

Document: EB 2013/LOT/G.17
Date: 8 November 2013
Distribution: Public
Original: English

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Enabling poor rural people
to overcome poverty

President's report on proposed grants under the global/regional grants window to CGIAR- supported international centres

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Contents

Abbreviations and acronyms	i
Recommendation for approval	1
Part I – Introduction	1
Part II – Recommendation	2

Annexes

I. International Institute of Tropical Agriculture (IITA): Enhancing the Competitiveness of High-Quality Cassava Flour Value Chains in West and Central Africa	4
II. International Center for Agricultural Research in the Dry Areas (ICARDA): Integrated Agricultural Production Systems for the Poor and Vulnerable in Dryland Areas	9
III. International Center for Tropical Agriculture (CIAT): Increasing Food Security and Farming System Resilience in East Africa through Wide-scale Adoption of Climate-smart Agricultural Practices	13
IV. International Water Management Institute (IWMI): Opportunities to Enhance Smallholder Agriculture in sub-Saharan Africa through Sustainable Water, Land and Ecosystem Management	18

Abbreviations and acronyms

AR4D	agricultural research for development
AWM	agricultural water management
CCAFS	Program on Climate Change, Agriculture and Food Security
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CSA	climate-smart agriculture
FAO	Food and Agriculture Organization of the United Nations
HQCF	high-quality cassava flour
ICARDA	International Center for Agricultural Research in the Dry Areas
IITA	International Institute of Tropical Agriculture
IWMI	International Water Management Institute
NRCRI	National Root Crops Research Institute
WCA	West and Central Africa
WLE	water, land and ecosystems

Recommendation for approval

The Executive Board is invited to approve the recommendation for grants under the global/regional grants window to CGIAR-supported international centres as contained in paragraph 8.

President's report on proposed grants under the global/regional grants window to CGIAR-supported international centres

I submit the following report and recommendation on four proposed grants for agricultural research and training to Consultative Group on International Agricultural Research (CGIAR)-supported international centres in the amount of US\$8 million.

Part I – Introduction

1. This report recommends the provision of IFAD support to the research and training programmes of the following CGIAR-supported international centres: the International Institute of Tropical Agriculture; the International Center for Agricultural Research in the Dry Areas; the International Center for Tropical Agriculture; and the International Water Management Institute.
2. The documents of the grants for approval by the Executive Board are contained in the annexes to this report:
 - (i) International Institute of Tropical Agriculture (IITA): Enhancing the Competitiveness of High-Quality Cassava Flour Value Chains in West and Central Africa;
 - (ii) International Center for Agricultural Research in the Dry Areas (ICARDA): Integrated Agricultural Production Systems for the Poor and Vulnerable in Dryland Areas;
 - (iii) International Center for Tropical Agriculture (CIAT): Increasing Food Security and Farming Systems for Resilience in East Africa through Wide-scale Adoption of Climate-Smart Agricultural Practices
 - (iv) International Water Management Institute (IWMI): Opportunities to Enhance Smallholder Agriculture in sub-Saharan Africa through Sustainable Water, Land and Ecosystem Management
3. The objectives and content of these applied research programmes are in line with the evolving strategic objectives of IFAD and the Fund's policy for grant financing.
4. The overarching strategic goal that drives the Revised IFAD Policy for Grant Financing, which was approved by the Executive Board in December 2009, is to promote successful and/or innovative approaches and technologies, together with enabling policies and institutions, that will support agricultural and rural development, empowering poor rural women and men in developing countries to achieve higher incomes and improved food security.
5. The policy aims to achieve the following outputs: (a) innovative activities promoted and innovative technologies and approaches developed in support of IFAD's target group; (b) awareness, advocacy and policy dialogue on issues of importance to poor rural people promoted by, and on behalf of, this target group; (c) capacity of partner institutions strengthened to deliver a range of services in support of poor rural people; and (d) lesson learning, knowledge management and dissemination of information on issues related to rural poverty reduction promoted among stakeholders within and across regions.

6. The programmes are in line with the goal and outputs of the revised IFAD grant policy. They are also consistent with the IFAD Strategic Framework 2011-2015, as they will contribute to achieving several of its strategic objectives. In terms of thematic areas, they are particularly relevant to: natural resources and economic asset bases for poor rural women and men; market transformation; and access for poor rural women and men to services to reduce poverty, improve nutrition and raise incomes. The programmes will enable poor rural people and their organizations to manage profitable, sustainable and resilient farm and non-farm enterprises or take advantage of decent work opportunities. They will also create enabling institutional and policy environments to support agricultural production and the full range of related non-farm activities.
7. The proposed grants will be disbursed through the CGIAR Fund, which is a multi-donor trust fund administered by the World Bank, as Trustee, and governed by the CGIAR Fund Council.¹ Channelling a grant through the CGIAR Fund Trustee entails the inclusion of an incremental 2 per cent charge, payable as a cost-sharing contribution to the World Bank, in its capacity as Trustee of the CGIAR Fund, as required by the Fund Council's rules and regulations, in addition to the recipient's overheads.

Part II – Recommendation

8. I recommend that the Executive Board approve the proposed grants in terms of the following resolutions:

RESOLVED: that the Fund, in order to finance, in part, the programme for Enhancing the Competitiveness of High-Quality Cassava Flour Value Chains in West and Central Africa, shall provide, through the Trustee of the CGIAR Fund, a grant not exceeding two million five hundred thousand United States dollars (US\$2,500,000) to the International Institute of Tropical Agriculture upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board herein.

FURTHER RESOLVED: that the Fund, in order to finance, in part, the programme for Integrated Agricultural Production Systems for the Poor and Vulnerable in Dryland Areas, shall provide, through the Trustee of the CGIAR Fund, a grant not exceeding one million five hundred thousand United States dollars (US\$1,500,000) to the International Center for Agricultural Research in the Dry Areas upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board herein.

FURTHER RESOLVED: that the Fund, in order to finance, in part, the programme for Increasing Food Security and Farming Systems for Resilience in East Africa through Wide-scale Adoption of Climate and Smart Agricultural Practices, shall provide, through the Trustee of the CGIAR Fund, a grant not exceeding two million United States dollars (US\$2,000,000) to the International Center for Tropical Agriculture upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board herein.

¹ The Council is the CGIAR Fund's decision-making body representing all CGIAR Fund donors.

FURTHER RESOLVED: that the Fund, in order to finance, in part, the programme for Water, Land and Ecosystems in Africa, shall provide, through the Trustee of the CGIAR Fund, a grant not exceeding two million United States dollars (US\$2,000,000) to the International Water Management Institute upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board herein.

