

Document: EB 2016/LOT/G.20
Date: 21 November 2016
Distribution: Public
Original: English

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Investing in rural people

President's report on a proposed grant under the global/regional grants window to the International Institute of Tropical Agriculture (a CGIAR Research Centre) to Fight Cassava Brown Streak Disease and Cassava Mosaic Disease through the Deployment of New Resistant Germplasm and Clean Seed in Burundi and Rwanda

Note to Executive Board representatives

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For: Approval

Recommendation for approval

The Executive Board is invited to approve the recommendation for the proposed grant as contained in paragraph 11.

President's report on a proposed grant under the global/regional grants window to the International Institute of Tropical Agriculture (a CGIAR Research Centre) to Fight Cassava Brown Streak Disease and Cassava Mosaic Disease through the Deployment of New Resistant Germplasm and Clean Seed in Burundi and Rwanda

I. Background and compliance with IFAD Policy for Grant Financing

1. **Background.** Cassava (*Manihot esculenta* Crantz) is an important food crop in sub-Saharan Africa. Its root is the main source of energy and its leaves a source of protein and vitamins. Since 2000, Cassava production has tripled in Burundi and Rwanda, where it is now the third and second most important food crop, respectively. Moreover, it has potential for commercialization in both countries through investments targeting food and feed-processing industries. Commercial and traditional food usage require increased crop productivity per unit area. However, production is threatened by the presence of two virulent viral diseases, cassava brown streak disease (CBSD) and cassava mosaic disease (CMD), which lead to yield losses ranging from 20 to 100 per cent. The spread of these diseases is attributed to the movement of infected cassava planting materials between farms and through porous borders in the region, a situation exacerbated by the lack of a cassava seed system. This project will facilitate the adoption of approaches to mitigate both CBSD and CMD and strengthen the capacity of the public sector in breeding and seed system delivery.
2. **Compliance with IFAD Policy for Grant Financing.** The proposed project is in line with the goal and objectives of the IFAD Policy for Grant Financing (2015).¹ The project will contribute to household food security and incomes of rural cassava farmers in Burundi and Rwanda. It will focus on developing, testing and promoting the adoption of cassava varieties with dual resistance to CBSD and CMD in order to increase cassava productivity. The project will be implemented through partnership between the grant recipient and the national agricultural research systems (NARS). The project seeks to enhance capacity of partners to undertake and use research and will engage with cassava producers to that end. Knowledge generation and sharing are therefore central to project implementation. Since policymakers constitute an important project target group, project design incorporates an element of advocacy and policy engagement. The research outputs will be used to inform the development of the cassava sector in the target countries as part of the scaling up of the grant investments. The project thereby contributes directly to the objectives of the Policy for Grant Financing.

¹ See EB 2015/114/R.2/Rev.1.

II. The proposed project

3. Overall goal and objectives. The overall goal is to contribute to increased food security and household incomes of rural cassava farmers in Burundi and Rwanda. The objective is to increase cassava productivity by: a) developing and testing new varieties with dual resistance to CBSD and CMD; b) establishing a clean cassava seed delivery system; and c) building the capacities of partner NARS/stakeholders in cassava breeding and seed systems.
4. The project will directly target 20,000 cassava farmers in Burundi and Rwanda, at least 50 per cent of whom will be women, and indirectly target approximately one million urban consumers.
5. The project will be implemented over three years and comprise the following components/outputs:
 - (a) 25 promising clones introduced and tested in major agroecologies of Burundi and Rwanda.
 - (i) Multiply and dispatch elite tissue culture (TC) clones of cassava planting material.
 - (ii) Post-flask management of TC plantlets.
 - (iii) Multiply & maintain hardened TC plantlets.
 - (iv) Field multiplication of elite TC clones at clean seed sites.
 - (b) 500 new breeding lines selected from introduced true seed in each country.
 - (i) Dispatch 10,000 true cassava seeds from cultivars with high CBSD/CMD resistance.
 - (ii) Germinate and select seedlings in nurseries in each project country for multiplication.
 - (iii) Multiplication of seedlings for accelerated clonal evaluation and distribution.
 - (c) Local germplasm comprising landraces and released improved cultivars collected, cleaned and conserved.
 - (i) Conduct germplasm collection across each project country.
 - (ii) Identify core germplasm through genetic diversity studies.
 - (iii) Clean the respective core germplasm.
 - (d) 5,000 new breeding lines in form of true seed, from polycross nurseries, in each country.
 - (i) Establish a polycross nursery of 20 parents in each country.
 - (ii) Harvest and record the true seed in each country.
 - (e) Degeneration rates determined for five local cultivars in each country.
 - (i) Conduct a national trial using at least five local popular clones to monitor rates of degeneration.

