Investing in rural people

Executive Board

President's memorandum

Proposed additional financing

Republic of Mozambique

Inclusive Agrifood Value Chain Development Programme - PROCAVA

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Action: The Executive Board is invited to approve the recommendation for the proposed additional financing contained in paragraph 54.

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Financing summary

Initiating institution:	IFAD
Borrower/recipient:	Republic of Mozambique
Executing agency:	Ministry of Agriculture and Rural Development
Total programme cost:	US$78.098 million
Amount of original IFAD loan:	US$8.4 million
Terms of original IFAD loan:	Highly concessional (40-year maturity period, 10-year grace period and fixed service charge as determined at the date of financing approval)
Amount of original IFAD grant:[1]	US$33.6 million
Amount of Rural Poor Stimulus Facility (RPSF) I & II:	US$1.7 million
Amount of Crisis Response Initiative (CRI):	US$3.0 million
Amount of additional Twelfth Replenishment of IFAD's Resources (IFAD12) grant:[2]	US$20.0 million
Terms of additional IFAD financing:	Grant
Contribution of borrower/recipient:	US$5.5 million
Contribution of beneficiaries:	US$5.9 million
Amount of original IFAD climate finance:	US$19.6 million
Cooperating institution:	IFAD

[1] IFAD grant to countries in or at high risk of debt distress.
[2] Ibid.

I. Background and programme description

A. Background

1. The Inclusive Agrifood Value Chain Development Programme (PROCAVA) was approved by the IFAD Executive Board in December 2019 and became effective in May 2020 for a 10-year period with two phases. Phase 1, totalling US$72.5 million, covers the period 2020–2025. The original PROCAVA financing consisted of: (i) an IFAD grant to countries in or at high risk of debt distress in the amount of US$33.6; (ii) an IFAD loan of US$8.4 million; (iii) Government of Mozambique: US$4.9 million; (iv) Green Climate Fund (GCF): US$20.0 million (tbc); (v) programme beneficiaries and private sector: US$5.6 million.

2. The PROCAVA financing agreement was amended in December 2020 and January 2022 to include RPSF I and II grant allocations in the amount of US$764,783 and US$934,162, respectively. It was amended a third time in May 2023 to include a grant from CRI in the amount of US$3,008,036. PROCAVA's completion and closure dates remain unchanged, with completion in June and closure December 2030.

3. The expected GCF financing for PROCAVA phase 1 has not been approved as programmed, thus creating a financial gap.

4. Consequently, the Government has made a formal request to access further additional financing of US$20.0 million (IFAD grant to countries in or at high risk of debt distress) from the IFAD12 performance-based allocation system (PBAS) to cover the GCF financing gap.

B. Original programme description

5. **Programme goal and objective.** PROCAVA, with a financing approach of five years, will be implemented within a 10-year programmatic framework to provide the necessary instruments to attract other development partners to work with IFAD as and when they are ready. This approach will also offer potential cofinanciers an opportunity to select geographical areas for their focus or investment. The programme's goal is to contribute to poverty reduction, improved food and nutrition security and resilient livelihoods for inclusive rural transformation. The development objective is to increase net incomes from climate-resilient agrifood value chains for rural women, men and youth. The programme will target the following value chains: (i) selected irrigated horticulture commodities; (ii) red meat (cattle and goats); (iii) poultry; (iv) cassava; and (v) legumes.

6. There are three expected outcomes: (i) productivity, production and quality of targeted value chains improved – PROCAVA is expected to boost the productivity and production of the five targeted value chains; (ii) market access and performance of targeted value chains improved – implementation of PROCAVA interventions is expected to link the target beneficiaries' higher production to different marketing channels and result in higher returns to beneficiaries; and (iii) institutional capacity to deliver services enhanced.

II. Rationale for additional financing

A. Rationale

7. Due to its programmatic approach and two implementation phases, PROCAVA was designed with innovative financing instruments and flexibility to incorporate additional financing and partners throughout the implementation period. The expected GCF financing of US$20.0 million for PROCAVA has not yet been approved, thus creating a financial gap.

8. IFAD submitted a multi-country concept note to the GCF for the Small Producer Adaptation to Climate Change (SPARCC) programme, which includes funding for PROCAVA. However, the GCF did not initially approve the concept note as it did not

meet all the requirements. Therefore, GCF funding will not be available as planned during phase 1 of PROCAVA. Since the revised concept note will need to go through the Entity Work Programme and evaluation, GCF resources, including funding for the second phase of PROCAVA, are unlikely to be accessible during PROCAVA implementation, even in phase 2.

9. On 23 August 2023, the Government of Mozambique submitted a formal request to access further additional financing of US$20.0 million from the IFAD12 PBAS (IFAD grant to countries in or at high risk of debt distress) to cover the GCF financing gap, thereby ensuring smooth implementation of the programme's phase 1 activities as outlined in the programme design report while accelerating the scale-up and expansion of programme activities to northern Mozambique due to its fragile situation, with a view to increasing communities' resilience, recovery and sustainable development.

10. It is worth noting that the African Development Bank (AfDB) has committed to cofinancing PROCAVA with US$33.0 million in parallel financing for the existing Legumes and Poultry Value Chains Programme. The pre-appraisal mission was conducted in April 2023 and the main design mission in August and September. These resources will not only contribute to the improvement of PROCAVA outcomes and impacts but cover phase 2 of the programme (2026–2030).

11. PROCAVA is a national programme (scale-up project of the Pro-Poor Value Chain Development Project in the Maputo and Limpopo Corridors [PROSUL] implemented only in the southern region) and is currently one of the main programmes of the Ministry of Agriculture and Rural Development (MADER), due to its programmatic and sustainable intervention approach throughout the life cycle of selected value chains (from research/inputs/seeds to markets/consumers). The selected value chains (horticulture, cassava, red meat, legumes and poultry) are part of the country's priority strategic development value chains – hence, the systemic role of PROCAVA in the sector and for small-scale farmers.

12. Based on the assessment by the latest partial supervision mission in March 2023, the programme is classified as "not at risk" and rated 4.11 and 4.33 on key supervision indicators #1 (likelihood of achieving the development objective) and #2 (overall implementation performance), respectively. Programme effectiveness and financial management and execution are rated as "moderately satisfactory" and "satisfactory," respectively, according to that same partial supervision mission.

13. The value for money (VfM) indicator has also improved considerably since it was last assessed in August 2022. Total programme outreach in December 2022 was 193,365 (32 per cent of the midterm review [MTR] target). MTR outreach targets will be met with the ongoing/expected 2023 interventions, mainly because of the infrastructure projects. All components are being fully implemented, and disbursement levels are satisfactory. The upcoming phase 1 MTR will assess the VfM in detail by reviewing the economic and financial analysis and all design assumptions.