Kanayo F. Nwanze
President

International Institute of Tropical Agriculture (IITA): Enhancing the Competitiveness of High-Quality Cassava Flour Value Chains in West and Central Africa

I. Background

1. Nigeria is the largest producer of cassava in the world. It is estimated that nearly 69 per cent of Nigerian farmers are involved in cassava production. Most are small-scale farmers with an average farm holding of half a hectare. They cultivate cassava as a subsistence crop, or for the traditional food market, but have little commercial orientation. Cassava has low average yields per hectare, although yields have gradually increased over the last three decades (from 10.5 metric tons per hectare in the early 1970s to a reported 14.3 metric tons per hectare in 2011). Production increases were a result of the widespread adoption of cassava varieties with high yields, disease resistance, good product quality and early maturity. The varieties were developed by IITA, in partnership with the Nigerian National Root Crops Research Institute (NRCRI) and other stakeholders, and distributed throughout Nigeria from 1987 to 1996 through the IFAD-supported Roots and Tubers Expansion Programme.
2. In Nigeria, 90-95 per cent of the cassava produced is used as food in a variety of forms, and 5-10 per cent is used as secondary industrial material in the form of high-quality cassava flour (HQCF), starch, glucose syrup, etc. The Government of Nigeria recognizes the potential of cassava flour in bread-making and has made repeated efforts to develop the sector. This has included adopting a policy that the bread industry should replace a minimum of 10 per cent of wheat flour with HQCF. This would create a potential demand of 220,000 metric tons of cassava per year for the HQCF, requiring the equivalent of 880,000 metric tons of fresh roots to be supplied by the country's smallholder farmers. The Government's longer-term objective is to increase the ratio of cassava-wheat composite flour to 40:60.

II. Rationale and relevance to IFAD

3. The programme will build on gains made through past IFAD-funded agricultural research for development (AR4D) investments in cassava in Nigeria. It will test processing technologies and replicate and scale up successful ones to other regions of sub-Saharan Africa. The aim is to find new uses for cassava both in the home and commercially, in order to enhance household food security, reduce rural poverty, create employment and generate savings on foreign exchange expenditure on food imports. To develop new marketing options for cassava, IITA, in collaboration with national institutions, has tested different approaches for vertical integration of smallholders to markets through small-scale processing, development of new food products and innovative marketing strategies. One simple processing technology transforms cassava roots into high-quality unfermented cassava flour. This flour is safe and suitable for making a composite bread flour to be used in bread-making, and it could be an important way of increasing the competitiveness of the cassava sector. Within the West and Central Africa (WCA) region, the Government of Nigeria has already taken the initiative and intends to adopt the production of cassava-wheat composite flour bread as a policy. Through the programme, it is hoped that other countries in the region will adopt similar policies. The programme will demonstrate the viability, marketability and profitability of the composite flour, and its potential contribution to improving rural livelihoods, food security and incomes, and creating rural jobs in West and Central Africa. Cassava flour is an important alternative use of cassava and is key to accelerating the commercialization of the sector, including through IFAD-funded loan programmes in the region.

III. The proposed programme

4. The overall goal of the programme is to achieve food security and poverty reduction through the enhanced use of agricultural knowledge and innovations. The programme's objectives are to:
 - (a) Support the generation, dissemination and adoption of improved technologies for cassava production and processing;
 - (b) Develop and pilot-test integrated best-bet options for HQCF production, processing and marketing, including the promotion of market access for secondary products; and
 - (c) Develop and promote evidence-based models for sustainable value chain development for African agricultural commodities, using HQCF production and processing as a model.
5. The target group will consist of stakeholders along the HQCF value chain. These include smallholder farmers and farmers' associations, young people involved at all levels along the cassava value chain, farmers-cum-processors, producers, farm input suppliers, selected cassava flour millers, bakeries, transporters, food regulatory agencies, researchers, extension agents and consumers.
6. The three-year programme is organized into three strategic research themes:
 - (a) **Systems analysis and synthesis**, which provides an analytical framework, covering institutions and stakeholders, for identifying alternative trajectories, bottlenecks and opportunities for addressing system-level outcomes of CGIAR's strategy and results framework.
 - (b) **Integrated systems improvement**, comprising integrative field and socio-economic research aspects of the programme, including market integration, value-added products, availability of proven technologies and farm inputs, access to commodity markets and the social implications of stronger market integration.
 - (c) **Scaling up and institutional innovation**, which advances the development outcomes within action areas to expand institutional capacities and effectiveness; provides formal opportunities for women, young people and vulnerable groups; adapts and optimizes proven technology transfer pathways; and provides supportive infrastructure.

IV. Expected outputs and benefits

7. The programme has five expected outputs:
 - **Analysis and synthesis of the structure and performance of the Nigerian and regional cassava sectors.** This will include production and processing aspects, and identification of interventions to improve the performance of sector agents and vertically integrate them to market opportunities;
 - **Increased productivity of cassava roots.** This will involve the scaling-up of successful market-oriented HQCF production and processing innovations to transform the value chain from ad hoc to full commercial businesses;
 - **Processing and improved technical usability of HQCF.** The programme will support the application and adaptation of proven, commercially successful market-oriented HQCF processing and quality management innovations to ensure a quality product as per market requirements;
 - **Market development of HQCF.** This will involve the development of an effective marketing strategy and institutional mechanisms for durable HQCF

and product marketing, and an appropriate policy framework to transform the Nigerian cassava sector with a view to replication in other WCA countries.

- **Knowledge documentation and sharing.** The programme will identify, characterize and measure the impact of the evolving scale-based techniques for intensified production, processing and marketing, and the institutional innovations that underpin equitable market integration of cassava producers, processors and traders, including in IFAD-financed development projects in the region.

8. **Benefits.** These include:

- Improved performance of the entire HQCF value chain to optimize incomes for all value chain actors;
- A more equitable distribution of the benefits to all HQCF value chain actors, with a focus on gender equity;
- Improved capacity of HQCF value chain actors to take up innovations that will increase their incomes; and
- Identification and exploitation of multiple uses of cassava for improved livelihoods.

