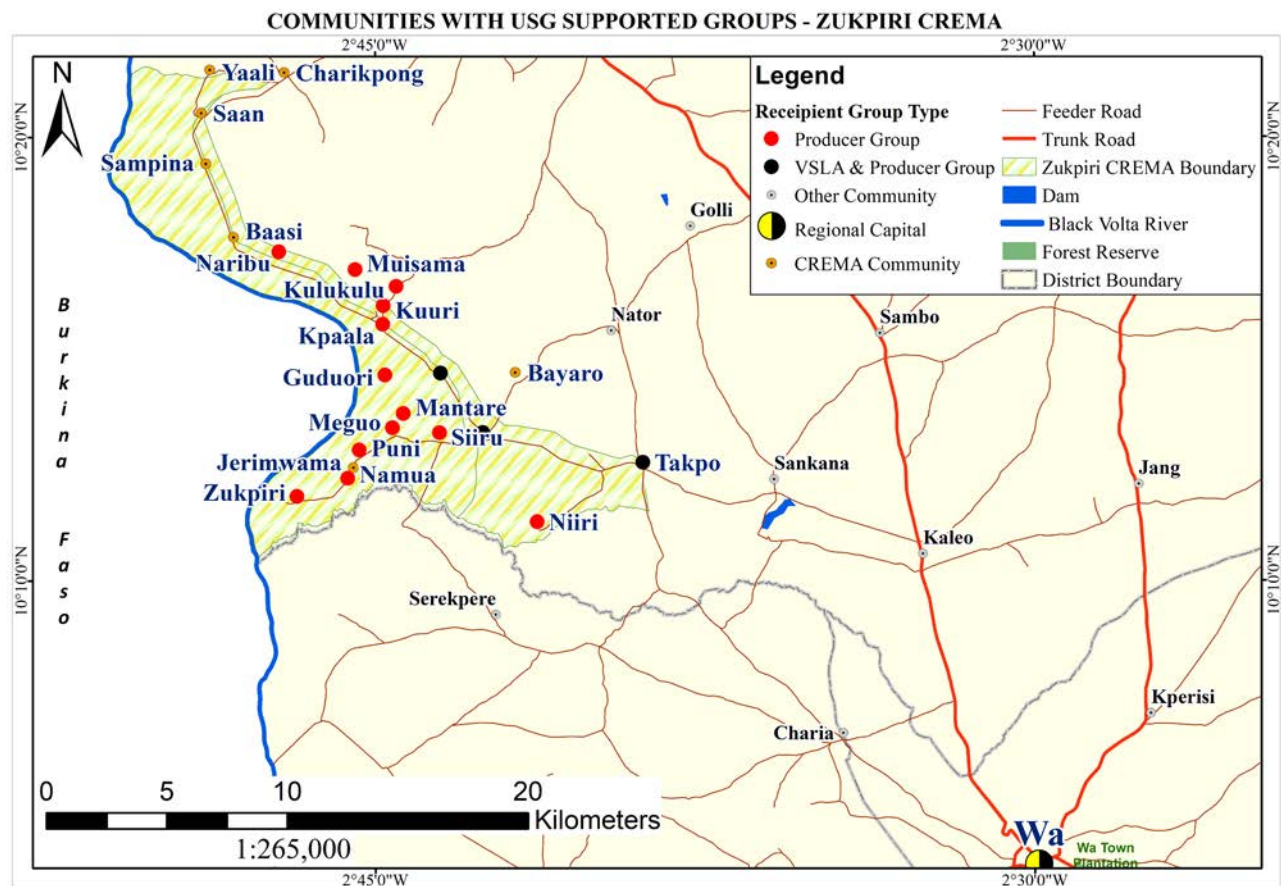




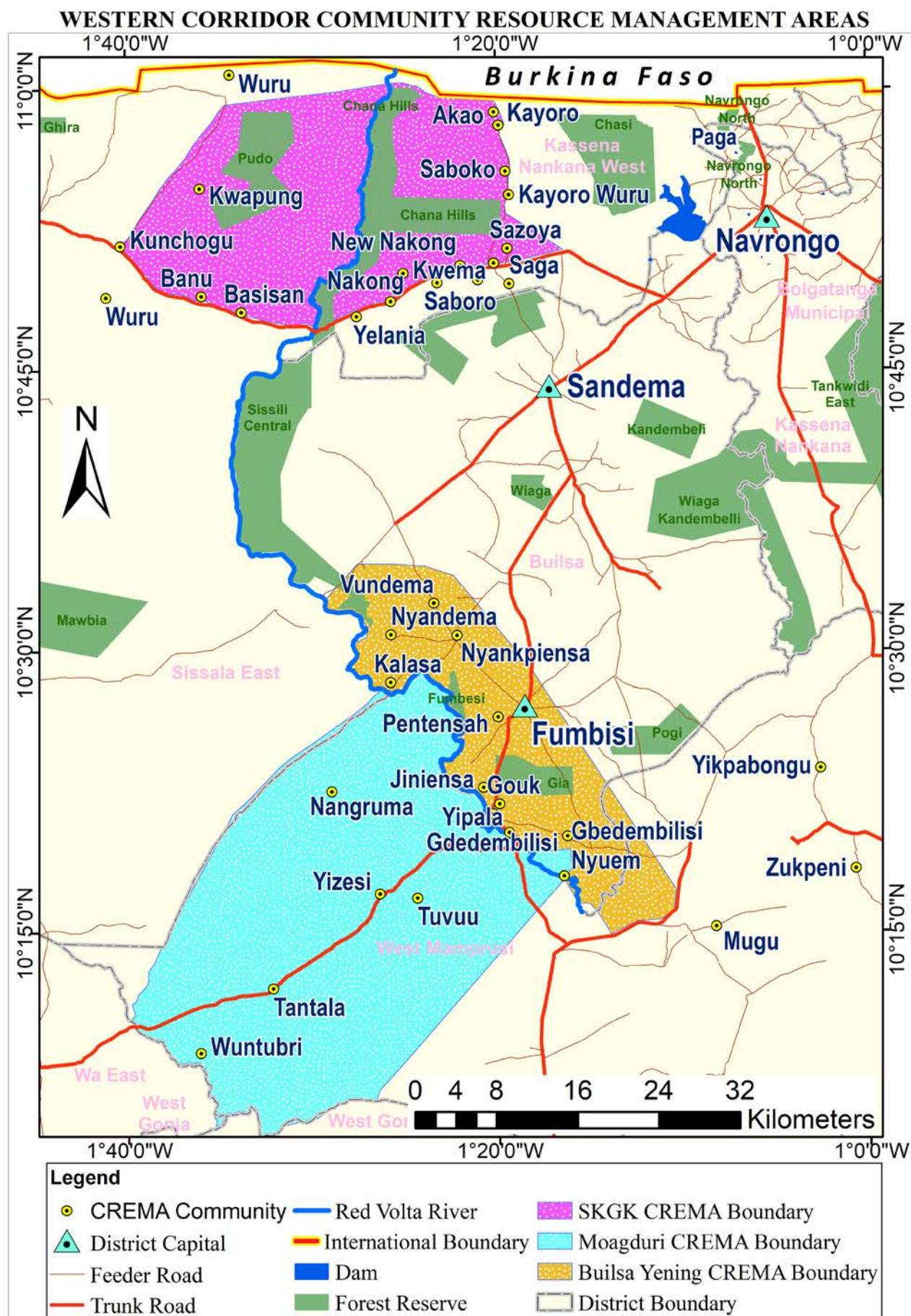
ANNEX 3: MAPS OF CREMAS



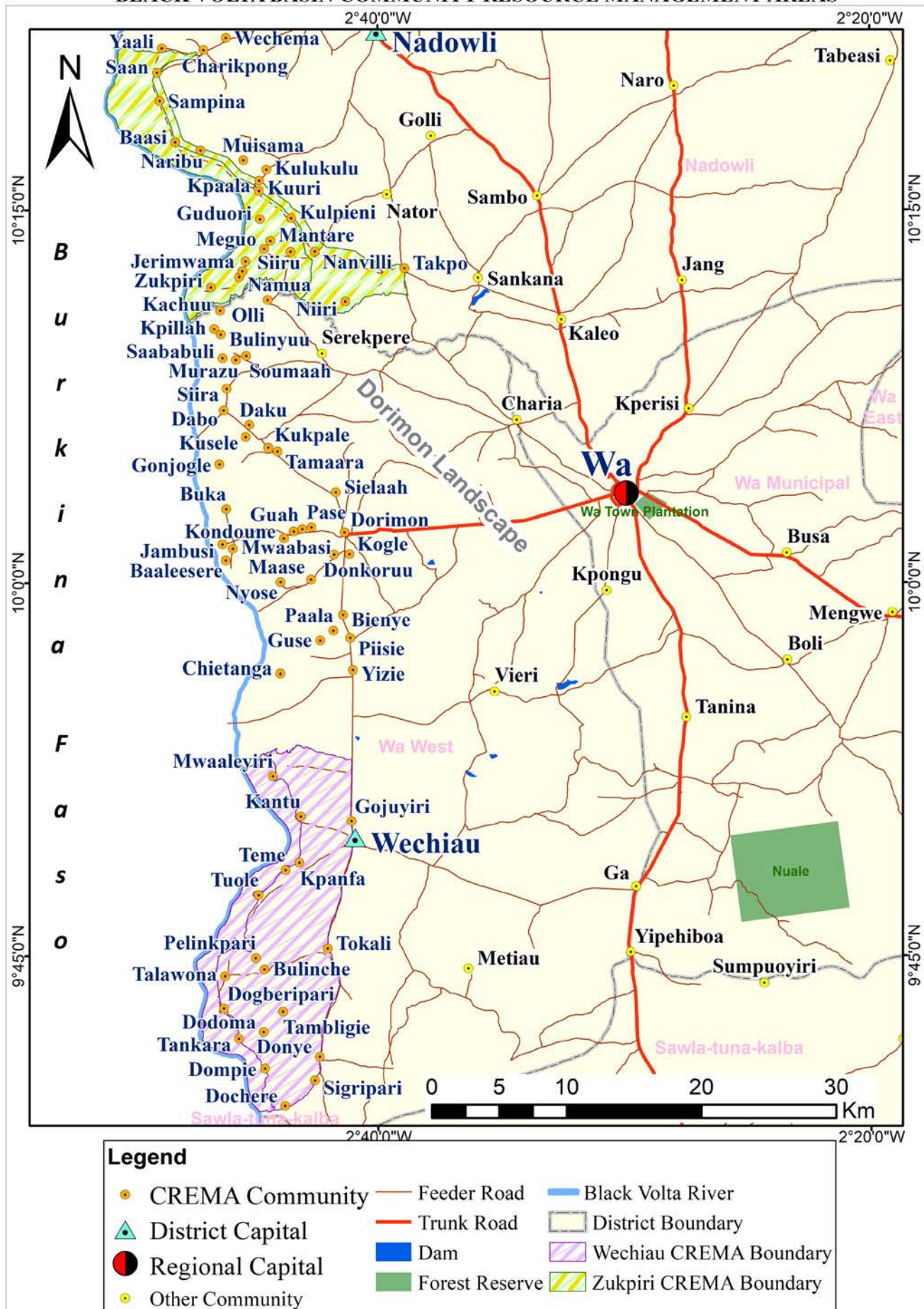
ANNEX 3: MAPS OF CREMAS



ANNEX 3: MAPS OF CREMAS



BLACK VOLTA BASIN COMMUNITY RESOURCE MANAGEMENT AREAS



ANNEX 4: SELECTED AGNRM SUCCESS STORIES

Land tenure security for women inspires sustainable gardening practices

Alima sets herself apart from the crowd



"I am grateful to USAID AgNRM for teaching my community about land tenure security for women. Without them I would never have discovered my abilities in sustainable household gardening; I would never have imagined planting moringa trees and using my newly-learned techniques for improving soil fertility and fighting pest infestations in my garden." - Alima Sulemana

Alima Sulemana, a married mother of five, had a simple dream: to grow a small vegetable garden behind her house in Dorimon, in the Wa West district of Ghana's Upper West region. Though she received support from the Sumbula Village Savings and Loan Association, which conducts various activities to improve members' incomes, she wanted more – improved nutrition for her family and a little extra money from selling produce. However, she found herself facing a larger challenge. As a woman, Alima had little to no control over the land behind her house, making investing time and effort into a vegetable garden unappealing.

