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Report to the President Proposed additional financing to the Republic of Djibouti for the Soil and Water Management Programme (PROGRES)

Project ID: 2000000732

Note to Executive Board representatives

Approved on Tuesday 10 August 2021 Focal points:

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Abbreviations and acronyms

AF Adaptation Fund

AWPB Annual Work Plan and Budget

BCR Benefit Cost Ratio

CGEP Water Point and Pasture Management Committee

CPL Local Steering Committee

DA Designated Account

ECG Environment, Climate, Gender and Social Inclusion Division

EIRR Economic Internal Rate of Return

IGA Income Generating Activities

LOT Lapse Of Time Procedure

MAEPE-RH Ministry of Agriculture, Water, Fisheries and Livestock, in charge of

Hydraulic Resources

M&E Monitoring & evaluation

NEN Near East, North Africa and Europe Division

NPV Net Present Value

OCC Opportunity Cost of Capital
PMU Programme Management Unit

PRODERMO Rural Community Development and Water Mobilization Project

PROGRES Soil and Water Management Programme

PROLUC Projet de Réponse d'Urgence de Lutte contre le Criquet

PROMES-GDT Programme for the Mobilization of Surface Water and Sustainable Land

Management

PSC Programme Steering Committee

SAHP Water and Rangeland Management Plan

SWC Soil and Water Conservation

WFP World Food Programme

Financing summary

Initiating institution: IFAD

Borrower/recipient: Republic of Djibouti

Executing agency: Ministry of Agriculture, Water, Fisheries and

Livestock, in charge of Hydraulic Resources -

MAEPE-RH

Total programme cost: US\$17.05 million

Amount of original IFAD loan: US\$5.77 million

Amount of original IFAD grant: US\$0.3 million

Cofinancier: World Food Programme (WFP)

Amount of original cofinancing: US\$ 1.7 million (estimate) from WFP Food for

Work

Terms of cofinancing: Grant

Borrower/recipient original contribution: US\$2.52 million

Beneficiaries' original contribution: US\$0.70 million

Financing gap: US\$6.10 million

Terms of original IFAD financing:Blend: Maturity period of 25 years, including a

grace period of 5 years, with interest at a fixed rate of interest of 1.25 per cent and a service

charge of 0.75 per cent per annum

Amount of additional IFAD loan: US\$2.21 million

Terms of additional IFAD financing: Highly concessional: Maturity period of 40

years, including a grace period of 10 years with no interest rate and a service charge of 1.70 per cent per annum for loan denominated in US\$

Amount of additional international

cofinancing:

International Bank for Reconstruction and Development (IBRD), US\$0.09 million

PROLUC

Adaptation Fund, US\$2.33 million

Borrower/recipient additional

contribution:

US\$0.76 million

Beneficiaries' additional contribution: US\$0.14 million

Cooperating institution: Directly supervised by IFAD

Recommendation for approval

According to the delegation of authority procedure approved by the Executive Board at its 126th session and detailed in document EB 2019/126/R.48/Rev.2 the President is invited to approve the recommendation contained in paragraph 48.