V. Implementation arrangements

9. The programme will be part of an IITA programme in support of the humid tropics. It will be implemented in partnership with national agricultural research systems, the private sector, NGOs and universities, with support from CGIAR. Collaborating NGOs will be from among those already acting as implementing partners in IFAD-funded operations in WCA. A programme steering committee (PSC) will be headed by the CGIAR research programme director and include the project coordinator and representatives from IITA, NRCRI and the University of Ibadan; it will invite project management teams of IFAD-supported development programmes (particularly the Value Chain Development Programme, the Rural Finance Institutions Building Programme, and the Community-based Natural Resource Management Programme – Niger Delta) to secure grant-loan synergy. The PSC will review, amend and approve annual workplans and budgets and annual reports (technical and financial). Internally, six-month progress reports on all programme activities will be provided to the programme management as the basis for an annual progress report and financial reports to be provided to IFAD. IFAD will review the annual reports and provide comments/recommendations as appropriate.
10. The programme will be implemented in full compliance with IFAD financial management procedures and guidelines on procurement, accounting, financial reporting and audit, and with specific fiduciary arrangements and requirements. A contribution agreement was entered into between IFAD and the World Bank (as CGIAR Fund Trustee) in December 2012, setting out the terms and conditions for the administration of the grant by the Trustee. A grant implementation agreement will also be entered into between IFAD and IITA, establishing the implementation modalities of the programme, as well as detailed fiduciary arrangements.
11. Grant funds will be transferred in instalments to the recipient, through the Trustee (World Bank), conditional to the contribution agreement and the grant implementation agreement. Disbursements will be made on the basis of withdrawal applications from the Trustee. The first advance will be supported by an approved annual workplan and budget (AWP/B) and, for subsequent instalments, by a statement of expenditures from the recipient and the annual audited financial statements of the recipient. The first advance will include the amount to be transferred by the Trustee to the recipient covering the expenditures approved in the relevant AWP/B, plus the 2 per cent charge to the grant budget to be retained by the Trustee payable as a cost-sharing percentage agreed by all donors to cover,

inter alia, the cost of independent quality assurance, external audit and independent evaluation arrangements.

12. Based on its experience, IITA will form partnerships with NGOs to organize farmers into producer groups and train them in crop production, sustainable agricultural practices and management skills. NGOs will have a specific focus on young people involved at any level of the cassava value chain. NRCRI will be responsible for facilitating the multiplication of planting materials and provide facilities for farmer training, with the IITA Youth Agripreneurs Programme expected to operate from these facilities. Other collaborating partners will include private-sector players, specialized universities, industries and equipment suppliers, who will contribute to activities at different levels of the value chain, and to production and processing research, product development, gender mainstreaming, socio-economic studies and training. Value chain stakeholders will access finance from commercial banks to finance their investments.

VI. Indicative programme costs and financing

13. The total programme cost over three years is US\$3.5 million, of which US\$2.5 million from IFAD and US\$1.0 million from CGIAR (the latter to be provided in yearly tranches of US \$0.33 million).

Summary of budget and financing plan

(Thousands of United States dollars)

<i>Number</i>	<i>Type of expenditure</i>	<i>IFAD</i>	<i>Cofinancing</i>
1	Salaries and allowances	720	300
2	Material and equipment	530	179
3	Operating costs	374	114
4	Training	400	182
5	Travel	236	95
	Total direct costs	2 260	870
6	Overhead (9.5 per cent)	240	130
	Total	2 500	1 000

Results-based logical framework

	Objectives-hierarchy	Objectively verifiable indicators	Means of verification	Assumptions
Goal	The goal is to achieve food security and poverty reduction through enhanced use of agricultural knowledge and innovations	<ul style="list-style-type: none"> Productivity increase to 20ton/ha in family farms) and lower production cost by 15-20% 15-25% increase in profit margins for processors Food Security: increased access to wheat-cassava foods 	Monitoring/Evaluation surveys on income, employment, food markets, nutrition status.	<ul style="list-style-type: none"> macroeconomic stability Continued relevant policy and legal frameworks
Objectives	<ul style="list-style-type: none"> support the generation, dissemination of improved technologies for cassava production and processing to develop and pilot test integrated best-bet options for HQCF production, processing and marketing promote evidence-based models for sustainable value chain development. 	<ul style="list-style-type: none"> The cassava value chain structure understood and applied to establish priority research interventions Cassava productivity increased by 40% from 12.5ton/ha and the incremental profit margins accruing to bread bakers range between 15% and 30%. Minimum of 10,000 MT cassava flour processed by HQCF processors and delivered to bread bakers ; at least 10% cassava flour found in composite flour products (bread, biscuits, etc.) in local markets in WCA 	<ul style="list-style-type: none"> IITA periodic Centre Programme progress reports, evaluations and CRP 1.2 reviews Number of presentations at scientific congresses 	<ul style="list-style-type: none"> No interference of programme workflow by the line ministry or other collaborators Stakeholders' platforms have the necessary coordination structure
Output 1	<p>Output 1 Analysis and Synthesis of the structure and performance of the Nigerian cassava sector to inform the sector in other countries of the region</p> <p>Output 2: Increased productivity of cassava Roots</p> <p>Output 3. Processing and Improved Technical Usability of HQCF</p> <p>Output 4: Market Development of HQCF</p> <p>Output 5: Knowledge Documentation and Sharing</p>	<p>Participatory HGCF value chain analysis conducted</p> <p>10 high yielding and disease resistant varieties tested in 20 demonstration plots/pilot sites,</p> <p>10 out-grower schemes and 20 cassava producer groups (existing as legal entities) established,</p> <p>10 processing plants adopt new mechanized HQCF processing technologies</p> <p>5 pricing, product and marketing strategies HQCF developed, Specific lessons learned from production, processing, bread making and marketing documented;</p> <p>2500 farmers, 10 medium- to large-scale processors adopt research results</p>	<p>Programme progress reports</p> <p>NACRI Annual reports</p> <p>CRP 1.2 Reports</p> <p>Reports from NGOs</p>	<p>Farmers will form cohesive groups with minimum conflicts</p>
Key Activities	<ul style="list-style-type: none"> Establishment of out grower schemes Training of farmers, processor, NACRI staff and bakery operators Strengthening cassava farmers institutions/organization Establishment of quality testing laboratory Establish linkages with financial institution partners 	<ul style="list-style-type: none"> 10 out-grower schemes At least 5 contracts signed between the out grower farmers and processors; 2 500 farmers trained in production, 10 processing plants adopting quality HQCF to comply with good manufacturing practices (GMP); 20 training programmes for staff of collaborating partners, e.g. NACRI, Universities implemented. 1 quality testing laboratory established and assessment of micro-finance activities on cassava commercialization 		

International Center for Agricultural Research in the Dry Areas (ICARDA): Integrated Agricultural Production Systems for the Poor and Vulnerable in Dryland Areas

I. Background

1. Economic growth, food security and rural poverty are major challenges in many dryland areas of the world. Achieving sustainable growth is made even more difficult by the complex constraints facing the agriculture sector, and yet this sector is expected to be pivotal in providing sustainable livelihoods for people living in dryland areas. Renewable water resources are limited; rainfall is unpredictable and highly variable, and will be even more critical in future given foreseen climate changes. To address these constraints and improve the livelihoods of rural poor people in these areas, innovative, climate-proofed production systems, best-bet options and models need to be developed and disseminated. To safeguard against failure in the adoption of best-bet options (as has occurred in the past), three key reasons for the slow adoption rate can be offered: poor economic impact; limited effectiveness of extension services; and the absence, or marginal presence, of business enterprises involved in the technology uptake or transfer.
2. Although technology adoption rates are significantly low, there is an ever-increasing demand for food in the Nile Valley and sub-Saharan Africa due to population increases, compounded by land degradation in the fragile ecosystems of these areas. This has led to the expansion of agriculture into non-traditional areas, including hotter and dryer areas (e.g. the north-western Nile River delta) and areas traditionally not cultivated (e.g. lowland areas in Ethiopia where the Government is promoting wheat farming). If agriculture is to meet the growing demand for food, there is also a need to increase productivity and fill yield gaps in land already cultivated. This will entail developing new adapted varieties resistant to drought, heat, major diseases and insect pests, and improving farmers' access to production inputs, fertilizer and credit, among others.