Land security is a huge challenge for women like Alima across northern Ghana – especially in rural communities where the value of land is tied to agricultural productivity. In the Upper West region, women play an important role in the agricultural sector and are generally recognized as the main producers and processors of agricultural produce, both for household consumption and livelihood purposes. But despite their enormous contributions, women earn minimal incomes because they have limited access to and control over the land. This lack of tenure and income security affects long term investments both in the land itself and in perennial crops, holding women like Alima back.

But in October 2016, Alima became a beneficiary of the USAID-funded Feed the Future Ghana Agriculture and Natural Resource Management (AgNRM) project. AgNRM works to secure land tenure rights for women and vulnerable groups through negotiation and respect for local norms. Through this USAID support and collaboration with the Dorimon Traditional Council, Alima successfully obtained her own land from her husband, which she now uses for home gardening. Having secured her tenure rights, Alima now dictates what crops grow on her land, with little interference from her husband or relatives.

"I was unaware of a lot of things about home gardening," Alima says. "Now I have a garden where I grow okra, pepper, pumpkin leaves, eggplant, and moringa trees."

ANNEX 4: SELECTED AGNRM SUCCESS STORIES

To ensure her plants grow well, Alima is applying knowledge and skills she gained through AgNRM trainings. In modified zai pits, she adds the compost she makes from a mixture of kitchen waste, animal droppings, ash, and neem leaves to improve soil fertility. She also filters used household water and uses it to water the garden, especially during the dry season.

“Before receiving AgNRM’s support, my husband would at times take over the land for no specific reason. As a result, the land could lie idle for months,” Alima says. “AgNRM explained to my husband the benefits of allowing me to have control of the land and put it into productive use, and he agreed. My husband and I have since seen many benefits and we are very grateful for this support.” The garden has allowed Alima to diversify her family’s diet, providing them with more meal choices and health benefits. By eating more vegetables, the family has even reduced their spending at the local health clinic, since they don’t fall ill very often.

“Previously, we only ate vegetables if we had the money to buy them. But now we can get the vegetables from our home garden we grow ourselves and make choices on what to eat,” she says. “Thanks to USAID, I am now supporting my husband to improve our household’s nutrition and ensure a healthier family life.”

And the garden’s benefits go beyond health. Alima sells fresh moringa leaves and other vegetables from her garden, helping to reduce the family’s economic burden. By using entirely local inputs on farm land management, Alima has also avoided the cost of inorganic fertilizer and pesticides. This additional steady stream of income has enabled her to buy school supplies for her daughters, as well as food and other household items.

Having benefited so much from AgNRM’s work, Alima has become a champion for land tenure rights and improved techniques for home gardening in her community. She is determined to share her experiences with other households, particularly women. So far, she knows of three women in Dorimon who are putting into practice techniques she taught them.

Alima’s husband Sulemana has been supportive and encouraging. He helps her take care of the garden even as he works on the family’s maize and millet fields farther away from home. Alima describes her husband as an honest and hardworking man who takes pride in caring for household needs and who equally recognizes his wife’s support.

The more women and families like Alima and her husband are empowered, communities in rural Ghana will see a vast improvement in health, land security and economic resilience.

Moringa processing diversifies income sources for women Entrepreneurs

Until recently, 45-year-old Nuhu Mariama, a resident of Dorimon, Ghana, had only used moringa leaves for cooking and eating. Like many people in rural communities, she had little to no knowledge about the potential of this “magic tree.” But moringa products are growing in popularity within both local and international markets because of their medicinal and cosmetic values, as well as their nutritional ones. Thanks to the United States Agency for International Development (USAID)-funded Feed the Future Ghana Agriculture and Natural Resource Management (AgNRM) project, Mariama has participated in several moringa diversification trainings, resulting in increased income and better health.

USAID AgNRM supports sustainable economic development and rural livelihoods and strengthens natural resource management in northern Ghana. Project beneficiaries like Mariama have received training on moringa’s nutritional value and product production opportunities, learning how to process moringa into tea, oil, infant feed and cosmetics. Mariama describes her first practical training: “The AgNRM team assembled us in the chief’s palace, and arranged us into groups based on different products. One group was instructed to pound the seeds and boil them until oil was produced; another group ripped and pounded the leaves, then added shea butter and fragrance to produce pomade, soap and ointment. I was surprised seeing the products for the first time.”



“I knew then that I had found greater opportunities to make money from moringa.”
- Nuhu Mariama, shop owner

Within two months of the initial AgNRM training, Mariama felt confident in her ability to produce and sell moringa products. Her biggest challenge was securing the necessary startup capital, but after a few sales, she gradually increased her production and expanded her opportunities by selling in the local weekly markets near her home. Today she sells her products in community marketplaces. Mariama’s strategy quickly paid off, and she has already acquired a supply point in Wa, the Upper West regional capital, after just two months in business.

Mariama also embraced the opportunity to join eleven fellow female beneficiaries to travel to Tamale to participate in a national trade fair. She said the fair taught her how to market her products better and exposed her to other business initiatives in the processing of natural resource products, like air fresheners made from shea butter. “For my products, I made sales of about GHc180.00,” (US \$41.00) she says. “It was an eyeopener and I thank AgNRM for the opportunity.”