14. Key lessons from programme implementation to date include: (i) OpenDataKit (ODK) systems for monitoring and evaluation (M&E), which are affordable, cloud-based and accessible for different users and applications, are effective; ODK systems are user-friendly and do not rely on external and recurrent technical assistance for maintenance; (ii) conducting value chain rapid assessments at the start of programme implementation helped the programme identify challenges associated with each value chain, allowing for timely development of strategies to address those challenges during implementation; (iii) infrastructure-related projects should have at least 1.5 years (year zero) to complete all Social, Environmental and Climate Assessment Procedures (SECAP)-related studies before project effectiveness to avoid delays in intervention start-up.

Special aspects relating to IFAD's corporate mainstreaming priorities

15. In line with IFAD’s mainstreaming commitments, the programme has been validated as:

☒ Including climate finance

☒ Youth-sensitive ☒ Prioritizing persons with disabilities **Climate change.** Mozambique is highly vulnerable to extreme weather events. The country’s vulnerability is exacerbated by its limited adaptive capacity, growing population and dependence on the natural resource base. Climate projections show that average annual temperatures are likely to increase by 1.50° C to 30° C by 2050. Prolonged drought and heat waves are expected to increase, particularly in the southern and central regions. Rainfall patterns will vary in intensity and amount across regions and seasons. Droughts and floods are common extreme events and pose the highest threat to smallholder farmers’ natural resource base. Similarly, land degradation continues to threaten food security and environmental sustainability. Reports reveal that more than 50 per cent of Mozambique's land area is either degraded or undergoing degradation. Deforestation, overgrazing and forest fires are the primary causes of land degradation. PROCAVA has been designed and will be implemented in compliance with the IFAD Strategy and Action Plan on Environment and Climate Change 2019–2025; Environment and Natural Resources Management Policy; and SECAP to increase climate resilience among smallholder farmers and value chain actors and promote sustainable natural resource management and environmental sustainability.

17. **Gender and social inclusion*.*** Mozambique’s Gender Development Index of 0.904 is low. Women have lower literacy levels, and female heads of household are more likely to have no formal education. PROCAVA is aligned with IFAD’s Policy on Gender Equality and Women’s Empowerment and its gender action plan 2019–2025.

18. **Youth.** While the youth labour force is growing by almost 40 per cent per annum, formal sector job creation remains static. PROCAVA will address rural youth issues, in line with IFAD’s Rural Youth Action Plan 2019–2021.

19. **Nutrition.** Mozambique continues to depend on food imports to meet a large portion of its domestic needs, particularly for edible oils and staple food crops. In 2017, food imports accounted for 29 per cent of the country’s import bill. From a nutrition standpoint, PROCAVA is aligned with the Mainstreaming Nutrition in IFAD: Nutrition Action Plan 2019–2025.

B. Description of geographical area and target groups

20. **Geographical area of intervention.** PROCAVA will ultimately be implemented in 75 districts in two phases over the 10-year framework. These districts will be selected from all 10 provinces in Mozambique. To enhance effectiveness, value chains will be prioritized in provinces where they have a clear comparative advantage. Activity implementation will follow a phased approach.

21. **Target groups.** PROCAVA will target 180,500 households (902,500 beneficiaries); 50 per cent of the target beneficiaries will be women and 30 per cent youth. The quotas for women and youth are based on national demographics and poverty lines for those two population categories and on lessons learned from PROSUL. The additional financing from the RPSF and CRI will increase PROCAVA’s targeted households to 211,900 (1,059,500 beneficiaries).

22. In order to reach the intended beneficiaries and avoid elite capture, PROCAVA will use selected targeting mechanisms, including direct targeting and self-targeting, supported by empowering and enabling measures.

C. Components, outcomes and activities

23. The programme has the following components:

24. **Component 1: Production improvement and market linkages.** This component is intended to improve the production and productivity of target crop and livestock commodities. It will improve farmers' backward and forward linkages to different stakeholders in the target value chains. Strengthening climate resilience and enhancing natural resource management and environmental sustainability through the promotion of appropriate technologies and best practices will also be an integral part of this component.

25. **Component 2: Market-related climate-resilient infrastructure.** This component aims to ensure that the appropriate infrastructure is in place to support the effectiveness of market-led production interventions and deliver surplus production to different markets more efficiently. Planned interventions will focus on addressing the constraints faced by relevant actors operating in target value chains. This will include supporting rural infrastructure investments that can add value at the location, upgrade the performance of enterprises and enable associated agricultural producers to become competitive and environmentally and profitably sustainable. Infrastructure will be prioritized according to business plans and linkages along the value chain.

26. **Component 3: Institutional and policy strengthening and implementation support.** This is a cross-cutting component supporting the technical components and facilitating pathways for effective functioning of the target value chains.

27. **Component 4: Disaster risk reduction and management.** This component has been included as a mechanism for enabling IFAD to respond expeditiously in the event of weather-related calamities (droughts, floods or cyclones) in the country. The work under this component is expected to facilitate and expedite the implementation of level-2 programme restructuring in the event of an emergency or disaster.

28. The programme components and activities and theory of change will remain unchanged with the additional financing, taking into account that the financing is to cover the GCF contribution to the programme that did not materialize.

D. Costs, benefits and financing

Programme costs

29. Total original programme costs for phase 1 (2020–2025), including price and physical contingencies, duties and taxes, are estimated at US$72.5 million. The original financing for PROCAVA consisted of: (i) an IFAD grant to countries in or at high risk of debt distress of US$33.6 million; (ii) an IFAD loan of US$8.4 million; (iii) Government of Mozambique US$4.9 million; (iv) GCF US$20.0 million;[3] (v) programme beneficiaries and private sector US$5.6 million.

30. The PROCAVA financing agreement was amended in December 2020 and January 2022 to include RPSF I and II grant allocations of US$764,783 and US$934,162, respectively, to finance the Government's COVID-19 response for rural smallholder farmers. The financing agreement was further amended in May 2023 to include the CRI grant of US$3,008,036. This brought the total programme financing to US$78.1 million (see summary in table 1 below). PROCAVA's completion and closure dates remain unchanged, with completion in June and closure December 2030.

[3] The GCF US$20 million is now replaced by the IFAD additional financing grant.