II. Rationale and relevance to IFAD

3. Publicly funded agricultural extension services are currently too limited in terms of infrastructure and human resources to adequately address the needs of smallholders. Better information exchange and innovative research are needed to transfer outcomes to a commercial platform incorporating a variety of actors from the public, non-profit and private sectors. The IFAD Rural Poverty Report 2011 highlights the need for appropriate technological solutions to address the agricultural productivity, environmental, climatic and market challenges that smallholder farmers are facing. The programme is designed to contribute to making smallholder farming systems in dryland areas more economically feasible.
4. The programme will provide best-bet technologies that are climate-proofed. It will enhance resilience by promoting adaptation of appropriate technologies, making quality inputs available and aligning agricultural production with a value chain approach in an innovative research-to-business (R2B) platform. The programme design will be fully embedded in IFAD-funded projects in order to accelerate the scaling up through business models. Close interaction among programme team members will be established through an inception workshop in each of the countries involved followed by a regional inception workshop and a well-structured monitoring and evaluation programme. The programme will develop a step-wise workplan with targeted end-users that have the knowledge and potential to influence farmers, farmer groups, institutions, associations and policymakers. It also will support farmer organizations to accelerate uptake of best-bet business technologies.

5. The proposal will build on technology options or elements generated during the implementation of the Nile Valley and sub-Saharan Africa Regional Programme in Yemen.

III. The proposed programme

6. The overall goal of the programme is to enhance smallholder farmers' livelihoods in the Nile Valley and sub-Saharan Africa region through innovative research to business platform. The programme will consolidate gender-responsive technologies through further testing at scale. It has identified specific IFAD-funded projects with which to establish linkages, and determined specific ways to assist in their implementation. The grant will therefore also contribute directly to the achievement of these projects' goals and objectives.
7. The programme's objectives are to:
 - (a) Develop gender-responsive, profitable, climate-proofed best-bet options/models of tested and proven technology; and
 - (b) Facilitate the institutional and policy environment for an accelerated scaling up of these technologies.
8. The programme will provide gender-responsive, best-bet technologies that are climate-proofed, user-friendly and inexpensive to about 5,000 smallholder farmers in order to improve their livelihoods.
9. The programme will be implemented over a two-year period and comprises two components:
 - (a) Component 1: Profitable and climate change-proof packages/models; and
 - (b) Component 2: Institutional and policy environment for accelerated scaling up.

IV. Expected outputs and benefits

10. **Outputs related to component 1 are:**
 - Technology options or elements consolidated and validated through participatory stakeholder discussions; and
 - Analysis of economic profitability of the selected options.
11. **Outputs (within IFAD-funded projects) related to component 2:**
 - Farmers organized to adopt production and commercial options;
 - Mature best-bet and commercial options for adoption developed; and
 - Best form of relationships and linkages identified between farmer organizations and service providers (contracts, cooperatives, etc.) to achieve economies of scale and ensure that scaling up of the adopted options is sustainable.
12. **Benefits are**
 - Skills of smallholders are developed to identify and participate in agriculture-based income-generating activities to improve their livelihoods;
 - Farmer organizations and associations are strengthened and able to demand better services; and
 - Best-bet options of commercial value are scaled up.

V. Implementation arrangements

13. ICARDA will be responsible for overall programme management, and for financial and technical reporting to IFAD. It will coordinate programme activities through its regional office in Cairo, Egypt. A programme steering committee will be formed and

will comprise a director, assisted by a national coordinator and representatives of all implementing agencies. The PSC will be responsible for the programme's implementation in each country within the approved annual workplans and budgets. ICARDA will be responsible for technical assistance and capacity-building, and will provide research material. The contribution of all implementing partners to the synthesis of results will be facilitated by regional networks already established by the programme, exchange visits and workshops.

14. The programme will be implemented in full compliance with IFAD financial management procedures and guidelines on procurement, accounting, financial reporting and audit, and with specific fiduciary arrangements and requirements. A contribution agreement was entered into between IFAD and the World Bank (as CGIAR Fund Trustee) in December 2012, setting out the terms and conditions for the administration of the grant by the Trustee. A grant implementation agreement will also be entered into between IFAD and ICARDA, establishing the implementation modalities of the programme, as well as detailed fiduciary arrangements.
15. Grant funds will be transferred in instalments to the recipient, through the Trustee (World Bank), conditional to the contribution agreement and the grant implementation agreement. Disbursements will be made on the basis of withdrawal applications from the Trustee. The first advance will be supported by an approved annual workplan and budget (AWP/B) and, for subsequent instalments, by a statement of expenditures from the recipient and the annual audited financial statements of the recipient. The first advance will include the amount to be transferred by the Trustee to the recipient covering the expenditures approved in the relevant AWP/B, plus the 2 per cent charge to the grant budget to be retained by the Trustee payable as a cost-sharing percentage agreed by all donors to cover, inter alia, the cost of independent quality assurance, external audit and independent evaluation arrangements.

VI. Indicative programme costs and financing

16. The total programme cost will be US\$2.5 million. IFAD will finance US\$1.5 million (over two years) and CGIAR, US\$1.0 million. CGIAR funds will be provided in two annual tranches of US\$0.5 million each. The programme's budget by category is presented in the table below.