I. Background and programme description

A. Background

- 1. The PROGRES was approved by the Executive Board by LOT (EB 2016/LOT/P.9), in September 2016. The Financing Agreement for the programme was signed on 23 January 2017 and ratified on 8 June 2017, which corresponds to the date of entry into force. The duration of the programme is 7 years; the current programme completion date is 30 June 2024, and the closing date is 31 December 2024. The mid-term review is planned in March 2022.
- 2. The programme is financed by: (i) IFAD loan of US\$5.77 million on blend terms and an IFAD grant of US\$0.3 million; (ii) WFP, with a contribution of food estimated at US\$1.7 million; (iii) the Government of Djibouti, with an estimated contribution of about US\$2.52 million; (iv) the beneficiaries, with a contribution valued at US\$0.7 million; and (v) a US\$6.1 million financing gap.
- 3. The Environment, Climate, Gender and Social Inclusion Division (ECG) and the Near East, North Africa and Europe Division (NEN), in collaboration with the Government of Djibouti, prepared a funding proposal (titled PROGIRES) that was reviewed by the Adaptation Fund (AF) Board in March 2021 and resubmitted in April 2021. PROGIRES will provide an amount of US\$2.33 million in supplementary financing to PROGRES, contributing significantly to meet the financing gap. Positive feedback was received from the AF Secretariat in May 2021 and official confirmation of that funding is expected in July 2021¹.
- 4. Despite the mobilization of these financial resources, there is still a financing gap of US\$1.56 million. IFAD and the Government of Djibouti agreed to rightsize the programme based on available resources and cancel the residual financing gap. To do so, implementation duration of the programme will be reduced by 12 months thanks to the remarkable efficiency gains. Indeed, PROGRES exceeded the physical targets set at mid-term and fully disbursed the initial IFAD financing. The revised completion date of the programme would be 30 June 2023 and the closing date would be 31 December 2023.

B. Original programme description

5. The overall objective of PROGRES is to contribute to sustainably improve living conditions and reduce poverty among rural communities in the programme area. This will be achieved through improving rural households' access to water and local resources, and resilience to climate change. The original design of the programme as approved by the Executive Board in September 2016 remains unchanged and is described below.

II. Rationale for additional financing

A. Rationale

6. The PROGRES exceeded its mid-term targets and its effectiveness and performance are both rated satisfactory by the supervision missions during 2018-2020. Main results achieved at mid-term include: (i) PROGRES achieved 100 per cent of the mid term target for the formation of local steering committees (CPL) and water

¹ The total funding of PROGIRES is US\$ 5.34 million, which also includes supplementary financing of the recent PGIRE project and IFAD Agency Fees.

point and pasture management committees (CGEPs), and all are functional. The water and rangeland management plans (SAHP) for all 13 rangelands targeted were formulated and are updated periodically; (ii) the filling of the cisterns and excavations built is so effective that the programme surpassed the mid-term targets for volume of water mobilized (169 per cent). It is estimated that 80% of water mobilized is available for at least 4 months and this has reduced significantly the time to fetch water for 82 per cent of the households (almost 200% mid term target); (iii) the rangeland area regenerated and sustainably managed surpassed the mid-term target (127 per cent) and the productivity of improved rangelands is 50% higher than the mid-term target; (iv) the programme is on target with its support to the creation of IGA and training of women and men, and more is required to ensure viability of these micro-enterprises; and (v) chronic malnutrition was reduced significantly thanks to the work of the mother counsellors, and the percentage of women reporting minimum diet diversity (52 per cent) more than doubled compared to the mid-term target (23 per cent).

7. Given the continued relevance of the programme, the Government of Djibouti formally requested additional financing under the current PBAS cycle to cover part of the PROGRES financing gap, identified at design. The Government agreed to reduce the implementation period by 12 months and cancel any residual financing gap, to build on the high level of programme efficiency achieved so far.