Table 1
Original and additional financing summary
(Thousands of United States dollars)

	Original financing	*Additional financing*	*Total*
IFAD loan	8 400		8 400
IFAD grant	33 600		33 600
IFAD12 (replacing GCF)	**20 000**		**20 000**
RPSF grant I	-	765	765
RPSF grant II	-	934	934
CRI grant	-	3 000	3 000
Beneficiaries	5 600	333	5 933
Borrower/recipient	4 852	606	5 466
Total	**72 452**	**5 647**	**78 098**

Table 2
Additional financing: programme costs by component (and subcomponent) and financier
(Thousands of United States dollars)

											Additional									
	IFAD grant		*IFAD loan*		*IFAD12*		*RPSF grant I*		*RPSF grant II*		*CRI grant*		*Beneficiaries*			*Borrower/recipient*			*Total*
Component/subcomponent	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Cash*	*In-kind*	*%*	*Cash*	*In-kind*	*%*	*Amount*
1. Production improvement and market linkage																			
1.1 Production and productivity improvement of selected commodities	8 863	42	2 235	11	5 260	25								3 544	17		1 359		21 260
1.2 Market-linkage investments	2 540	50	633	12	1 513	30								417	8				5 102
2. Market-related climate-resilient infrastructure																			
2.1 Water-related infrastructure	9 353	53	2 330	13	5 574	31											539		17 795
2.2 Market-led infrastructure	5 198	46	1 295	11	3 098	27								1 638	14		181		11 410
3. Institutional and policy strengthening and implementation support																			
3.1 Institutional strengthening and policy support	1 296	50	323	12	773	30											210		2 602
3.2 Programme coordination and implementation support services	6 354	45	1 583	11	3 786	27											2 560		14 282
4. Disaster risk reduction and management																			
4.1 Provision of nutrition-dense inputs and basic assets for production							515	13	498	13	2 337	60		274	7		270	7	3 894
4.2 Facilitated access to markets and post-harvest technologies							45	4	134	13	671	66		60	6		108	11	1 017
4.3 Targeted funds for rural financial services							-	-	-	-	-	-		-	-		5	100	5
4.4 Delivery of agriculture-related information through digital services							205	28	302	41	-	-		-	-		223	31	731
Total	**33 604**	**43**	**8 398**	**11**	**20 004**	**26**	**765**	**14**	**934**	**17**	**3 008**	**53**		**5 932**	**8**		**5 454**	**11**	**78 098**

Table 3
Additional financing: programme costs by expenditure category and financier
(Thousands of United States dollars)

	IFAD grant		IFAD loan		IFAD12		RPSF grant I		RPSF grant II		CRI grant		Additional Beneficiaries			Additional Borrower/recipient			Total
Expenditure category	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Cash*	*In-kind*	*%*	*Cash*	*In-kind*	*%*	*Amount*
Investment costs																			
1. Funds	226	27	56	7	135	16								417	50				833
2. Works	12 990	50	3 236	12	7 741	30			40	0.2	197	1		1 841	7				26 046
3. Consultancies	104	11	26	3	62	7	143	15			587	62					30	3	951
4. Studies	1 420	54	354	14	846	32													2 620
5. Training	1 701	50	424	12	1 013	30	66	2									220	6	3 424
6. Equipment and material	6 976	39	1 765	10	4 135	23	522	3	894	5	2 146	12		1 084	6		384	2	17 905
7. Workshops	70	54	18	14	42	32													130
8. Meetings	127	54	32	14	76	32													234
9. Technical assistance	4 335	44	1 080	11	2 584	26											1 770	18	9 769
Total investment costs	**27 949**	**45**	**6 989**	**11**	**16 634**	**27**	**731**	**1**	**934**	**2**	**2 930**	**5**		**3 341**	**5**		**2 403**	**4**	**61 911**
Recurrent costs																			
1. Travel costs	386	53	96	13	230	32	10	1											722
2. Operation and maintenance	97	3	24	1	58	2								2 591	71		867	24	3 637
3. Salaries	3 738	42	931	11	2 227	25	24	0.3			35	0.4					1 883	21	8 838
4. Allowances and benefits	1 201	54	299	14	716	32													2 215
5. Office and general expenses	234	30	58	8	139	18					43	6					300	39	775
Total recurrent costs	5 655	35	1 409	9	3 370	21	34	0.2			78	1		2 591	16		3 050	19	16 187
Total	**33 604**	**43**	**8 398**	**11**	**20 004**	**26**	**765**	**1**	**934**	**1**	**3 008**	**4**		**5 932**	**8**		**5 454**	**7**	**78 098**

Table 4
Programme costs by component and programme year
(Thousands of United States dollars)

Component/subcomponent	2020 Amount	2021 Amount	2022 Amount	2023 Amount	2024 Amount	Total Amount
1. Production improvement and market linkages						
1.1. Production and productivity improvement of selected commodities	2 707	5 161	5 076	4 747	3 750	21 260
1.2. Market-linkage investments	970	1 081	994	1 006	1 051	5 102
2. Market-related climate-resilient infrastructure						
2.1. Water-related infrastructure	1 169	3 953	5 127	4 642	2 904	17 795
2.2. Market-led infrastructure	339	4 004	3 950	2 534	532	11 410
3. Institutional and policy strengthening and implementation support						
3.1. Institutional strengthening and policy support	497	792	597	403	332	2 602
3.2. Programme coordination and implementation support services	3 343	2 658	2 762	2 655	2 864	14 282
4. Disaster risk reduction and management						
4.1. Provision of nutrition-dense inputs and basic assets for production		1 212	1 307	996	379	
4.2. Facilitated access to markets and post-harvest technologies		597	340	80		
4.3. Targeted funds for rural financial services		5				
4.4. Delivery of agriculture-related information through digital services		670	61			
Total	**9 067**	**20 133**	**20 213**	**17 062**	**11 623**	**78 098**

Financing and cofinancing strategy and plan

31. PROCAVA is cofinanced by an IFAD grant to countries in or at high risk of debt distress in the amount of US$33.6 million; an IFAD loan of US$8.4 million; Government of Mozambique US$4.9 million; programme beneficiaries and private sector US$5.6 million. PROCAVA was expected to receive US$20.0 million in cofinancing from GCF, which was not approved as programmed; the IFAD12 grant for additional financing will close the gap.

32. The additional IFAD12 grant to countries in or at high risk of debt distress financing will cover the GCF US$20.0 million that has not yet materialized to secure phase 1 (2020–2025) programme interventions. It is worth noting that for phase 2, part of the programme funds (2026–2030) has been secured with cofinancing from AfDB (US$33.0 million) and the expected IFAD13 allocation for Mozambique.

Disbursement

33. The original IFAD financing is expected to cover 58 per cent of the total original programme costs, with civil works accounting for 39 per cent and equipment and materials, 21 per cent. Operating expenses have been calculated at 10 per cent of total funds, while salaries will absorb 11 per cent. Although the use of government systems that meet the minimum standards will be encouraged, PROCAVA will be required to use an accounting package to facilitate reporting in the required formats, an area not yet supported by the government Financial Administration System [*Sistema de Administração Financeira do Estado*] (e-SISTAFE). A designated account has been opened with Bank of Mozambique to receive PROCAVA funds, which flow through e-SISTAFE to the government line ministry and are then allocated to the programme management unit (PMU). At the provincial level, funds are e-disbursed to the MADER single treasury account for the programme. All major programme payments are centralized at the PMU level. The funds will be disbursed to the programme under the designated account replenishment procedure.