Mariama assures her clients that her high-quality moringa products really do work; she tests them herself. She explains that she once used her moringa ointment on a fast-spreading skin rash – both on herself and her child.

“My skin rashes disappeared within a week,” she says. “I could not believe it. I knew then that I had found greater opportunities to make money from moringa.”

As a mother of five, Mariama previously struggled to contribute to the family’s income and keep her family healthy at the same time. Now, with a growing customer base, Mariama hopes to expand her business in the future. Already an entrepreneur, she has owned her own thriving store for several years. She also belongs to Tiehinye Village Savings and Loan Association (VSLA), a micro-finance management group supported by the AgNRM project in the Dorimon Community Resource Management Area. With the VSLA initiative, she contributes weekly to her savings account from her business proceeds.

“I thank AgNRM for this opportunity to generate income and support my family in general,” she said. By spreading awareness of the nutritional and economic values of moringa, the USAID AgNRM project is contributing to improved livelihoods and ensuring food security among women in rural communities across northern Ghana.

Community Natural Resource Conservation Efforts Yield Results for the People of Dorimon Paramountcy

Local communities have high hopes for a new approach to natural resource management

For centuries, communities across northern Ghana have depended on natural resources like shea and dawadawa for their livelihoods. While local resource governance systems led by chiefs and land priests once ensured sustainable use and protection of the environment, modernization, religious diversity and increased demands on land and other natural resources have rendered many of these traditional measures less effective. The Community Resource Management Area (CREMA) approach to natural resources conservation and management not only complements government efforts, but also secures local and external support for community-based initiatives. This method motivates and empowers local people to work across community boundaries and other barriers to jointly manage and share the benefits of sustainable natural resource management.

Since its inception in May 2016, the Feed the Future Ghana Agriculture and Natural Resource Management (AgNRM) project has worked with communities in the Dorimon Paramountcy to ascertain the interest of traditional leaders in forming a CREMA. AgNRM found a ready and willing partner in Dorimon, home of both the largest remaining hippo population in Ghana and a significant population of shea trees. Recognizing the value of these natural resources, traditional leaders and people from nearby communities had begun their own conservation efforts and climate-friendly activities even before the project's support.

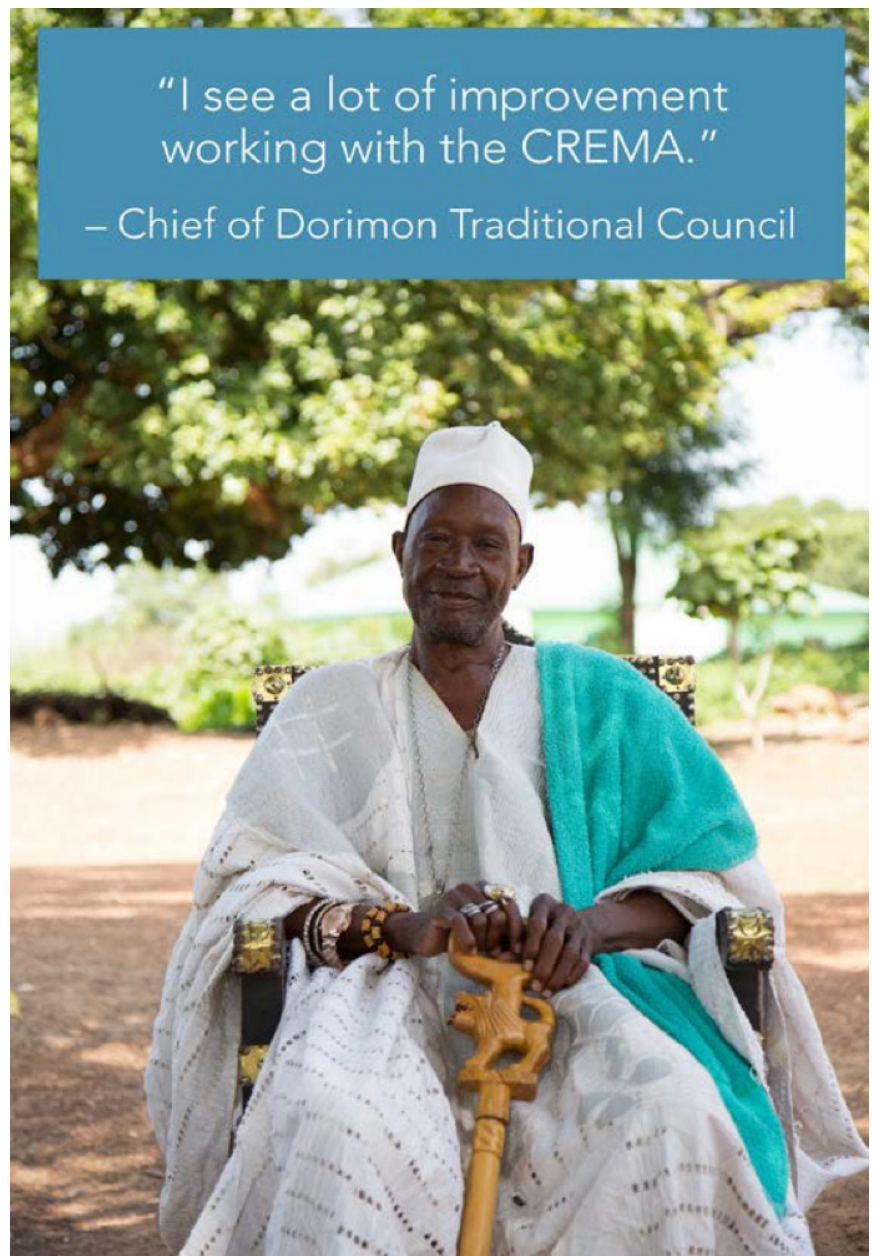
"We have long had specific areas, plant and animal species within the landscape that are protected by traditional norms and practices," explains newly-elected CREMA chairman Naa Ingah Mwiniseori II. "It is a taboo to encroach on a sacred grove, cut a shea tree or kill hippos and crocodiles, according to the rules made by the traditional council to protect these natural resources."