Special aspects relating to IFAD's corporate mainstreaming priorities

- 8. **Gender.** In the nomadic pastoralist communities targeted by the programme, the distribution of daily tasks largely reflects subordinate role of women and caregiving functions. The main tasks performed by women and girls are fetching water and collecting firewood, caring for small livestock, domestic chores and childcare. Men and young people, on the other hand, are responsible for fetching water over long distances requiring the use of camels, caring for large livestock, and going on transhumance. Women are more vulnerable to poverty because of their unequal access to education, economic opportunities, property ownership, and credit. The programme promotes a gender mainstreaming approach.
- 9. **The youth**. Various studies report that the young participate little in the country's economy due to a very high unemployment rate. About 38.5 per cent of the population is under 15 years of age and almost 73.5 per cent are under 35 years of age. Youth unemployment is much higher (71.9 per cent) than the overall unemployment rate. The programme is not youth sensitive, but is offering training and employment opportunities for youth through infrastructure works.
- 10. **Nutrition.** In 2015, Djibouti ranked 104th out of 116 countries on the Global Hunger Index (GHI IFPRI, 2015) with a score of 33.2. UNICEF surveys have shown that acute and chronic malnutrition, as well as underweight children under five, are above critical thresholds, even exceeding the emergency threshold of 15%, in almost all regions, including Djibouti City. Nationally, there are very high rates of underweight (26.6 per cent), chronic malnutrition (29.7 per cent) and global acute malnutrition (17.8 per cent) among children under five. The programme includes nutrition activities.
- 11. **Climate.** Climate forecasts suggest the following trends by 2050: (i) an increase in average temperatures ranging between 0.6 and 2.4°C, which is significant even in the low end of the range of uncertainty, given the baseline aridity and high temperatures; (ii) an increasingly erratic rainfall regime, featuring a higher frequency of extreme events such as extended drought periods and torrential rainfalls; (iii) a rise in sea level ranging between 8 and 39 cm, with a multi-model average prediction of 20 cm, aggravating the phenomenon of salt water intrusion into coastal aquifers. These developments are expected to increase erosion problems (both coastal and inland), degradation of vegetation cover, degradation of water quality and availability, and increase water requirements. The key natural

- resource management issues are: (i) access to water for people, animals and pastures/cropland; (ii) restoration of biomass and soil fertility; (iii) better distribution of animal load on pastures; (iv) prevention of excessive erosion and retention of runoff water.
- 12. **COVID pandemic**. As of April 2021, Djibouti registered more than 10,000 Coronavirus cases and 106 deaths. The rate of recovery from the infection reached 84 per cent. The COVID pandemic mainly affected the training activities that PROGRES planned in 2020. The programme management unit (PMU) of PROGRES successfully implemented the first RPSF project, which provided agri-inputs to 950 poor households to secure nutrition and livelihoods. IFAD is currently examining the second RPSF proposal, which extends the provision of agri-inputs to 1,050 households.
- 13. While PROGRES and its additional financing is fully in line with IFAD's latest environment, climate, gender and youth strategies and action plans, it will not be formally validated against IFAD11 Commitments as the value of additional finance is below US\$ 25 million.

B. Description of geographical area and target groups

- 14. There is no change in the target area, target groups and number of households reached. PROGRES will continue to operate in the regions of Arta, Dikhil and Tadjourah, covering a total of 13 rangelands used for transhumance. The beneficiaries are all households having their base camps in localities within these rangelands and living under extremely precarious and climate-vulnerable conditions. The number of direct beneficiaries is 11,075 households, or about 66,400 people, representing 68% of the population in the targeted rangelands. At mid term, the programme has reached 8,158 households (74 per cent target), and 31 per cent households reached are headed by women.
- 15. **The target group** is composed of all households based in the localities situated in the programme area. With regard to social targeting, even if there are differences in the level of poverty in terms of the size and nature of the livestock owned, all of these households live in extremely precarious conditions and are vulnerable to climatic hazards. The risk of elite capture of programme benefits appears to be very limited due to the strong tradition of mutual aid that persists between households with more resources (e.g., pack animals) or wealth, and those in highly vulnerable situations.

C. Components, outcomes and activities

- 16. The programme is structured around two technical components: (i) Hydraulic and environmental improvements; (ii) Improving rural incomes and services; and (iii) a third component on Coordination and monitoring-evaluation. The expected outcomes are: (i) rural communities are better able to plan, develop and manage natural resources; (ii) water is better mobilized; (iii) rangeland plant cover is preserved and densified; (iv) rural activities are diversified and generate additional income; and (v) improvements are made in hygiene practices and diversification of diets. The programme description remains as initially designed.
- 17. **Component 1. Water and environmental improvements.** This component operates in transhumance rangelands managed by communities according to well established traditional rules and has three subcomponents.
- 18. **Subcomponent 1.1. Capacity-building in local planning and management**. The programme supports communities to update or develop a SAHP for each rangeland, in a participatory manner. To this end, the programme supports setting up, organizing and training: (i) CPL responsible for implementing and monitoring SAHPs; and (ii) CGEPs responsible for ensuring that each hydraulic structure and rangeland improvement is operated and maintained properly.