Summary of benefits and economic analysis

34. The additional financing to cover the GCF gap will not affect the programme's economic and financial analysis, which was recalculated to incorporate the additional financing from the RPSF and CRI. PROCAVA's overall revised economic internal rate of return (EIRR) is estimated at 18.2 per cent compared to the projection at design of 16.7 per cent. The economic net present value (ENPV) is 11,691.6 million Mozambican meticals, or US$194.9 million, at a 10 per cent social discount rate. As the ENPV is positive and the EIRR is higher than the social discount rate, PROCAVA is deemed economically viable and acceptable for investment.

35. Financial benefits will be seen in terms of higher farm productivity and higher financial returns to the households targeted by PROCAVA. Social benefits will include a reduction in poverty rates in the targeted PROCAVA areas, with special measures to ensure the inclusion of disadvantaged groups. This will be an effect of the increased financial returns to households as a result of their participation in the various programme interventions.

36. The sensitivity analysis shows that a reduction of up to 20 per cent in programme benefits would not jeopardize PROCAVA's economic viability. An increase of up to 30 per cent in programme costs would not seriously affect the programme's economic viability, since the ENPV would remain positive and the EIRR well above the social discount rate.

Exit strategy and sustainability

37. PROCAVA's implementation will be fully mainstreamed in the Government's institutional, strategy and policy framework; this integration will continue after programme completion, and institutional capacity will have been considerably

strengthened. In addition, the participatory design process will ensure that PROCAVA responds directly to target beneficiary concerns. This will lay the foundation and provide the necessary commitment for post-PROCAVA continuity. Moreover, qualifying stakeholders will be linked to available financing options, including the IFAD-funded Rural Enterprise and Financing Project, to enable them to access different financial products on offer.

III. Risk management

A. Risks and mitigation measures

38. The following institutional, economic, social and environmental risks were identified in the PROCAVA design process. The relevant mitigation measures are included in the integrated programme risk matrix.

Table 4
Risks

Risks	*Risk rating*
Political/governance	Substantial
Macroeconomic	Moderate
Sector strategies and policies	Low
Institutional capacity	Moderate
Fiduciary	
Financial management	Moderate
Procurement	Moderate
Environment and climate	Moderate
Social	Moderate
Other risks	
Cultural heritage	No risk is envisaged
Labour and working conditions	Low

B. Environment and social category

39. PROCAVA's environmental and social categorization is "A." PROCAVA will develop and/or rehabilitate irrigation systems, some of which will be larger than 100 ha per system. These systems are likely to pose a risk of significant and/or adverse environmental and social impacts. Other infrastructure development, such as the construction of livestock and water control structures, may result in the removal of vegetation and changes in land use. The intensification of agriculture may lead to deforestation and soil and water pollution. These risks can lead to the degradation of ecosystems, loss of biodiversity, less availability of natural resources, loss of social cohesion and greater vulnerability of the target population. An overall Environment and Social Management Framework (ESMF) was prepared to establish principles, guidelines and procedures to comprehensively assess the risks (environment, climate and social) and impacts associated with PROCAVA and its subprojects. Environmental and social impact assessments were conducted and environmental and social management and monitoring plans (ESMPs) developed to mitigate the risks associated with these category A projects. The rest of the proposed programme interventions are expected to pose medium-level risks to the environment and social system. These risks will be localized, manageable and/or reversible through recommended mitigation measures. The preparation of site-specific ESMPs for all category B subprojects is currently under way to systematically identify, assess, mitigate and manage potential environmental and social risks and impacts associated with a project, ensuring compliance with regulations and promoting responsible and sustainable practices.

C. Climate risk classification

40. PROCAVA's climate risk classification is "high". Mozambique faces significant climate risks, including cyclones, flooding and droughts, exacerbated by climate change. These events pose threats to infrastructure, agriculture and overall socioeconomic stability in the targeted areas, exacerbating food and water insecurity. A detailed climate risk assessment covering all PROCAVA districts, value chains and subprojects was therefore conducted to guide site selection and the design of suitable interventions for each stage of implementation. The report comprehensively identifies risks and includes relevant mitigation measures, which include guidance on monitoring and reporting. Programme investments will focus on crop and livestock systems that are sensitive to climate change, and project measures to reduce vulnerability have been developed. The programme includes interventions to increase climate resilience, such as the promotion of drought-resistant cassava varieties, multifunctional boreholes, shade cloths, small-scale irrigation, climate, weather and market information systems, conservation agriculture, animal supplementation and renewable energy.

IV. Implementation

A. Compliance with IFAD policies

41. The programme is fully compliant with IFAD policies, and the additional funding meets all IFAD conditions.

B. Organizational framework

Management and coordination

42. MADER is the lead executing agency. It will be responsible for overseeing PROCAVA implementation and delegate the lead implementing agency role to the Fund for Agricultural Promotion and Rural Extension (FAR, FP).

43. A national programme management unit (NPMU), based in Maputo, is under the direct supervision of FAR, FP's Director-General. The NPMU is responsible for PROCAVA's day-to-day management and supervision, under the leadership of a national programme coordinator. Given PROCAVA's geographical spread, programme management will be organized into subunits, with responsibilities delegated to regional and provincial programme management units to adequately cover PROCAVA's target geographical regions.

Financial management, procurement and governance

44. **Financial management.** PROCAVA was assessed as having substantial inherent financial management (FM) risk due to the country context. However, its residual risk is assessed as moderate, as the programme has acceptable financial management performance. FM risk assessments are updated as part of annual supervisions, which have determined that the systems in place provide adequate controls and ensure proper management of programme funds. FM risks will continue to be assessed throughout implementation.

45. As with other ongoing projects in Mozambique, FM is mainstreamed in government systems. Although government payment and financial reporting systems are used, the programme is also using an off-the-shelf accounting package to mitigate the reporting challenges of the government system (e-SISTAFE). At the same time, ongoing discussions will take place on potential improvements in e-SISTAFE to facilitate financial monitoring and reporting. Programme planning and budgeting are aligned with the government calendar.

46. **Audit.** To date, PROCAVA has been audited by private audit firms; however it has been agreed that as of fiscal year 2023, the programme will be audited by the supreme audit institution of Mozambique, the *Tribunal Administrativo*, following international auditing standards.

47. **Procurement.** The existing legal framework for public procurement in Mozambique is currently governed by the new decree 79/2022, which sets forth the principles and procedures to be applied in any procurement by public authorities and institutions governed by public law, under public control or using public funds.