Summary of budget and financing plan

(Thousands of United States dollars)

<i>Number</i>	<i>Type of expenditure</i>	<i>IFAD</i>	<i>Cofinancing</i>
1	Salaries and allowances	611	112
2	Equipment and materials	187	400
3	Support devices	52	34
4	Training	69	66
5	Workshops/meetings	46	30
6	Consultancies	280	186
7	Travel	60	40
	Subtotal	1 305	872
8	Overhead (13 per cent)	195	128
	Total	1 500	1 000

Results-based logical framework

	Objectives-hierarchy	Objectively verifiable indicators	Means of verification	Assumptions
Goal	<ul style="list-style-type: none"> Enhance smallholder farmers' livelihoods in the Nile Valley and Sub-Saharan Africa Region through innovative research to business (R2B) platform. 	<ul style="list-style-type: none"> 10% increase in household income 15% increase in the national adoption of improved production packages through innovative R2B platform. 	<ul style="list-style-type: none"> CRP 1.1 reports National agric. production data 	<ul style="list-style-type: none"> Enabling development strategies and policy environment Political stability
Objectives	<ul style="list-style-type: none"> Develop profitable and climate change-proof packages/models of tested and proven technology options. Facilitate the institutional and policy environment for an accelerated scaling up of these technologies. 	<ul style="list-style-type: none"> At least 1300 households in the targeted communities will benefit in terms of 30% increase in aggregate productivity by 2016. Recommended technologies reached an aggregate of at least 1000 farmers through R2B options. 	<ul style="list-style-type: none"> Programme reports and other Publications Programme M&E reports 	<ul style="list-style-type: none"> Continued national commitment to the programmes Farming communities full participation
Outputs	<p>1)Outputs related to specific Component1:</p> <ul style="list-style-type: none"> Technology options or elements based on consolidated and validated through participatory stakeholder discussions. Analysis of economic profitability of the selected options. <p>Outputs related to specific Component 2:</p> <ul style="list-style-type: none"> Farmers organized to adopt production and commercial options; Best bet matured elements commercial options for adoption developed. Identification of the form of relationships and linkages between FO and service providers and ensure the sustainability of the scaling up of the adopted options. 	<ul style="list-style-type: none"> At least 10 improved biotic and abiotic stress tolerant crop varieties tested and validated; at least three improved technologies validated and verified under R2B for up-scaling; 25% increase in Water saving and 20% reduction in fertilizer application (irrigated systems); 20% increase in availability of animal feed under rain-fed systems. 6 Innovation Platforms (IP) established and 2 package (irrigated and rain-fed) scientific technologies generated and tested; at least 80% of the stakeholders IP adopt and use the commercial best bet options developed, at least 2 institutional changes introduced and implemented/IP for scaling up process & link farmers to service providers; and at least 2 commercial options developed and supported under IFAD loan projects 	<ul style="list-style-type: none"> Programme reports and documents Workshop proceedings Database GIS Maps socioeconomic surveys Policy option reports and workshops proceedings 	<ul style="list-style-type: none"> Political situation remains stable and climate changes on the governments agenda
Key Activities	<ul style="list-style-type: none"> Establishment of Innovation platforms Strengthening farmer's groups, institutions and organizations, Training farmers, implementers and extension staff in agronomy, water management and business Evaluation of decision making processes and incentives for adoption of improved farming practices. Promotion of Knowledge Management 	<ul style="list-style-type: none"> 6 IP (minimum) in the programme area established 2 Training programmes for farmers to cover irrigated and rain-fed farming systems. 2 reports on decision making processes (irrigated and rain-fed farming systems 2 models developed for irrigated and rain-fed systems. 2 Communication d knowledge sharing plan for programme outputs (irrigated and rain-fed systems). 	<ul style="list-style-type: none"> Programme progress reports and CRP 1.1 Reports IFAD loan progress reports 	<ul style="list-style-type: none">

International Center for Tropical Agriculture (CIAT): Increasing Food Security and Farming System Resilience in East Africa through Wide-scale Adoption of Climate- Smart Agricultural Practices

I. Background

1. Mixed crop-livestock systems provide livelihoods for two thirds of the human population and produce half of the world's cereal and one third of its beef and milk. Population growth and dietary changes will drive global food demand to unprecedented levels in the coming decades, meaning that food production must increase by 60-70 per cent by 2050 to keep pace. Although vital to the livelihoods of billions of people, agriculture is a major contributor to global greenhouse gas emissions. Future food security depends on agriculture's continued productivity despite its vulnerability to the projected impacts of climate change: increased incidence of extreme weather events; shifting water regimes and distribution of pests and diseases; declining forage quality due to shorter growing seasons; and high temperature stress.
2. Faced with these multiple challenges, smallholder farmers in mixed crop-livestock systems should be the first target for developing strategies that increase food production under variable climatic conditions without stressing natural resources and the climate system. Climate-smart agriculture (CSA) refers to practices that optimize synergies among three interlinked objectives: food security; resilience of farming systems and climate change mitigation. System-level CSA practices such as agroforestry, conservation agriculture or silvopastoralism have the potential to increase whole farm performance including livelihood and climate benefits. A specific example is an improved crop-livestock-tree system with more resilient livelihoods and food security through diversified production, carbon sequestration in rehabilitated land and reduced methane emissions per unit of meat or milk (mitigation) through feeding improvements.
3. Empirical evidence supports the multifaceted benefits of CSA at the global level. However, information on how to identify, verify and target CSA innovations at the local level and understand the mechanisms to enable wide-scale adoption is fragmented.

II. Rationale and relevance to IFAD

4. Considering the rapid pace of climate change and the threat of its impact on global food security, adaptation and mitigation measures must be put into place with an urgency to match. The programme will generate a scientific basis for strategic targeting of locally appropriate CSA practices, with an emphasis on system-based technologies for improved land and livestock management and overall increased food security. It will facilitate the adoption of CSA practices that enable farmers both to adapt to and to mitigate the effects of climate change while improving food security. In particular, it will identify practices that maximize adaptive capacity, mitigate climate change and increase food security in smallholder agricultural systems; analyse the environmental benefits of these practices using real-time land and soil health survey data and improved crop/climate modelling; discern the social, political, economic and environmental barriers to adoption in East Africa; and implement locally appropriate CSA practices at programme sites.

III. The proposed programme

5. The overall goal of the programme is to improve the food security and farming system resilience of smallholder mixed crop-livestock farmers in East Africa while mitigating climate change through wide-scale CSA adoption. This goal will be

achieved by integrating meta-analyses of CSA practices, real-time land health assessments, crop suitability modelling, socio-economic appraisals, multidimensional trade-off analyses and on-farm participatory evaluations of CSA to identify, test and implement locally appropriate CSA practices.