- 19. **Subcomponent 1.2. Mobilization of water.** PROGRES finances hydraulic structures based on priorities set in SAHPs. The hydraulic infrastructure developed include: underground tanks, excavation reservoirs, recharge and spreading weirs, solar powered boreholes, solar powered agro-pastoral wells, shelters at the level of reservoirs and boreholes for the women and children who come to get water, as well as the construction of access roads for building hydraulic works. The physical targets for this component remain unchanged except for the reduction in number of pastoral wells and weirs due to reduced programme financing (see annex 1 logframe).
- 20. Subcomponent 1.3. Regeneration and densification of plant cover. The programme adopted the unit-based protection and regeneration approach developed under the previous PROMES-GDT and replicated by PRODERMO, a World Bank financed project. Each unit is selected on a participatory basis by beneficiaries in accordance with technical assurances in terms of feasibility, high potential for forage production. To this end, the programme focuses on resting and regenerating plant cover through direct seeding of local species, introduction of assisted natural regeneration techniques, revegetation of excavation reservoirs. PROGRES also installed 10 meteorological stations in the programme area supported by a geographical information system and this will be increased by another 10 units during remaining period. The physical targets for this subcomponent were increased (see annex 1).
- 21. **Component 2. Improving rural incomes and services.** This component aims to diversify the incomes of rural households and improve hygiene, nutrition and health conditions for the targeted populations. It is structured in two subcomponents.
- 22. **Subcomponent 2.1 Improving and diversifying incomes.** PROGRES provides support for the economic valorization of livestock through: a study of the market opportunities of the livestock sector; awareness-raising sessions aimed at identifying the "negative" points related to the overstocking of livestock; and support for the commercialization of products. The programme also supports value-added basket-making activities for women, through training in improved basket-making techniques and support for improved inputs, as well as the creation of fodder gardens for income generation. The physical targets for the trainings were increased for a higher sustainability of the activities developed (see annex 1).
- 23. **Subcomponent 2.2. Access to essential basic services**. PROGRES works to improve hygiene, sanitation and nutritional practices, as well as literacy skills. The programme works with mother counsellors to raise awareness and encourage good practices in nutrition, health and hygiene; as well as promote home gardens. It also supports literacy training for men and women which is an added activity to support the training on income generating activities (IGA). The physical targets for this sub-component were increased (see annex 1).
- 24. **Component 3. Coordination and Monitoring & Evaluation.** The technical and administrative coordination, planning and M&E of activities, and resource management are under the responsibility of a PMU, placed under the technical oversight of MAEPE-RH. The PMU has administrative and financial autonomy.

D. Costs, benefits and financing Programme costs

25. The total cost of the additional financing over the remaining period of the programme is US\$5.53 million. Component 1 (water and environmental developments) represents nearly US\$3.16 million i.e., 56.8 per cent of the total cost of the programme. Component 2 (improvement of incomes and services in rural areas) represents US\$0.99 million or 17.8 per cent of the total cost. Component 3 (programme coordination and management) is US\$1.4 million or

25.4 per cent of the total cost. Table 1 presents the original and additional financing, while Table 2 presents the additional financing by component and financier, Table 3 presents it by expenditure category and financier, Table 4 presents it by year.

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

	Original financing*	Additional financing	Total
IFAD loan	5 773	2 210	7 983
IFAD grant	300	0	300
Other cofinanciers (WFP, PROLUC & AF)	1 688	2 426	4 114
Beneficiaries**	702	137	839
Borrower/recipient**	2 524	758	3 282
Financial gap	6 060	0	
Total	17 047	5 531	16 518

^{*} See tables 1 and 2 in document EB 2016/LOT/P.9 for detailed breakdown.