48. **Governance.** Programme governance is overseen by the national programme steering committee as the programme's governing body. While primary responsibility for the enforcement of good governance rests with the Government of Mozambique, all programme stakeholders were made aware that IFAD has a zero-tolerance policy towards fraudulent, corrupt, collusive or coercive activities in IFAD-financed programmes.

C. Monitoring and evaluation, learning, knowledge management and strategic communication

49. PROCAVA's results-based logical framework is the foundation for the programme's M&E system. The NPMU is responsible for M&E, which is carried out at various levels to support effective implementation, maintain the programme's focus and direction, provide information to address constraints and ensure output and outcome delivery. PROCAVA's M&E system is supported by an online ODK-based monitoring system, to be developed and installed at the regional and national levels.

D. Proposed amendments to the financing agreement

50. An amendment to the financing agreement will be necessary to formalize allocation of the additional US$20.0 million from the IFAD12 grant to countries in or at high risk of debt distress to replace the GCF funds that did not materialize as programmed.

V. Legal instruments and authority

51. A financing agreement between the Republic of Mozambique and IFAD will constitute the legal instrument for extending the proposed financing to the recipient. The signed financing agreement will be amended following approval of the additional financing.

52. The Republic of Mozambique is empowered under its laws to receive financing from IFAD.

53. I am satisfied that the proposed additional financing will comply with the Agreement Establishing IFAD and the Policies and Criteria for IFAD Financing.

VI. Recommendation

54. I recommend that the Executive Board approve additional financing in terms of the following resolution:

> RESOLVED: that the Fund shall provide an IFAD grant to countries in or at high risk of debt distress to the Republic of Mozambique in an amount of twenty million United States dollars (US$20,000,000) and upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented herein.

Alvaro Lario
President

Updated logical framework incorporating the additional financing

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Base line	Midterm	End Target	Source	Frequency	Responsibility	
Outreach	**1.b Estimated corresponding total number of households members**				Project records, national statistics	Bi-annually	PMU	PMU and Implementing partners have Reliable M&E with a coding system to track beneficiaries at individual and household levels
	Household members - Number of people	0	608250	1059500[4]				
	1.a Corresponding number of households reached				Project records, national statistics	Bi-annually	PMU	
	Households - Number	0	121650	211900[5]				
	1 Persons receiving services promoted or supported by the project				Project records, national statistics	Bi-annually	PMU	
	Females - Number	0	76180	108800				
	Males - Number	0	76180	108800				
	Young - Number	0	45700	65280				
	Total number of persons receiving services - Number	0	206805	217600 254280				
Project Goal To contribute to poverty reduction, improved food and nutrition security and resilient livelihoods for inclusive rural transformation	**Percentage (Number) of rural people experiencing changes in economic status (10% or more) including income, food diversity or nutrition**				National Poverty Evaluation Report; Household surveys; Demographic Surveys; Vulnerability Assessment reports/Survey	Completion	MASA/DCPI, INE, MEF, UNICEF, WFP, PMU	Stable political, social and macro-economic environment prevails
	People - Percentage (%)	7[6]		15				
	Number of people with strengthened resilience (20% or more)							
	People - Number[7]		79200	113150				
	Females - Number		39600	56575				
	Males - Number		39600	56575				
	Young - Number		23760	33945				
Development Objective To increase net income from climate resilient Agrifood value chains by rural women, men and youth	**Percentage of increased household farm incomes**				Outcome surveys; household surveys	Baseline, MTR, completion	MASA/DCPI, INE, MEF	The ongoing political and economic commitment in investing in the agricultural sector by government maintained
	Young - Number			203063				
	Women-headed households - Number			TBD				
	Increase in income - Percentage (%)		50	150				
	IE 2.1 Individuals demonstrating an improvement in empowerment							
	Total Persons – Number	0	103402	127140				
	Total persons (%)	0	50	50				
	Females – Number	0	51701	63570				
	Females (%)	0	50	50				
	Males – Number	0	51702	63570				
	Males (%)	0	50	50				
Outcome 1.1 Smallholders productivity, production and	**Percentage of persons/households reporting an increase in productivity**				Annual Production Surveys, MASA			Communities participate actively in interventions made;
	Households - Percentage (%)	0	40[8]	75				

[4]Average household size in Mozambique is 5 persons per household; 50 per cent women; 30 per cent youth.
[5]9200 HH in Horticulture VC; 38,500HH in Cassava VC; 47,000 HH in Legumes VC; 85,800 HH in Livestock VC (79,000 Red Meat and 6,800 poultry). Additional 31,400 households targeted by RPSF I&II (15,125 HHs) and CRI I (16,275 HHs).
[6]Poverty levels in the rural areas reduced by 7 per cent between 2008 and 2014, ref National Poverty Evaluation report IOF2014/2015.
[7] As per updated logframe (in ORMS).
[8]Assuming an adoption rate of 40 per cent and 100 per cent by end of project.

Results Hierarchy	Indicators: Name	Base line	Midterm	End Target	Means of Verification: Source	Frequency	Responsibility	Assumptions
quality of targeted value chains improved					Annual Reports, thematic studies			Farmers have adequate resources to acquire productive inputs; Stable weather conditions
	3.2.2 Households reporting adoption of environmentally sustainable and climate-resilient technologies and practices				Production surveys	Baseline, MTR, Completion		
	Households - Percentage (%)	9	40	75[9]				
	Total number of household members - Number		243300	794625				
	Males - Number		121650	397313				
	Females - Number		121650	397313				
	Young - Number		72990	238388				
	Women-headed households - Number		9732	31785				
	Households - Number		48660	158925				
	1.2.8 Women reporting minimum dietary diversity (MDDW)							
	Women (%)	25	40	75				
	Women (number)	0	90250	338440				
	Households (%)	25	40	75				
	Households (number)		18050	67690				
	Households members	0	180500	676880				
	3.2.1 Ton of Greenhouse gas emissions (tCO2e) avoided and/or sequestered							
	Hectares of land	0		87110				
	tCO2e/20 years	0		-796226				
	tCO22/ha	0		-9.1				
	tCO2e/ha/year	0		0.5				
Output 1.1.1 Production and productivity-enhancing inputs and climate-smart technological packages are made available to smallholder producers of selected crops and livestock commodities	**1.1.3 Rural producers accessing production inputs and/or technological packages**				Project progress reports	Annual	PMU	Improved Land tenure agreement in place
	Females - Number	0	76160	108800				
	Males - Number	0	76160	108800				
	Young - Number	0	45696	65280				
	Total rural producers - Number	0	152320	217600[10]				
Output 1.1.2 Livestock production related infrastructure established	**Number of livestock production infrastructures constructed or rehabilitated**				Project progress reports	Semi-Annual	PMU	
	Livestock production infrastructure - Number	0	72[11]	144				
Output 1.1.3 Community-based natural resources management plans (CBNRM) prepared and established in Meat VC	**3.1.1 Groups supported to sustainably manage natural resources and climate-related risks**				Project progress reports	Semi-Annual	PMU	
	Groups supported - Number	0	17	43				
	Total size of groups:	0	340	860				
	Females	0	170	430				

[9] 50 per cent women, 30 per cent youth and 20 per cent women-headed households.
[10] 6,800 producers (6,000 open fields and 800 under drip kits/shade cloths), 45,000 CVC producers + 80,000 Legume Producers (54,000 VC and 26,000NVC) + 85800 LVC (79,000 red meat and 6,800 poultry producers).
[11] As per the PDR cost-tables (12 dip tanks and 60 crush pens).