6. The programme's objectives are to:
 - Assess a range of CSA practices and clarify their potential impacts on food production, the greenhouse gas balance and the resilience of farming systems;
 - Conduct spatially explicit monitoring and modelling of land health and agronomic suitability as well as multidimensional trade-off analysis to identify locally appropriate CSA practices;
 - Implement and appraise the most promising CSA practices at the local level to identify perceived benefits and barriers to adoption; and
 - Scale up and scale out CSA activities in East Africa through participation in national learning platforms and a CSA agricultural research for development (AR4D) pathway, involving strategic policy and development partnerships.
7. The target group will include small-scale farmers, particularly women and marginalized groups, national agricultural research systems, policymakers and climate finance entities. These groups are especially targeted to achieve the intermediate development gender outcome set by the CGIAR Program on Climate Change, Agriculture and Food Security (CCAFS), of which the programme is a part: women and marginalized groups gain improved access to and use of services and information related to climate change and mitigation through strengthened linkages to institutions, programmes and interventions, and through participation in decision-making processes. The aim is to use science-based technologies and participatory gender-based methods to better inform decision-making on CSA practices, emphasizing increased food security and sustainable production.
8. The programme will have a three-year duration and will comprise four main components:
 - Carry out a desktop assessment of CSA practices and clarify their potential impacts on food production, the greenhouse gas balance and resilience of farming systems;
 - Conduct spatially explicit monitoring and modelling of land health and agronomic suitability together with multidimensional trade-off analysis to identify locally appropriate CSA practices;
 - Implement and appraise the most promising CSA practices at the local level to identify benefits and barriers to adoption and prioritize practices for evaluation in the field; and
 - Scale up and scale out CSA activities in East Africa through participation in national learning platforms and a CSA AR4D pathway.

IV. Expected outputs and benefits

9. These are the following:
 - Database and virtual library of geographically and agroecologically specific empirical evidence on CSA practices, documenting effects on food production, mitigation, and physical, social and economic resilience of systems; and meta-analytical evaluation of CSA practices comparing their effect with that of standard practices;
 - Comprehensive assessment of land and soil health, including identification of major constraints to productivity and strategic targeting of land management

practices at programme sites and climate analogues; crop suitability maps using improved climate predictions and crop models for different Intergovernmental Panel on Climate Change scenarios; and identification of most promising CSA practices through multidimensional trade-off analysis to be evaluated and implemented at the community level;

- Summary of barriers and constraints to CSA adoption from the farmers' perspective, using both quantitative (questionnaire survey) and qualitative (workshops, testimonials) evidence; implementation of selected CSA practices at benchmark sites; and participatory evaluation of implemented CSA practices; and
 - Impact pathways for CSA practices, taking into account perceived barriers and incentives for actors along this pathway; better-informed policy and programme decisions by government, NGOs and national research communities via the national and regional learning platforms; and demand-driven knowledge products for IFAD-funded programmes, particularly their components financed under the Adaptation for Smallholder Agriculture Programme.
10. **Benefits.** The short-term benefits of these activities are in the form of enhanced food security and increased household incomes, which are important for the IFAD target groups, making this programme a match for the criteria for IFAD's AR4D financing window. Specifically, the benefits fall into two categories: (a) improved livelihoods of rural smallholders through increased incomes and the achievement of food security; and (b) sustainable natural resource management as part of climate change adaptation and mitigation through CSA. This is as a result of the programme outcomes as it will contribute to the following:
- Improved land management and gender-sensitive climate-resilient agricultural practices and technologies;
 - Increased human capacity to manage short- and long-term climate risks and reduce losses from weather-related disasters; and
 - Knowledge on climate-smart smallholder agriculture documented and disseminated.

V. Implementation arrangements

11. The management system for CCAFS, and therefore for the programme, will consist of a lead centre (and its board, CIAT), an independent science panel (ISP) constituted from nominations by the CGIAR and Future Earth, and comprising scientific and development expertise, a programme director and the programme management committee. Theme leaders and regional facilitators will help to initiate and coordinate activities in the different themes and regions, and will constitute the programme management committee. Annual workplan and budgets will be prepared by the programme management committee, and will be vetted by the ISP. ISP recommendations will go to the CIAT board for final approval.
12. The programme will be implemented in full compliance with IFAD financial management procedures and guidelines on procurement, accounting, financial reporting and audit, and with specific fiduciary arrangements and requirements. A contribution agreement was entered into between IFAD and the World Bank (as CGIAR Fund Trustee) in December 2012, setting out the terms and conditions for the administration of the grant by the Trustee. A grant implementation agreement will also be entered into between IFAD and CIAT, establishing the implementation modalities of the programme, as well as detailed fiduciary arrangements.
13. Grant funds will be transferred in instalments to the recipient, through the Trustee (World Bank), conditional to the contribution agreement and the grant implementation agreement. Disbursements will be made on the basis of withdrawal

applications from the Trustee. The first advance will be supported by an approved annual workplan and budget (AWP/B) and, for subsequent instalments, by a statement of expenditures from the recipient and the annual audited financial statements of the recipient. The first advance will include the amount to be transferred by the Trustee to the recipient covering the expenditures approved in the relevant AWP/B, plus the 2 per cent charge to the grant budget to be retained by the Trustee payable as a cost-sharing percentage agreed by all donors to cover, inter alia, the cost of independent quality assurance, external audit and independent evaluation arrangements.

VI. Indicative programme costs and financing

14. The table below provides a summary of the budget and financing plan for the entire support period of three years. The total programme cost is US\$11.8 million, of which US\$2.0 million is being sought from IFAD and the balance of US\$9.8 million will be provided by other donors, including the 2013 European Commission allocation to the CGIAR. The in-kind contribution of CCAFS, equivalent to US\$400,000, is not included in the table.

Summary of budget and financing plan

(Thousands of United States dollars)

<i>Number</i>	<i>Type of expenditure</i>	<i>IFAD</i>	<i>Cofinancing</i>
1	Consultancies	507	6 400
2	Goods, services and inputs	300	1 600
3	Operating costs	179	800
4	Salaries and allowances	643	820
5	Travel	90	170
6	Total direct costs	1 760	9 790
	Overhead	240	0
	Total	2 000	9 790