But despite community efforts, the surrounding natural vegetation and riverine areas have been seriously degraded over the years, driving traditional authorities and community members to recognize the need for a new approach to natural resource management.

"What the community started was the development of a green belt along the Black Volta River," says CREMA Secretary Olinah Ababaasah, who is also the assemblyman for Dorimon. "But we were constrained because peoples' livelihoods, in terms of agricultural activities, depended so much on the area we want to protect. AgNRM intervened to provide us with livelihood opportunities and support us to develop new governance structures to help us protect and manage our natural resource base".

AgNRM's support to local communities also helped them catch up with their neighbors in surrounding areas, as explained by CREMA patron Suhimwininye Danaah Gori II, the paramount chief of the Dorimon Traditional Council.

"This CREMA concept has come to us as a timely



ANNEX 4: SELECTED AGNRM SUCCESS STORIES

intervention to help address our efforts to manage our natural resources,” he says. “Our neighbors in Wechiau and Zukpiri have CREMAs and we are left in the middle. AgNRM offered to help bridge the gap and we are grateful.”

In the process of forming the CREMA, the AgNRM team prioritized consultation with stakeholders, especially the chiefs who control most of the land in the area. “We didn’t know how to negotiate with the communities to accept the concept,” explains Mwiniseori. “The AgNRM team discussed with chiefs and people in our communities to accept the broader efforts and benefits of coming together to conserve the environment.”

With AgNRM’s support, Dorimon has put in place the essential governance and management structures required under the CREMA formation process. These new institutions have motivated community members to make decisions about how they want to improve the management of their natural resources. According to Mwiniseori, the new CREMA is still drafting the necessary guiding documents, including the CREMA constitution and by-laws – but with the CREMA governance structures in place, the selected representatives are empowered to make and implement decisions on behalf of the member communities. Because they are particularly involved in the processing of natural resources products in the area, and because the CREMA is democratic in nature, women have been included on CREMA committees at all levels. They will therefore be involved in critical decisions on natural resource governance.

“On an average, females constitute 40 percent of all CREMA representatives,” Mwiniseori explains. “This position of the Queen Mother emphasizes the CREMA’s recognition of the role women play in effective resource conservation and management.” The paramount Queen Mother serves as a voice for the women of the CREMA.

And the Queen Mother is glad to see this work begin. “I see the project as development in all directions,” she says. “It is one of the best things to happen to us women here.” CREMA patron Gori also emphasized the efforts AgNRM has made to empower women by encouraging them to actively participate in livelihood activities and natural resource management issues.

“I must say emphatically that women are even more excited about this project than the men,” he says. “Our women are empowered. I see them produce soap and infant feed from moringa. I see a lot of improvement working with the CREMA, and I thank USAID AgNRM.” AgNRM’s efforts to strengthen natural resource management in northern Ghana have helped Dorimon to take a new approach to managing their landscape and natural resources. In its success, the CREMA not only rewards its people for their initiative and sacrifice, but also inspires other communities in the Black Volta basin to embark on similar initiatives.

ANNEX 4: SELECTED AGNRM SUCCESS STORIES


Dry season gardening builds resilience and bridges the food security and nutrition gap for vulnerable families

How homegrown vegetables are impacting nutrition and income generation

During Ghana's wet season, Karim Amina, a smallholder farmer in Dorimon, relies almost exclusively on family labor to grow groundnuts and maize on a small piece of land. But when the dry season sets in, Amina and her entire family face the challenge of securing sufficient quantities of nutritious food for their meals.

Because farmers like Amina in northern Ghana largely depend on rain-fed agriculture, they are limited to a single harvest following the six-month rainy season. Many households cope with the dry season by shifting to other livelihood activities or seeking temporary employment elsewhere. Some can plant dry season gardens, but since this approach requires a reliable water source, it's not an option available to everyone.

In March 2017, Amina and 55 other women in Dorimon participated in dry season garden activities hosted by the USAID Feed the Future Ghana Agriculture and Natural Resource Management (AgNRM) project. AgNRM is working to improve the food access of vulnerable households by promoting household production of several nutrient-rich crops. From January to April 2017, the women's group in Dorimon grew leafy vegetables such as pumpkin and bean leaves, along with a few other vegetables, on two hectares of land. Using treadle pumps and hoses, Amina and her colleagues relied on a nearby dam to irrigate their crops.



"As a group, we also decided to invest our income in our Village Saving and Loan Association account."

– Karim Amina, smallholder farmer

"Previously, I used to sit idle during the dry season, looking for alternative activities that could help me support my family," Amina says. "AgNRM's dry season garden activities helped me and my colleagues produce nutritious food during the off-season."

Through on-field practical training, Amina and the other participants learned to enrich the soil using environmentally sound, and less expensive, methods, such as applying livestock and poultry manure. AgNRM also organized a participatory cooking demonstration for the women to emphasize the many ways vegetables can be used to prepare their favorite dishes. Amina is excited to have gained this practical knowledge.

"I saw pumpkin leaves for the first time and also learnt about the health benefits of leafy vegetables helping families to grow well," she says. "Normally, we used to grow vegetables only during the rainy season, but we now realized that we can also grow them throughout the year with high yields." Amina and her group harvested a bumper crop of vegetables in April 2017. Group members divided up about 40 percent of the harvest for their own use; the rest was sold in the local market. Amina says:

"We prepared tasty soups with the vegetables we grow on our own, thanks to AgNRM. As a group, we also decided to invest our income in our Village Saving and Loan Association account." Working together in the dry season garden has also instilled a team spirit in the group, Amina explained. She says the group members worked well together and enjoyed the opportunity to discuss other issues and ideas in the process.

Dorimon's dry season garden has been a hit among the women in the community, who look forward to replicating these methods in their own home gardens in the upcoming dry season. But Amina didn't wait to put her newfound knowledge into practice. This farming season, she applied some of the new techniques, like the use of animal manure as fertilizer, on her main farm, with proven results. She explained that other group members did the same.