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Base line	Midterm	End Target	Source	Frequency	Responsibility	
	Males	0	170	430				
	Young	0	102	258				
	Persons with Disabilities	0	20	45				
Outcome 1.2 Value chain linkages have improved between smallholder farmers and other value chain actors	**2.2.3 Rural producers' organizations engaged in formal partnerships/agreements or contracts with public or private entities**				Project reports, Outcome/ household surveys, Market surveys	Baseline, MTR, Completion	PMU	Communities participate actively in interventions made
	Percentage of POs - Percentage (%)		20	50				
Output 1.2.1 Smallholder farmers organizational, technical and business management skills are strengthened	**2.1.3 Rural producers' organizations supported**				Project progress reports	Semi-Annual	PMU	
	Rural POs supported - Number	0	500[12]	700				
	Total size of POs – Number of people	0	10000	14000				
	Females	0	5000	7000				
	Males	0	5000	7000				
	Young	0	3000	4200				
	Persons with Disabilities	0	500	700				
	Rural POs supported that are headed by women	0	25	35				
	1.1.8 Households provided with targeted support to improve their nutrition							
	Total Persons participating	0	116784	203424				
	Males	0	58392	101712				
	Females	0	58392	101712				
	Households	0	38928	67808				
	Household members benefited	0	194640	324040				
	Young	0	35035	61027				
Output 1.2.2 Climate, weather and market information system is developed and operational	**3.1.2 Persons provided with climate information services**				Project progress reports	Semi-Annual	PMU	
	Females - Number	0	14960	37400				
	Males - Number	0	14960	37400				
	Persons provided with climate information services - Number	0	29920	74800				
Output 1.2.3 Value chain platforms are established and strengthened	**Policy 2 Functioning multi-stakeholder platforms supported**				Project progress reports	Semi-Annual	PMU	Conducive regulatory framework for contract enforcement; Trust among smallholder farmers and different stakeholders in the targeted value chains; Balanced negotiation power for win-win partnerships
	Number - Number		38	75				
	2.2.6 Households reporting improved physical access to markets, processing and storage facilities[13]				Project progress reports		MASA/DPCI, PMU	

[12] More groups capacitated under CRI (Agribusiness and Market Linkages and Access to Finance) to assist recovery from CRI effects.
[13] 50 per cent women, 30 per cent youth and 20 per cent women-headed households.

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Base line	Midterm	End Target	Source	Frequency	Responsibility	
Outcome 2. Market-related climate-resilient infrastructure has improved	Households reporting improved physical access to markets	0	20	50		Baseline, MTR, Completion		
	Women-headed households	0	7220	18050				
	Households reporting improved physical access to processing facilities	0	20	50				
	Women-headed households	0	7220	18050				
	Households reporting improved physical access to storage facilities	0	4	8				
	Women-headed households	0	1444	2888				
	Households reporting improved physical access to markets - Number		36100	90250				
	Households reporting improved physical access to processing facilities - Number		36100	90250				
	Households reporting improved physical access to storage facilities - Number		7220	14440				
Output 2.1 Water-related infrastructure rehabilitated or Constructed	**1.1.2 Farmland under water-related infrastructure constructed/rehabilitated**				Project progress reports	Simi-annual	PMU	
	Hectares of land - Area (ha)	0	1500	3000				
Output 2.2 Market-led value chain infrastructure rehabilitated or constructed	**2.1.6 Market, processing or storage facilities constructed or rehabilitated**				Project progress reports	Semi-annual		
	Market facilities constructed/rehabilitated - Number		14[14]	20				
	Processing facilities constructed/rehabilitated - Number		22[15]	50				
	Storage facilities constructed/rehabilitated - Number		2	4				
Outcome 3. Institutional and policy framework for inclusive and climate-resilient value chain development has improved	**Policy 3 Existing/new laws, regulations, policies or strategies proposed to policy makers for approval, ratification or amendment**				Project reports, outcome surveys	Baseline, MTR, Completion	PMU	Favourable regulatory framework and enabling environment
	Number - Number	0	5[16]	7				
Output 3.1 Institutional capacities (public, private and PO) strengthened for effective	**Number of staff of public and private entities trained on project implementation, gender and land tenure security**				Project progress reports	Annual	PMU	
	Staff of public and private entities - Number	0	1,000[17]	1500				

[14] Wholesale in Xai-Xai (1), Sanga Market (1), 3 retail markets in Inhambane and 9 livestock marketing facilities (cattle fairs) as per the approved costtabs.
[15] 10 cassava processing facilities + 5 slaugtherslabs + 1 slaughterhouse + 6 vegetable packhouses (as per PDR costtabs).
[16] PEDSA 2030 - approved, Land Policy - approved, Gender Strategy - Tender, Standards on inclusion of cassava flour - Not Started (CRI); Extension Master Plan - Tender; Agriculture Sector Strategy - Not Started.
[17] All staff in PROCAVA target districts are being trained, MADER reduced reach from 250 to 100 HH per technician (to ensure quality assistance) and ToT training model led by Technical Extensionists recruited by MADER which allows training of more extensionists. This will ensure more availability of skilled extensionists assisting farmers on a frequent basis which will assist recovery from the various calamities that affected Mozambique (IDAI, Gombe and Kenneth Cyclones and COVID-19 as well as insurgency).

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Base line	Midterm	End Target	Source	Frequency	Responsibility	
functioning of the targeted value chains								
Output 3.2 Policies and strategies developed for the effective and structure development of targeted VC	**Policy 1 Policy-relevant knowledge products completed**				Project progress reports	Semi-annual	PMU	
	Number - Number	0	5[18]	7				

[18] PEDSA 2030 - approved, Land Policy - approved, Gender Strategy - Tender, Standards on inclusion of cassava flor - Not Started (CRI); Extension Master Plan - Tender; Agriculture Sector Strategy - Not Started.