Results-based logical framework

	Objectives-hierarchy	Objectively verifiable indicators	Means of verification	Assumptions
Goal	Overall goal: To improve food security and farming system resilience of smallholder mixed crop-livestock farmers in East Africa while mitigating climate change.	5-10% of farmers in Lesotho (TZ) and Rakia (UG) Districts are influenced by the programme and their livelihoods will be improved.		
Objectives	<ul style="list-style-type: none"> • Objective 1: Desktop assessment of CSA practices and clarify their potential impacts on food production, the greenhouse gas balance and farming systems resilience • Objective 2: Conduct spatially explicit monitoring and modeling of land health and agronomic suitability as well multi-dimensional trade-off analysis to identify locally appropriate CSA practices. • Objective 3: Implement and appraise the most promising CSA practices at the local level to identify benefits and barriers to adoption and prioritize practices for evaluation in the field. • Objective 4: Upscale and out-scale CSA activities in East Africa through participation in National Learning Platforms and a CSA AR4D pathway 	<ul style="list-style-type: none"> • At least 10 CSA practices identified and their potential impact on food production assessed. • Maps of soil health indicators across the benchmark are created and available. • Database of soil and land health metrics is accessible. • Fourteen model farms are established in each District. • Policy-makers and implementers use demand-driven programme-generated knowledge for adoption 		<ul style="list-style-type: none"> • Awareness and implementation of CSA practices leads to improved agricultural productivity. Farmers are interested in improving agricultural productivity.
Outputs	<ul style="list-style-type: none"> • Database and virtual library of empirical evidence on CSA practices. • Meta-analysis of costs and benefits of CSA practices. • Assessment of land and soil health. • Crop suitability maps based on climate predictions and crop models for different IPCC scenarios (AR5). • Identification of promising CSA practices through multi-dimensional trade-offs. • Summary of barriers and constraints to CSA adoption, • Implementation of selected CSA practices at benchmark sites • Participatory evaluation of implemented CSA practices • Impact pathways for CSA practices; • Better informed policy and program decisions by government, NGOs and national research communities • Demand-driven knowledge products for IFAD programs, especially ASAP-financed components. 	<ul style="list-style-type: none"> • Crop model outputs under different management and climate scenarios developed. • Results of trade-off analysis are communicated • Knowledge to enable widespread adoption. 	<ul style="list-style-type: none"> • Programme Reports, • CRP Reports • NARS Reports 	<ul style="list-style-type: none"> • Partners understand and are interested in land health metrics and crop suitability modelling outputs. • Farmers are willing to establish model farms and welcome on-farm visits. • Policy-makers, NGOs and national research communities use the information generated to benefit local communities/farmers.
Key Activities	<ul style="list-style-type: none"> • assessment of land and soil health at CCAFS sites • Analogues analysis for better strategic planning of land management • Modelling farming systems combining soil and land health assessments with climatic data • Analysis of trade-offs in CSA adoption 	<ul style="list-style-type: none"> • 1 report: practices & associated environmental/social costs/benefits of each • 1 biophysical baseline and M & E framework within a diversity of farming systems • 1 strategic plan of land management options in EA under progressive climate change • spatial and biophysical data to assess variability of crop productivity across landscapes 		

International Water Management Institute (IWMI): Opportunities to Enhance Smallholder Agriculture in sub-Saharan Africa through Sustainable Water, Land and Ecosystem Management

I. Background

1. The agricultural productivity of African landscapes is very low (one tenth or less of their potential). This is partly a consequence of declining water resources (in terms of quality and quantity) and inappropriately managed and overexploited ecosystems. It is compounded by increasing rural and urban populations and the effects of climate change.
2. Changes in these landscapes will be brought about through individual decisions, but for change to be sustainable it must be systemic, and facilitated and directed by institutions that support communities. The programme will develop various facets of this concept, from agricultural water management and development at country and regional levels, through landscape-scale management of ecosystem services in crop and pastoral systems, to urban and peri-urban waste reuse. Individually, these activities address acute problems of development. Together, they present a more comprehensive picture of the potential of water and land management to result in the sustainable intensification of agriculture for reduced poverty and improved food and environmental security.

II. Rationale and relevance to IFAD

3. The programme supports action research as a strategic input to promote economic growth; hence its output will engage local and national partners to ensure their full ownership of a CGIAR-supported research programme: European Community-IFAD cofinancing for a water, land and ecosystems (WLE) process. The overall approach and methodology has the following characteristics:
 - (a) Conducting field-based action research to test and implement new ideas and approaches, with CGIAR centre staff working directly with national and local partners in designing, implementing and assessing specific interventions;
 - (b) Developing community-based approaches that involve local actors, with significant dialogue and consultation prior to any intervention, full community involvement in implementation and community involvement in assessing impacts prior to wider dissemination;
 - (c) Documenting all interventions, supported by systematic monitoring of results and outcomes to promote adoption;
 - (d) Seeking opportunities to ensure that research is designed to have impacts at basin and regional levels, wherever appropriate;
 - (e) Establishing linkages with existing governance structures at local, district and national levels to foster communication among all actors;
 - (f) Supporting national policymakers, public and private investors, and researchers in developing, finalizing and disseminating policies and best practices for adoption at wider scales;
 - (g) Supporting demand-led services so that local stakeholders and institutions enhance their capacity to manage their resources sustainably;
 - (h) Operating at three levels: (i) regional level, covering research and assessment of innovative agricultural water management (AWM) solutions and business models; (ii) country level, focusing on selected francophone and anglophone

countries in sub-Saharan Africa; and (iii) programme level, through piloting and implementation of specific AWM solutions and business models; and

- (i) Investing in training.

III. The proposed programme

4. The programme is multi-institutional and multidisciplinary in nature, and is integrated into the larger WLE programme. Its results will contribute directly to achieving the goals of the CGIAR research programme and therefore those of the CGIAR itself; at the same time, they will lay the groundwork for future work to refine and scale out the programme's outputs to achieve more comprehensive outcomes.
5. Target groups will be:
 - (a) Rural women and men under pressure to intensify agriculture (including pastoralists and poor people);
 - (b) Policymakers, civil society leaders, private enterprises and NGOs; and
 - (c) Researchers as users of the research outputs and recommendations.
6. The programme's goal is to reduce rural poverty and improve the sustainability of food production and environmental security in Africa by addressing multiple aspects of development in land areas, river basins and regions.
7. The programme has three main objectives, namely to:
 - (a) Improve food, environmental security and governance in selected areas through the simultaneous development of multiple ecosystem services (soil, water, biodiversity);
 - (b) Improve water and soil nutrient management at landscape and basin scales to support rural and peri-urban livelihoods; and
 - (c) Improve local stakeholders' capacities to take informed decisions for the provision of services and goods related to natural resource management (particularly AWM) practices, institutions and policies.
8. Although the programme has five components,² this grant will fund the implementation of only one: scaling up agricultural water management solutions and other innovations for smallholder farmer households in West, Central, East and Southern Africa, to be implemented by the Food and Agriculture Organization of the United Nations (FAO) and IWMI.
9. These five components stand alone, but will also be integrated, with partners, through regional development hubs to be established in the future by CGIAR for the Volta-Niger, Limpopo-Zambezi and Nile basins. This integration will not only seek to link the results from each of the five programme components, but also view the activities, results and outcomes from basin and regional perspectives. Given the comparatively short time frame for this programme, it is likely that the outcomes will primarily be the development of roadmaps for the future and their presentation to national, district and community organizations responsible for long-term management of water and soil resources.