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

	Gove	ernment	IFAD	loan	PRO	LUC		tation ind	Benefi	ciaries	Total
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount
Component 1. Water and Environmental Improvements Capacity building in local planning and											
management	42	12.5	41	12.2	-	-	256	75.4	-	-	340
Mobilization of water	276	11.0	1 198	47.6	-	-	960	38.1	86	3.4	2 519
Regeneration & densification of plant cover	35	11.7	100	33.0	-	-	150	49.4	18	6.0	303
Subtotal	354	11.2	1 339	42.3	-	-	1 366	43.2	104	3.3	3 162
Component 2. Improving rural incomes and	services										
Improving and diversifying incomes	115	11.6	116	11.8	-	-	725	73.2	33	3.4	989
Access to essential basic services	-	-		-		-		-		-	<u>-</u>
Subtotal	115	11.6	116	11.8	-	-	725	73.2	33	3.4	989
Component 3. Coordination and M&E											
Coordination	263	22.8	614	53.4	92	8.0	182	15.8	-	-	1 151
M&E and Knowledge management	26	10.1	141	54.0		-	61	23.6		-	229
Subtotal	289	20.5	755	53.5	92	6.5	243	17.2	_	-	1 380
Total	758	13.6	2 210	39.7	92	1.7	2 33	3 41.9	9 137	7 2.5	5 531

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

	Governm	ent	IFAD lo	an	PROLUC	3	Adaptation Fund	on	Beneficiar	ies	Total
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount
Investment Costs											
Civil engineering	174	10.0	645	37.0	-	-	847	48.5	78	4.5	1 744
Equipment and supplies	111	10.0	351	31.5	-	-	594	53.4	56	5.0	1 112
Transportation equipment	31	33.0	62	67.0	-	-	-	-	-	-	93
Training and studies	105	10.0	546	51.9	-	-	365	34.8	3	0.2	1 019
International technical assistance	3	10.0	6	21.2	-	-	20	68.8	-	-	29
National technical assistance	83	16.0	94	18.0	-	-	344	66.0	-	-	521
Unskilled labour		-	-	-	-	-	-	-	-	-	
Total Investment Costs	508	11.2	1 704	37.4	-	-	2 170	47.7	137	3.0	4 518
Recurrent Costs											
Salaries and benefits	208	23.5	431	48.8	92	10.4	153	17.3	-	-	884
Operation and maintenance	43	33.0	76	58.4	-	-	11	8.6	-	-	130
Total Recurrent Costs	250	24.7	507	50.0	92	9.1	164	16.2	-	-	1 013
Total PROGRAMME COSTS	758	13.6	2 210	39.7	92	1.7	2 333	41.9	137	2.5	5 531

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

_	2021	2022	2023	Total
Component 1. Hydraulic and environmental impro Capacity building in local planning and	vements			
management	11	198	131	340
Mobilization of water	67	1 557	895	2 519
Regeneration & densification of plant cover	2	179	122	303
Subtotal	80	1 934	1 149	3 162
Component 2. Improving rural incomes and service	es			
Improving and diversifying incomes	58	613	318	989
Access to essential basic services	-	-	-	
Subtotal	58	613	318	989
Component 3. Coordination and M&E				
Coordination	214	549	388	1 151
M&E and Knowledge Management	40	87	102	229
Subtotal	254	636	489	1 380
Total	392	3 184	1 956	5 531

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Financing and cofinancing strategy and plan

26. The total cost of the additional financing of the PROGRES is US\$5.53 million composed of: a loan from IFAD of US\$2.21 million; a grant from AF of US\$2.33 million; Government's contribution of US\$0.76 million; and beneficiary contribution estimated at US\$0.14 million. Government contribution covers all taxes and duties on procured goods and services, and part of PMU salaries. It is expected that there will be cost-sharing of the PMU under component 3 with the PROLUC for an amount of US\$0.09 million.