III. Expected outcomes/outputs

6. The expected outcomes are:
 - (i) High-yielding, CBSD- and CMD-resistant cassava varieties developed and available to smallholder farmers in Burundi and Rwanda;

- (ii) Sustainable cassava seed systems established and functioning; and
- (iii) Capacity of NARS strengthened in seed systems delivery and breeding.

IV. Implementation arrangements

7. The International Institute of Tropical Agriculture (IITA) will be the grant recipient responsible to IFAD for both fiduciary and technical reporting. IITA was selected as recipient of this regional grant because of its long experience researching cassava as one of its mandated research crops. Moreover, the proposed grant builds on previous work in Malawi, the United Republic of Tanzania and Uganda that identified candidate cassava varieties resistant to CSBD and CMD, which will be tested in Burundi and Rwanda, and IITA has developed a seed system model for cassava multiplication and distribution that will be adapted to local conditions in the project area. By building on previous success, project implementation will gain in efficiency, effectiveness and value for money.
8. IITA will lead overall project implementation, providing implementing partners with technical support and grant resources. The NARS in Burundi and Rwanda will implement specific outreach activities and coordinate all other project partners in each country. Seed regulation agencies in Burundi and Rwanda will guide the development and regulation of the cassava seed systems based on the model developed by IITA and previously rolled out in the United Republic of Tanzania and Uganda.
9. There are no deviations from the standard procedures for financial reporting and audits. IITA will ensure that:
 - (i) The entire project implementation period is covered by audit, including the 2 per cent cost-sharing percentage (CSP);
 - (ii) Its institutional accounts are audited annually in accordance with International Standards on Auditing and IFAD financial guidelines, and a copy of its audited financial statements submitted to IFAD within six months after the end of each fiscal year;
 - (iii) An audit opinion letter on the statement of expenditures submitted to IFAD is duly completed by its independent auditors, disclosing the amount of funds from various sources received and spent; and
 - (iv) The annual audit report submitted to IFAD shall cover both IFAD funds and any cofinancing, and shall consolidate expenditures incurred by sub-grantees, which will be accountable for the use of sub-grant funds and be subject to normal audit oversight.

V. Indicative project costs and financing

10. The total project budget is US\$2.5 million, covered by an IFAD grant in the amount of US\$2.0 million and US\$500,000 in in-kind cofinancing from IITA and NARS.

Table 1
Costs by component and financier
 (Thousands of United States dollars)

<i>Components</i>	<i>IFAD</i>	<i>Cofinancing</i>	<i>Total</i>
25 promising clones introduced and tested	533	200	733
1,000 new breeding lines selected from introduced true seeds	370	100	470
At least 100 local (landraces and improved) varieties collected, cleaned and conserved	427	-	427
10,000 new breeding lines, in form of true seed, generated in polycross nursery	310	-	310
Degeneration rates of 10 local cultivars.	360	200	560
Total	2 000	500	2 500

Table 2
Costs by expenditure category and financier
 (Thousands of United States dollars)

<i>Expenditure category</i>	<i>IFAD</i>	<i>Cofinancing</i>	<i>Total</i>
Direct costs			
Salaries and allowances	600	-	600
Equipment and materials	248	-	248
Operating costs	160	-	160
Goods, services and inputs	500	500	1 000
Travel and allowances	109	-	109
Training	125	-	125
Workshops	74	-	74
Subtotal direct costs	1 816	500	2 316
Indirect costs			
Management fee (8%)	144	-	144
2% CSP	40	-	40
Total	2 000	500	2 500

VI. Recommendation

11. I recommend that the Executive Board approve the proposed grant in terms of the following resolution:

RESOLVED: that the Fund, in order to finance, in part, the project to Fight Cassava Brown Streak Disease and Cassava Mosaic Disease through the Deployment of New Resistant Germplasm and Clean Seed in Burundi and Rwanda, shall provide a grant of two million United States dollars (US\$2,000,000) to the International Institute of Tropical Agriculture for three years 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