The women's dry season garden put Dorimon one step closer to AgNRM's goal of improved food security and nutrition for vulnerable Ghanaian communities.

From volunteer to entrepreneur

AgNRM is empowering Ophelia to succeed in her new natural resource product business

As a volunteer teacher, 24-year old Ophelia Afaaro was keen to explore new ways of earning income to support her family while also pursuing her dream of becoming an entrepreneur. So, when the Feed the Future Ghana Agriculture and Natural Resource Management (AgNRM) project team arrived in Nyankpiensah in the Builsa South district of the Upper East region of Ghana, Ophelia saw an opportunity – she would start a business using the natural resource products growing all around her.

With her ambition and determination in-hand, Ophelia, a mom with a young daughter, participated in a natural resource product training session organized in her community by AgNRM. In this training, she learned how to make soap, creams, and other natural resource-based products.

In addition, Ophelia and her colleagues were also trained by AgNRM on the nutritional value of natural resource products, which opened their eyes as to the income generation potential of these natural resources freely growing in and around their communities. They have since been engaged in transforming leaves, seeds, and fruits into a wide array of new products, including cosmetics, teas, oil, and infant feed.

Ophelia in particular, took bold steps to put her newfound knowledge into practice. Today she produces two distinctive natural resource-based products – dawadawa tea and shower gel. Her dawadawa tea provides her customers with a tasty beverage, with a great aroma and good health benefits; and her dawadawa shower gel, which also incorporates shea, tamarind, and moringa, is a gentle and nourishing bathing product.

“I think dawadawa tea and my shower gel are unique products in our local area and in the wider market. Many people are either unaware or have very little knowledge about the value of these tree products, and the variety of ways we can use them. That was certainly true for me before I attended AgNRM’s training sessions,” Ophelia recounted enthusiastically.

After the training, Ophelia felt ready to take on full-scale production but faced a significant challenge; she needed to secure start-up capital. Her mother, Ataanka Afaaro, stepped in to help; she provided Ophelia with the seed money to procure the materials necessary to begin production. Ophelia acknowledges her mother’s role in getting her started: “My mother supported me with the initial investment of USD\$46.00 (Gh¢ 200.00) and also encouraged me to start production since my products were unique; she was convinced they could generate an income in the near future.”

Within a week of producing her first batch of dawadawa tea, Ophelia made a \$19.30 (Gh¢ 85) profit from selling her entire stock. She immediately reinvested her profits to expand her business. With a beaming smile, Ophelia exclaimed: “I was amazed at how quickly I was making a profit. Within a month, I sold all the dawadawa tea and the shower gel and earned USD\$73.00 (Gh¢ 321.00); that is almost four times my monthly stipend as a volunteer teacher.”

Ophelia’s mother owns a shop in their local community, which serves as Ophelia’s first point of sale. Weekly local market days also provide her with a good opportunity to market her products more widely. But she didn’t stop there! This budding entrepreneur traveled to Bolga and secured an outlet for her products in the Upper East regional capital, where she now supplies a larger retail shop.

Ophelia offers one explanation for her quick success as an emerging entrepreneur – her attention to detail: “My products are neatly and uniquely branded as compared to other similar products in the local markets, thanks to the AgNRM’s mentoring and guidance.”

The AgNRM project supports sustainable economic development and rural livelihoods and strengthens natural resource management in northern Ghana. The project is supporting 602 households in the Builsa Yening Community Resource Management Area (CREMA) to improve their livelihoods and to sustainably manage their natural resources.



ANNEX 4: SELECTED AGNRM SUCCESS STORIES

Alice reaps the new promise of shea

Rural communities embrace and adopt improved shea nut quality standards

Since she was a young child, Alice remembers joining other children and women to collect shea, as collecting and processing shea nuts is one of the few commercial activities available to women in Katiu, a community in the Builsa North District of Ghana's Upper East Region. Now thirty-eight-years old and a mother of two, Alice Awuchuba Moses still collects, processes, and sells shea nuts to earn the money she needs to pay school fees, to cover medical costs, and to help feed her family.

While she collects and processes her own shea, her enterprising spirit and determination to maximize her income from shea had already transformed her into a local aggregator, buying as many shea nuts as she could afford from other women in her community and at the local market. She then packed the kernels in 85-kilogram sacks and waited as long as possible to sell them in bulk to middlemen when the price went up.

However, despite these efforts, Alice felt she was missing opportunities to maximize her income from the shea value chain, a dilemma faced by almost all shea nut collectors in northern Ghana. "Before AgNRM showed us best practice methods, I parboiled my shea nuts without following any guidelines or rules. This was the same for most women collecting shea in and around my community. As a result, shea nut buyers never offered us good prices for our produce," Alice lamented.

The Feed the Future Ghana Agriculture and Natural Resource Management (AgNRM) project is targeting women like Alice to improve their earning power by teaching them about shea industry standards and showing them the best practices with regard to the collection and processing of shea kernels. AgNRM's market linkage support is also helping women to negotiate more favorable prices directly with end market buyers, cutting out numerous middlemen. Through improved capacity, awareness, and dialogue, these end buyers are now offering shea processors in Ghana bonuses for high quality kernels.

Alice revealed that she was a bit reluctant to participate in the AgNRM training when it was first organized in her community, but she now acknowledges the value of the training sessions and is grateful for the opportunity offered to her by the project.



"In the past, I just collected the nuts without even thinking to sort the fruit from the debris mixed in; and when it came to parboiling the nuts, I would simply fill the pot to the brim with nuts and water, and leave them boiling away. I never once considered how my actions affected the quality of the nuts! But thanks to USAID's AgNRM project, this season I produced quality nuts and got much better prices this season than I ever have," Alice recounted with enthusiasm.