Disbursement

27. The current Designated Accounts (DAs) for the original loan and original grant, will be used to receive funds from the additional IFAD loan and the AF grant respectively. The financing will flow from the DAs to the respective operating accounts opened by the programme in Djibouti francs at BCIMR (Bank for Commerce and Industry - Red Sea) managed by the PMU. To track the income and expenditures/transactions and enable accurate reconciliation of the designated and programme accounts, separate ledgers will be set up and maintained for receipts and expenditures from each financing source separately².

Summary of benefits and economic analysis

- 28. **Benefits and Beneficiaries.** The mission of the additional financing updated PROGRES economic and financial analysis using an opportunity cost of capital (OCC) at 10 per cent. The economic internal rate of return (EIRR) of the PROGRES is estimated at 14.3 per cent, which is higher than the OCC. The Net Present Value of the programme is positive (US\$ 4.1 million) and the Benefit Cost Ratio is greater than 1 (1.4). These indicators establish the economic feasibility of the PROGRES and justify continued support and bridging the financing gap identified at design.
- 29. **Sensitivity Analysis.** The programme is still viable if the benefit drops by 10 per cent to 20 per cent or the aggregate costs increase by the same percentage. In terms of scenario analysis, the programme remains feasible with a simultaneous decrease of benefits and increase of costs by 10 per cent. However, a simultaneous decrease of benefits by 10 per cent and increase of costs by 20 per cent or a decrease of benefits by 20 per cent and increase of costs by 20 per cent and more, yields a non viable programme. The PROGRES is therefore a robust investment and this analysis justifies continuation of its funding.

Exit strategy and sustainability

30. The sustainability of PROGRES interventions will be enabled by the following factors, despite the shorter implementation duration: (i) completing the bulk of the investments in hydraulic structures in 2022 since preliminary studies are already available and procurement is set to be completed in 2021. This will leave a year for handholding community groups and linking them to the CPLs whose capacity has been built since programme start-up and are fully operational; (ii) robust interdepartmental collaboration in MAEPE-RH leading to mainstreaming of procedures for capacity building of community groups and maintenance of water infrastructure (elaborated and fine-tuned since PROMES-GDT), and building technical departments' capacity in the domain; (iii) collaboration with the Integrated Water Resources Management Project, which has been designed in 2020 to mainstream PROGRES successes within MAEPE-RH; and (iv) stronger emphasis on support to entrepreneurs until the revised completion.

² IFAD will need to report to the Adaptation Fund on the PROGIRES project as a whole, consolidating the shares of the AF grant assigned to the PROGRES and PGIRE.

III. Risk management

A. Risks and mitigation measures

31. The major programme risks and mitigation measures include the following:

Risk	Description	Mitigation Measure
National Context Sectoral strategies and policies	Substantial to Moderate. Non-transparency in the management of programme funding. Vulnerability to shocks namely COVID pandemic Moderate to Low. Weak community engagement in policy development	 Robust internal and external audit. IFAD application of zero-tolerance towards corruption Strengthening adaptive capacities of HH to shocks and delivery of support though RPSF. Support deconcentration of the services of MAEPE-RH so they are more responsive to community needs Capacity building of community organizations and their
		official registration Policy formulation around pastoralism in a manner that is inclusive of all stakeholders
Environment and Climate	Substantial to Moderate. Erosion, deterioration of vegetation cover, salt intrusion in aquifer, frequent climatic shocks (drought and flooding)	 Support to integrated and participatory management of water and rangelands Support to soil and water conservation Support to rangeland productivity restoration Livelihood diversification
Institutional capacity	Substantial to Moderate. Programme staff may not have required technical competency and complex inter-departmental coordination within MAEPE-RH	 Programme approach is well tested Experienced PMU is in place and competent staff hired Well established inter-departmental collaboration for design and supervision of hydraulic works Effective partnership with development partners
Financial management	Low risk. Absence of an updated procedures and the financial manual	Updating the existing financial manual Supervision mission from 2018 to 2020 rated the financial management of the programme as satisfactory
Procurement	Moderate to Low. Inadequate grievance mechanism, weaknesses in implementation capacity	 Grievances portal developed by the programme Staff capacity built-up through training Implementation support on procurement to improve national shopping for goods, hiring of consultants and contract management
Environmental, social and climatic impact	Moderate to Low. Loss of biodiversity and ecosystem services, increased vulnerability of rural poor, child labour and exploitative work conditions.	 Programme promotes an integrated water and range management approach that conserves vegetative cover, improves water availability and recharge of aquifers Sensitization of communities on decent work practices
Stakeholders	Low. Partial implementation of the participatory process and grievance process	 PMU adheres to the participatory approach PMU applies grievance redress mechanism
Global risk	Moderate to Low	