² The other programme components are :

- (i) Improved water management and food production in the Volta and Niger river basins (implemented by the IWMI/WLE Focal Region Program building on the CGIAR Challenge Program on Water and Food, West Africa);
- (ii) Restoring degraded landscapes through selective investments in soil quality (led by CIAT, West, East and Southern Africa);
- (iii) Enhancing ecosystem services in pastoral systems (led by the International Livestock Research Institute, West and East Africa);
- (iv) Developing business opportunities for resource recovery and reuse (RRR) of domestic and agro-industrial waste in urban and peri-urban areas (IWMI in West and East Africa).

IV. Expected outputs and benefits

10. There is one output from the implementation of the component: tried and tested AWM solutions are scaled up by involved and informed stakeholders and their related platforms/organizations at programme, country and regional levels.
11. The benefits are improved adoption of tested technologies to improve AWM for participating communities, specifically:
 - Governance systems that support effective policy reform and adoption of best practices in AWM;
 - Capacity for monitoring and assessment of the impact and acceptability of implementation of AWM best practices; and
 - Enhanced local and regional capacities and facilities that enable farmers and their rural institutions to be in charge of agricultural water development, management and investments.

V. Implementation arrangements

12. IWMI will be the lead implementing agency and will engage with FAO to implement the programme aspects funded by IFAD under its agricultural research for development (AR4D) window, as part of the overall WLE programme. The WLE programme director will be responsible for ensuring synergies among all the programme components and will maintain effective communication and collaboration with the IFAD task manager and other key IFAD and European Community professionals. FAO and IWMI will co-lead the initial needs assessment: IWMI – in countries where it is represented – will mobilize its comparative advantage and expertise in policy dialogue (also with national agricultural research systems), whereas FAO will draw on its field-based expertise and experience in AWM technologies when addressing capacity-building and related topics. The implementers (IWMI/FAO) will both be responsible for liaising with local partners, for day-to-day programme management in their regions, and – key to the impact pathway – for collaboration with IFAD country programme managers and offices as well as programme management units. A WLE management committee will review the results and review/approve annual workplans and budgets for this programme, as its statutory responsibility. An advisory committee, which will include the WLE programme director, will be established and will meet annually, or whenever appropriate, to review results and provide advice on any necessary adjustments to the programme.
13. The programme will be implemented in full compliance with IFAD financial management procedures and guidelines on procurement, accounting, financial reporting and audit, and with specific fiduciary arrangements and requirements. A contribution agreement was entered into between IFAD and the World Bank (as CGIAR Fund Trustee) in December 2012, setting out the terms and conditions for the administration of the grant by the Trustee. A grant implementation agreement will also be entered into between IFAD and IWMI, establishing the implementation modalities of the programme, as well as detailed fiduciary arrangements.
14. Grant funds will be transferred in instalments to the recipient, through the Trustee (World Bank), conditional to the contribution agreement and the grant implementation agreement. Disbursements will be made on the basis of withdrawal applications from the Trustee. The first advance will be supported by an approved annual workplan and budget (AWP/B) and, for subsequent instalments, by a statement of expenditures from the recipient and the annual audited financial statements of the recipient. The first advance will include the amount to be transferred by the Trustee to the recipient covering the expenditures approved in the relevant AWP/B, plus the 2 per cent charge to the grant budget to be retained by the Trustee payable as a cost-sharing percentage agreed by all donors to cover,

inter alia, the cost of independent quality assurance, external audit and independent evaluation arrangements.

VI. Indicative programme costs and financing

15. The total programme cost is US\$5.7 million, of which US\$2.0 million is being sought from IFAD and the balance of US\$3.7 million will be provided under the 2013 European Commission allocation to the CGIAR. The budget by category is presented in the table below.

Summary of budget and financing plan

(Thousands of United States dollars)

<i>Number</i>	<i>Type of expenditure</i>	<i>IFAD</i>	<i>Cofinancing</i>
1	Salaries and allowances	406	1 840
2	Travel	300	310
3	Equipment and materials	22	12
4	Operating costs	812	928
5	Training	150	570
6	Workshops/meetings	50	40
	Total direct cost	1 740	3 700
7	Overhead (13 per cent)	260	0
	Total	2 000	3 700

Results-based logical framework

	Objectives-hierarchy Objectively	Verifiable indicators	Means of Verification	Assumptions
Goal	To reduce rural poverty and improve the sustainability of food production and environmental security in Africa through addressing multiple aspects of development in landscapes, river basins and regions	<ul style="list-style-type: none"> Increased productivity in landscapes Improved ecosystem services (water, land, other ES) Greater sharing of benefits amongst users of landscapes 	<ul style="list-style-type: none"> Secondary data Land surveillance Policy review 	<ul style="list-style-type: none"> Acceptance of the need to improve multiple aspects of development translates into concrete support within key organisations The identified AWMS opportunities and options fit the (farmer) institutional arrangements, co-opt existing delivery mechanisms and are aligned with the development objectives of the IFAD co-funded investment projects,
Objectives	<ol style="list-style-type: none"> 1. Improve food, environmental security and governance through simultaneous development of multiple ecosystem services (soil, water, biodiversity). 2. Improve water and soil nutrient management at landscape and basin scales for rural and peri-urban livelihoods. 3. Improve local stakeholders capacities to take informed decisions for provision of services and goods related to NRM practices, institutions and policies. 	<ul style="list-style-type: none"> Estimated benefits relating to specific single interventions and multiple services Valuation of soil, water and ecosystem benefits under crop and livestock systems A 5 per cent increased investment in food and environmental security in target areas Evidence of local and regional stakeholder engagement in institutions and networks of relevance to NRM 	<ul style="list-style-type: none"> Analysis of rural livelihoods Policy changes and reforms Analysis of sensitivity of livelihoods to soil and water conditions in basins Documentation of investments supported by WLE Local organisations and networks and their related activities, projects. 	
Output	Tried and tested AWM solutions are scaled by involved and informed stakeholders and their related platforms/organisations at project, country and regional levels	<ul style="list-style-type: none"> National AWM investment plans in 3/6 countries refer to broadly consulted AWMS elements Trade policy modifications proposed/effective in 2/6 countries refer to lifting import barriers for AWM related goods and services 30 per cent of IFAD co-funded PMU staff in 3/6 countries pro-actively refer to AWM K platforms for informed decision making 	<ul style="list-style-type: none"> Monitoring of CAADP, ECOWAS and ESA related initiatives and policies CoP/K-Network hits IFAD projects include AWMS investments in their portfolio and APWBs 	
Key Activities	<ul style="list-style-type: none"> country-level needs assessment, applied research in promising AWM Solutions technologies, training and mentoring, learning exchanges, development of policy briefs 	<ul style="list-style-type: none"> 3 AWM needs assessment reports for 3 countries in the project area Training 30 national staff on AWM 1 exchange programmes (at least) arranged for participating communities 6 policy brief/country on adoption of proven AWP technologies in the project area Institutional models for community AWM 		