Aware of AgNRM's efforts to link the women directly to end market buyers, Alice saw an opportunity she wasn't going to pass up. She aggregated 146 bags of quality shea nuts while also making modest purchases from other women both in her community and in neighboring areas who have received AgNRM training on best practices but could not wait to sell their kernels because of their immediate need for cash.

"I found entering the market in this way to be very exciting," Alice shares; and with a smile she adds: "And I got a very good price! The buyer paid me US\$19.77 (GH¢ 85) per bag when the prevailing market price was between US\$16.28 and US\$17.50 (GH¢ 70-75). I thank AgNRM for such a fantastic opportunity."

And Alice stands to earn even more from her recent shea sales. She and her colleagues are anticipating a premium payment of US\$4.70 per bag (GH¢ 20) after their nuts are tested to confirm that they meet market standards. Confident that she and the other women will receive the premium, Alice says: "That will be a huge source of extra income for me and my family. Can you imagine! I am likely to earn an additional US\$679.00 (GH¢ 2,920) for my 146 sacks – in a single season, it is unbelievable!"

Alice's story exemplifies how women are earning more money with the support of USAID's AgNRM project, thereby improving their household's well-being and resilience, as well as building a sustainable future for the shea industry.

ANNEX 5: AGNRM DOCUMENTS POSTED TO DEC

TABLE 6: LIST OF DOCUMENTS POSTED TO THE DEC

Deliverable	Link	Author (Organization)
Year 1 Workplan	https://pdf.usaid.gov/pdf_docs/PA00TGB4.pdf	Winrock International
Year 2 Workplan	https://pdf.usaid.gov/pdf_docs/PA00TGB5.pdf	Winrock International
Year 3 Workplan	https://pdf.usaid.gov/pdf_docs/PA00TGB6.pdf	Winrock International
Annual Progress Report FY2016	https://pdf.usaid.gov/pdf_docs/PA00TG9S.pdf	Winrock International
Annual Progress Report FY2017	https://pdf.usaid.gov/pdf_docs/PA00TG9T.pdf	Winrock International
Quarterly Progress Report FY2016 Q3	https://pdf.usaid.gov/pdf_docs/PA00TG9V.pdf	Winrock International
Quarterly Progress Report FY2017 Q1	https://pdf.usaid.gov/pdf_docs/PA00TG9X.pdf	Winrock International
Quarterly Progress Report FY2017 Q2	https://pdf.usaid.gov/pdf_docs/PA00TG9W.pdf	Winrock International
Quarterly Progress Report FY2017 Q3	https://pdf.usaid.gov/pdf_docs/PA00TG9Z.pdf	Winrock International
Quarterly Progress Report FY2018 Q1	https://pdf.usaid.gov/pdf_docs/PA00TGB1.pdf	Winrock International
Quarterly Progress Report FY2018 Q2	https://pdf.usaid.gov/pdf_docs/PA00TGB2.pdf	Winrock International
Quarterly Progress Report FY2018 Q3	https://pdf.usaid.gov/pdf_docs/PA00TGB3.pdf	Winrock International
Monitoring, Evaluation, and Learning Plan	https://pdf.usaid.gov/pdf_docs/PA00TGB7.pdf	Winrock International
AgNRM Baseline Study Report	https://pdf.usaid.gov/pdf_docs/PA00TGB8.pdf	Winrock International, Bureau of Integrated Rural Development
Ghana AgNRM Strategic Communications Plan	https://pdf.usaid.gov/pdf_docs/PA00TGBC.pdf	Winrock International
Communication Training Manual for AgNRM Media Partners	https://pdf.usaid.gov/pdf_docs/PA00TGBB.pdf	Winrock International
Gender Integration Strategy in Agriculture and Natural Resources Management in Northern Ghana	https://pdf.usaid.gov/pdf_docs/PA00TGBG.pdf	Winrock International
Land Tenure and Natural Resource Access in Northern Ghana – With a focus on women	https://pdf.usaid.gov/pdf_docs/PA00TGBQ.pdf	Center for Conflict Transformation and Peace Studies (CECOTAPS)
Assessing the Availability of Natural Resource Products in the CREMAs	https://pdf.usaid.gov/pdf_docs/PA00TGBM.pdf	TechnoServe
Natural Resource Product Analysis - Shea Roadmap	https://pdf.usaid.gov/pdf_docs/PA00TGBP.pdf	TechnoServe
NRP sector analysis: Moringa, Tamarind and Dawadawa for the Ghana Agriculture and Natural Resource Management (AgNRM) Project	https://pdf.usaid.gov/pdf_docs/PA00TGBN.pdf	TechnoServe
Financing Options for Natural Resource Products in Community Resource Management Areas	https://pdf.usaid.gov/pdf_docs/PA00TGBF.pdf	TechnoServe
An Assessment of Water Sources Technologies, Practices, Services and Products for Dry Season Gardening in Thirteen Communities in Northern Ghana	https://pdf.usaid.gov/pdf_docs/PA00TGBR.pdf	Winrock International
Ecosystem Valuation Background Paper for Northern Ghana	https://pdf.usaid.gov/pdf_docs/PA00TGBD.pdf	Winrock International
Northern Ghana Land Use Ecosystem Service and Economic Valuation Study	https://pdf.usaid.gov/pdf_docs/PA00TGBK.pdf	Winrock International
Group Capacity Building Training Manual	https://pdf.usaid.gov/pdf_docs/PA00TGBH.pdf	Winrock International
Climate Smart Agriculture Strategy	https://pdf.usaid.gov/pdf_docs/PA00TGB9.pdf	Winrock International
Shea Kernel Roasting Improvement Project	https://pdf.usaid.gov/pdf_docs/PA00TGBJ.pdf	Winrock International, TechnoServe