Updated summary of the economic and financial analysis

Table A: Financial cash flow models

Several financial models were developed to determine the financial viability of PROCAVA. All enterprises used were found financially viable to be able to seek for additional grant funds. The table below summarizes the financial viability assessment for PROCAVA.

	Farm models' net incremental benefits (in MZN)										
	Horticulture (Tomatoes, Green Pepper, Lettuce)	Horti. With shadenets (Tomatoes, Green Pepper)	Maize and Potato farm	Legume Farm (Dry beans, Soyabean, Sesame)	Cassava Farm	Cassava Processing Unit	Livestock - Cattle Production	Free Range Chicken Small Production	Semi Commercial Chicken Small Production	Cattle Feedlot	Slaughter House
						MZN '000				MZN '000	MZN '000
PY1	(30,570)	(21,554)	(6,405)	(11,439)	(1,535)	(1,904)	(16,084)	(13,405)	(28,152)	(21)	14,701
PY2	(3,560)	(3,882)	(914)	(4,832)	(1,054)	1,516	(9,365)	12,253	693	812	17,231
PY3	30,779	75,532	22,488	4,885	2,933	1,658	2,495	11,828	5,251	1,201	19,201
PY4	30,779	70,683	34,452	14,602	3,510	1,924	19,426	10,903	22,425	1,396	22,152
PY5	30,779	92,020	34,452	14,602	4,712	1,811	36,357	12,403	29,260	1,396	22,152
PY6	30,779	92,020	34,452	14,602	4,712	1,811	53,954	13,403	24,260	1,396	23,344
PY7	30,779	92,020	34,452	14,602	4,712	1,924	53,954	9,903	28,060	1,396	23,344
PY8	30,779	92,020	34,452	14,602	4,712	1,811	53,954	13,403	29,260	1,396	23,344
PY9	30,779	92,020	34,452	14,602	4,712	1,811	53,954	12,403	29,260	1,396	23,344
PY10	30,779	92,020	34,452	14,602	4,712	1,924	53,954	10,903	28,060	1,396	23,344
PY11	30,779	92,020	34,452	14,602	4,712	1,811	53,954	12,403	24,260	1,396	23,344
PY12	30,779	92,020	34,452	14,602	4,712	1,811	53,954	13,403	29,260	1,396	23,344
PY13	30,779	92,020	34,452	14,602	4,712	1,924	53,954	9,903	28,060	1,396	23,344
PY14	30,779	92,020	34,452	14,602	4,712	1,811	53,954	13,403	29,260	1,396	23,344
PY15	30,779	92,020	34,452	14,602	4,712	1,811	53,954	12,403	29,260	1,396	23,344
PY16	30,779	92,020	34,452	14,602	4,712	1,924	53,954	10,903	23,060	1,396	23,344
PY17	30,779	92,020	34,452	14,602	4,712	1,811	53,954	12,403	29,260	1,396	23,344
PY18	30,779	92,020	34,452	14,602	4,712	1,811	53,954	13,403	29,260	1,396	23,344
PY19	30,779	92,020	34,452	14,602	4,712	1,924	53,954	9,903	28,060	1,396	23,344
PY20	30,779	92,020	34,452	14,602	4,712	1,811	53,954	13,403	29,260	1,396	23,344
IRR/**	59%	139%	157%	51%	90%	87%	64%	89%	47%	3980%	*NA*
NPV ($)	88,100	234,196	89,827	36,219	10,499	4,860	90,264	32,645	45,031	4,566	89,668

Table B: Project costs and log-frame targets

Table B provides overall project costs by components and beneficiaries. The total project costs have been estimated at US$78.1 million over a five-year project implementation period. The project will support a total of 220,000 households equivalent to 1,100,000 household members assuming 5 people per household. The cost per household has been estimated at US$355 and the cost per household member has been estimated at US$71. The table below summarizes the expected outcomes of the project interventions and indicators linked to Log frame.

PROGRAMME COSTS AND INDICATORS FOR LOGFRAME				
TOTAL PROGRAMME COSTS (in million USD)			78.1	
Beneficiaries	**1,100,000**	people	220,000	**Households**
Cost per beneficiary	**71**	USD x person		355
				US$
Components and Cost (USD million)		Average increase in Rural income per capita		
A. Production Improvement and Market Linkages	26.4	Average increase in income per HH per year		
B. Market-related Climate Resilient Infrastructure	29.2			
C. Institutional and Policy Strengthening and Implementation Support	16.9			
D. Disaster Risk Reduction and Management	5.6			
Total	**78.1**			

Table C: Main assumptions and shadow prices

Table C provides data on the expected yield per hectare for the models used to estimate the project viability. It also summarizes some of the main input prices included in the models. All local costs were converted into their approximate economic values using a Standard Conversion Factor (SCF) of 0.90. The economic analyses include the investment and incremental recurrent costs of the project components. The project's financial costs have been converted to economic values by removing price contingencies, taxes and duties. To avoid double counting, the final aggregation considered only those costs that were not included in the financial models.

	MAIN ASSUMPTIONS & SHADOW PRICES						
	Output	**land Size**	Yields (Annually) Kg				
			WOP	WP	Price (MZN)		
FINANCIAL	Horticulture (Tomatoes, Green Pepper, Lettuce)	1 Ha	16,000.0	28,000.0	18		
	Horti. With shadenets (Tomatoes, Green Pepper	1 Ha		30,000.0	18		
	Maize and Potato farm	1 Ha	2,500.0	4,500.0	15		
	Legume Farm (Dry beans, Soyabean, Sesame)	1 Ha	1,300.0	1,800.0	60		
	Cassava Farm	1 Ha	10,000.0	17,000.0	3		
	Cassava Processing Unit			75,000.0	30		
	Livestock - Cattle Production		18.9	30.4	500		
	Free Range Chicken Small Production		50.0	100.0	230		
	Semi Commercial Chicken Small Production		-	500.0	230		
	Cattle Feedlot		-	48.0	27,300		
	Slaughter House		-	3,000.0	3,000		
Economi	Standard Conversion Factor	0.90		Discount rate for Financial Analysis			22%
	Labour Conversion Factor	0.76		Discount rate for Economic Analysis			10%

Table D: Beneficiary adoption rates and phasing

Beneficiary phasing has been derived as follows:

#	Activity	# enterprises	Project Years # beneficiaries HHs	2020	2021	2022	2023	2024	Total
						Phasing of enterprises			
1	Horticulture farm	9,000	9,000	1,097	2,315	2,282	1,991	1,314	9,000
2	Horticulture farm under shadenet	500	500	61	129	127	111	73	500
3	Maize and potatoes farm	**12,100**	12,100	1,475	3,113	3,068	2,677	1,767	12,100
4	Legume farm	**45,000**	45,000	5,485	11,576	11,411	9,957	6,571	45,000
5	Cassava farm	**59,500**	59,300	7,228	15,254	15,038	13,121	8,659	59,300
6	Cassava Processing Unit	20	200	24	51	51	44	29	200
7	Livestock production	**82,000**	81,692	9,958	21,015	20,716	18,076	11,928	81,692
8	Free Range Chicken small production	**10,000**	10,000	1,219	2,572	2,536	2,213	1,460	10,000
9	Semi-commercial Chicken production	**1,900**	1,900	232	489	482	420	277	1,900
10	Cattle mini feedlot	17	272	33	70	69	60	40	272
11	Slaughterhouse	3	36	4	9	9	8	5	36
	Total		**220,000**						**220,000**

Table E: Economic cash flow

The table below presents the net incremental benefit of the project. Net incremental costs include all project costs while avoiding double counting. The analysis shows that the project has the capacity to generate an Economic Rate of Return (ERR) of 18.2 per cent over a 20-year period of implementation. The base case Net Present Value (NPV) of the project's net benefit stream, discounted at 10 per cent, is 11,691.6 million (Mozambican Meticals) equivalent to US$ 194.9 million

Project year	BENEFITS Net Incremental Farm/Enterprise Benefits	 Total Net Inc. Benefits (millions)	COSTS Project Economic Investment Costs	 Total Incremental Costs	CASH FLOW
PY1	(4,026)	- *4,026*	473	*473*	**(4,499)**
PY2	(4,107)	- *4,107*	998	*998*	**(5,105)**
PY3	(3,027)	- *3,027*	984	*984*	**(4,011)**
PY4	(1,273)	- *1,273*	858	*858*	**(2,132)**
PY5	626	*626*	566	*566*	**60**
PY6	*3,158*	*3,158*		-	**3,158**
PY7	*4,372*	*4,372*		-	**4,372**
PY8	*5,142*	*5,142*		-	**5,142**
PY9	*5,541*	*5,541*		-	**5,541**
PY10	*5,672*	*5,672*		-	**5,672**
PY11	*5,689*	*5,689*		-	**5,689**
PY12	*5,695*	*5,695*		-	**5,695**
PY13	*5,671*	*5,671*		-	**5,671**
PY14	*5,690*	*5,690*		-	**5,690**
PY15	*5,694*	*5,694*		-	**5,694**
PY16	*5,672*	*5,672*		-	**5,672**
PY17	*5,689*	*5,689*		-	**5,689**
PY18	*5,695*	*5,695*		-	**5,695**
PY19	*5,671*	*5,671*		-	**5,671**
PY20	*5,690*	*5,690*		-	**5,690**
NPV@ 10% (MZN million)					**11,691.6**
NPV@ 10% (US$ million)					**194.9**
EIRR					**18.2%**
BCR	Benefits/Costs Ratio	68,938	**3,880**	17.8	

Table F: Sensitivity analysis

A sensitivity analysis has been carried out to test the robustness of the above results. The outcomes are presented in table below. The sensitivity analysis investigates the effect of fluctuations in project costs, benefits and delays in implementation on the NPV and EIRR. It shows the economic impacts that a decrease in project benefits of up to 20 per cent will have on the project's viability. Similarly, it shows how the economic viability of the project will be affected with an increase of up to 30 per cent in project costs and with one and/or two-year delay in project implementation. A sensitivity analysis shows that the EIRR drops to 17.6 per cent with a 20 per cent increase in project costs. a 10 per cent increase in costs yields a low EIRR of value 17.9 per cent, and a delay of project aggregate benefits by one to two years still yields a low ERR of 15.0 per cent and 10.8 per cent respectively. The overall analysis shows that the economic viability of the project remains attractive by preserving positive NPV and EIRR in each case.

	Base case	**Reduction in project benefits**			**Increase in project costs**			**Delay in accrual of project benefits**	
Indicator	10%	-10%	-20%	-30%	10%	20%	30%	1 year	2 year
ENPV (millions MZN)	11,691.6	7,150	2,609	-1,932	11,398	11,105	10,812	6,306	1,412
ENPV (millions USD)	**194.9**	**119**	**43**	**-32**	**190**	**185**	**180**	**105**	**24**
EIRR	0.2	15.3%	12.1%	8.3%	17.9%	17.6%	17.3%	15.0%	10.8%
Reduction in project benefits	**WO**	**WP**							
PY	**1 to 20**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**.8-20**
-10%	3,616,365	(841,771)	(1,439,222)	(453,270)	1,250,212	3,251,925	6,096,873	7,189,928	7,882,663
		(4,458,136)	(5,055,587)	(4,069,634)	(2,366,152)	(364,440)	2,480,508	3,573,563	4,266,298
-20%	3,616,365	(800,784)	(1,390,195)	(512,218)	1,015,919	2,827,659	5,419,443	6,391,047	7,006,812
		(4,417,149)	(5,006,560)	(4,128,583)	(2,600,445)	(788,705)	1,803,078	2,774,682	3,390,447
-30%	3,616,365	(759,798)	(1,341,169)	(571,166)	781,626	2,403,394	4,742,012	5,592,166	6,130,960
		(4,376,162)	(4,957,533)	(4,187,531)	(2,834,739)	(1,212,971)	1,125,648	1,975,802	2,514,595
Increase in project costs									
10%	3,616,365	(930,047)	(1,588,047)	(492,702)	1,398,663	3,619,544	6,774,303	7,988,809	8,758,514
		(4,546,412)	(5,204,411)	(4,109,067)	(2,217,702)	3,179	3,157,939	4,372,444	5,142,150
20%	3,616,365	(977,336)	(1,687,845)	(591,082)	1,312,820	3,562,897	6,774,303	7,988,809	8,758,514
		(4,593,701)	(5,304,210)	(4,207,447)	(2,303,544)	(53,467)	3,157,939	4,372,444	5,142,150
30%	3,616,365	(1,024,625)	(1,787,643)	(689,462)	1,226,978	3,506,251	6,774,303	7,988,809	8,758,514
		(4,640,990)	(5,404,008)	(4,305,827)	(2,389,387)	(110,114)	3,157,939	4,372,444	5,142,150
Reduction in all benefits due to delays in implementation									
1 year	3,616,365	(472,891)	(1,407,849)	(1,474,069)	(268,945)	1,776,468	4,242,654	6,774,303	7,988,809
		(4,089,256)	(5,024,214)	(5,090,434)	(3,885,309)	(1,839,897)	626,289	3,157,939	4,372,444
2 year	3,616,365	(472,891)	(997,982)	(1,393,670)	(1,348,692)	23,017	2,342,931	4,242,654	6,774,303
		(4,089,256)	(4,614,347)	(5,010,034)	(4,965,057)	(3,593,347)	(1,273,433)	626,289	3,157,939