Results-based logical framework

Hierarchy	Objectives – hierarchy	Objectively verifiable indicators	Means of verification	Assumptions
Goal	Improved food and income security for cassava farming households in Rwanda and Burundi?	20% increase in Household with food sufficiency 20% increase in Household with improved incomes	Ex-ante study reports	
Objectives	Overall objective: To increase cassava productivity in Burundi and Rwanda through development and deployment of CBSD and CMD resistant varieties. Specific objectives to: <ul style="list-style-type: none"> develop and test new varieties with dual resistance to CBSD & CMD establish a clean cassava seed delivery system. strengthen the capacities of partner NARS and other key stakeholders in cassava breeding and seed systems. 	new varieties or elite clones with dual resistance to CBSD & CMD A stakeholder network of agencies and organisations responsible for a full functional seed system NARS and other national partners have desired skills and tools to implement project activities	Project reports and copies of documents made during the project	Political stability Favourable policies for cassava production in Rwanda and Burundi
Outputs	25 promising clones introduced and tested in major cassava agro-ecologies of Rwanda and Burundi	<ul style="list-style-type: none"> 400 TC plantlets/the 25 clones multiplied by GTIL 200 TC plantlets/the 25 clones received per country 200 plantlets/the 25 clones hardened per country 200 plants/the 25 clones surviving under field multiplication per country 6 trials established 	Publications (including maps, reports, peer-reviewed papers) Meetings' Workshop reports and Monitoring Lab reports	
	New breeding lines selected from introduced true seeds per country	<ul style="list-style-type: none"> 10000 seeds dispatched from IITA 8000 seedlings germinated and multiplied 		
	Landraces and improved varieties collected, cleaned and conserved in each target countries	<ul style="list-style-type: none"> Database of germplasm collected Database of the core germplasm identified At least 50 core germplasm cleaned by KEPHIS 		
	New breeding lines, inform of true seed, generated in polycross nursery per country	<ul style="list-style-type: none"> 2 polycross nursery established At least 20 seed families totalling 10000 seeds are collected 		
Key Activities	<ul style="list-style-type: none"> Post-flask management of TC plantlets Field multiplication of elite clones at clean 	<ul style="list-style-type: none"> 200 plantlets multiplied per clone by GTIL; 25 clones dispatched 	Project reports, Field	Permission by government to

Hierarchy	Objectives – hierarchy	Objectively verifiable indicators	Means of verification	Assumptions
	<ul style="list-style-type: none"> seed sites Multi-locational trials 	<ul style="list-style-type: none"> 50 clones and respective 400 plantlets hardened 6 multi-location trials established 	visits Stakeholder and partner reports	introduce the elite germplasm Farmers willingness to share germplasm Hot spot sites for CBSD and CMD Intrested stakeholders
	<ul style="list-style-type: none"> Seedling germination and selection in nurseries Clonal evaluation in single plots in two sites per country Distribution of CBSD and CMD resistant cultivars 	<ul style="list-style-type: none"> 10 000 seeds dispatched 16 000 seedlings germinated and selected 2 sites planted with clonal evaluation trials 		
	<ul style="list-style-type: none"> Clean the core germplasm by KEPHIS Conserve the core germplasm 	<ul style="list-style-type: none"> Database of germplasm collected Atleast 50 core germplasm cleaned by KEPHIS 		
	<ul style="list-style-type: none"> Establish a polycross nursery of 10 local; 10 elite in per country Harvest/record true seed in project area 	<ul style="list-style-type: none"> Polycross established in each of the target countries 20 seed families totalling 10 000 seeds are collected. 		
	<ul style="list-style-type: none"> Outline the characterisitcs of the pilot clean seed model Generate information to inform policy changes in the Seed Act 	<ul style="list-style-type: none"> A copy of the model document available 4 copies of presentations/Copies of scientific publications shared/ number of sensitization meetings conducted 		
	<ul style="list-style-type: none"> Establish and manage one clean cassava seed site Certification standards of the clean sites established 	<ul style="list-style-type: none"> One clean seed site available per country One clean seed site report card per country 		
	<ul style="list-style-type: none"> Identify and select individuals for seed multiplication Establish and manage clean seed multiplication fields 	<ul style="list-style-type: none"> 10 individuals or groups selected for seed multiplication per country 10 seed multiplication fields established per country 		
	<ul style="list-style-type: none"> Screenhouses for multiplication & protection of clean stocks installation 	2 screenhouses installed		