ANNEX 6: SPECIES LISTS FROM BIOMONITORING SURVEYS

TABLE 7: LIST OF RARE SPECIES OF BIRDS FOR 2018
DRY SEASON MONITORING ALONG THE BLACK VOLTA CORRIDOR

	Species	CREMA	Status
1	Bateleur	Wechiau	Near threatened
2	Blue Throat	Wechiau	Least concern
3	Brown-Back Woodpecker	Wechiau	Least concern
4	Purple Heron	Wechiau	Least concern
5	Red-Necked Buzzard	Wechiau	Least concern
6	Cardinal Woodpecker	Wechiau	Least concern
7	Red-Winged Pytilia	Wechiau	Least concern
8	European Turtle Dove,	Dorimon	Vulnerable
9	Short-Toed Snake Eagle	Dorimon	Least concern
10	Speckle-Fronted Weaver	Dorimon	Least concern
11	Wooly-Necked Stork	Zukpiri	Vulnerable
12	Verreaux's Eagle Owl	Zukpiri	Least concern
13	Squacco Heron	Zukpiri	Least concern
14	Hooded Vulture	Zukpiri	Critically endangered
15	Black-Bellied Bustard	Zukpiri	Least concern
16	Common Quail	Zukpiri	Least concern

TABLE 8: BIRDS SPECIES RECORDED FOR THE FIRST TIME
ALONG THE BLACK VOLTA CORRIDOR

	Species	CREMA	IUCN Redlist status
1	Bateleur	Wechiau	Vulnerable
2	Verreaux's Eagle Owl	Zukpiri	Least concern
3	Blue Throat	Wechiau	Least concern
4	European Turtle Dove	Dorimon	Vulnerable
5	African Mourning Dove	Zukpiri	Least concern
6	Cardinal Woodpecker	Wechiau	Least concern
7	Chestnut-backed Sparrow Lark	Wechiau	Least concern
8	Purple Heron	Wechiau	Least concern
9	Red-necked Buzzard	Wechiau	Least concern
10	Red-winged Pytilia	Wechiau	Least concern
11	Short-toed Snake Eagle	Dorimon	Least concern
12	Wolly-necked Stock	Zukpiri	Vulnerable
13	Squacco Heron	Zukpiri	Least concern
14	Black-bellied Bastard	Zukpiri	Least concern
15	Hooded Vulture	Wechiau	Critically endangered
16	Common quail	Zukpiri	Least concern

ANNEX 6: SPECIES LISTS FROM BIOMONITORING SURVEYS

	Species	CREMA	IUCN Redlist status
17	European Reed Warbler	Wechiau	Least concern
18	Lavender Waxbill	Dorimon	Least concern
19	Northern Grey-headed Sparrow	Zukpiri	Least concern
20	Pied Flycatcher	Wechiau	Least concern
21	Snowy-crowned robbinchat	Wechiau	Not listed
22	Spur-winged Lapwing	Zukpiri	Least concern
23	Violet barbet	Zukpiri	Not listed
24	Western Olivaceous Warbler	Wechiau	Not listed
25	Wood Sandpiper	Zukpiri	Least concern

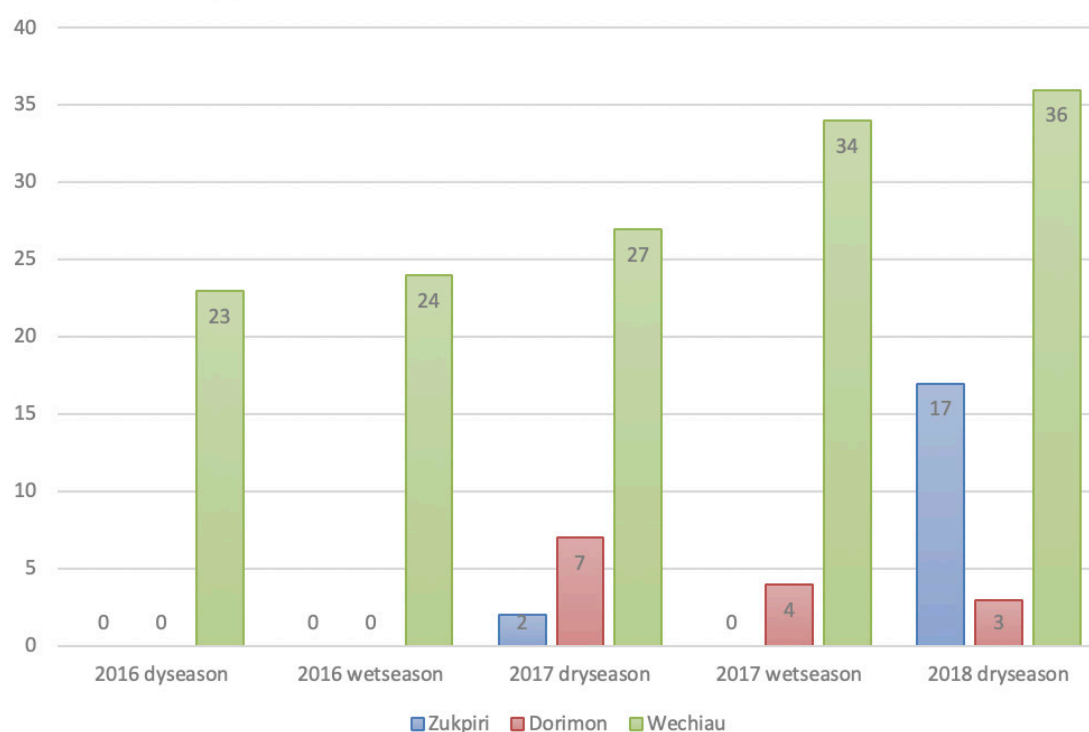
TABLE 9: SEASONAL HIPPO COUNTS FROM THE BVC CREMAS (2016-2018)

	Dry season 2018	Wet Season 2017	Dry Season 2017	Wet Season 2016	Dry Season 2016
Dorimon	3	4	7	---	---
Wechiau	36	34	27	24	23
Zukpiri	17	0	2	---	---
TOTAL	56	38	36	*24	*23

---indicates that no monitoring was conducted in that time period.

*indicates that total number is only representative of Wechiau.

Hippo counts in the three CREMAs from 2016 to date





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