B. Environment and social category

32. A Social, Environmental and Climate Assessment Procedures (SECAP) review of the entire programme was carried out at design in 2016, and PROGRES received a category B classification. No significant environmental or social impacts are expected to arise from programme activities. The achievements to date fit perfectly into the SECAP guidelines: (i) access to water for livestock and human use; (ii) restoration of the biomass in degraded rangelands (resting, assisted natural regeneration and planting); (iii) the construction of roads to access rangelands that are otherwise inaccessible, allowing for a better management of range which is

otherwise difficult in drought years; (iv) coaching rural women in good hygiene and nutrition practices.

C. Climate risk classification

- 33. The SECAP review in 2016 concluded that, the climate risk in the context of the programme is moderate. The programme is implementing actions that reduce the vulnerability of target households by: (i) increasing the mobilizable volume of runoff water in rangelands in storage facilities (tanks, reservoirs); (ii) strengthening community-based natural resources management organizations; (iii) the improvement of the income of poor rural households by safeguarding their herds during difficult climatic periods; (iv) livelihoods' diversification through the promotion of IGA in areas such as handicrafts, beekeeping, and pastoral seed collection.
- 34. In recognition of the high vulnerability of rural communities to extreme climate events, the proposed IFAD additional financing will complement those expected from the AF and will be invested in strengthening the resilience of households' pastoralism and agricultural systems to climate change and climate variability.

IV. Implementation

A. Compliance with IFAD policies

35. PROGRES is aligned with all relevant IFAD strategies and policies, including the:
(i) Strategic Framework 2016-2025; (ii) the COSOP 2019-2024; (iii) Revised
Operational Guidelines on Targeting; (iv) Policy on Gender Equality and Women's
Empowerment; (v) Rural Finance Policy; (vi) Private Sector Engagement Strategy
2019-2024; (vii) Rural Enterprise Policy; (viii) Environment and Natural Resource
Management Policy; (ix) SECAP; and (x) Rural Youth Action Plan 2019-2021.

B. Organizational framework Management and coordination

- 36. The additional financing does not introduce any change in the organizational framework. The Ministry of Economy and Finance, Industry and Planning represents the Borrower, and MAEPE-RH is the Lead Programme Agency of PROGRES.
- 37. Technical and administrative coordination, planning and M&E, and knowledge management are the responsibility of a PMU enjoying administrative and financial autonomy. The PMU is placed under the technical oversight of MAEPE-RH. The PMU comprises a central unit and two regional branches, one in Dikhil and the other in Tadjourah.
- 38. The Programme Steering committee (PSC) will continue to provide overall oversight of programme activities; review and approve Annual Work Plans and Budgets (AWPBs) and the Implementation Manual; promote coordination among implementing partners; identify policy issues; and ensure transparency and accountability in programme management.

Financial management, procurement and governance programme

- 39. The quality of the **financial management** was rated satisfactory in the last two missions of 2019 and 2020. The programme's inherent and residual risks were rated low. The latest supervision mission of October 2020 reported that the programme internal control systems remain effective. Qualified and trained financial management team is in place. The disbursement was rated highly satisfactory.
- 40. **Procurement arrangements** are in accordance with the IFAD procurement guidelines of 2020 and provisions of the administrative and financial procedures for

the programme. Each year, a procurement plan is prepared based on the AWPB, to be approved by the PSC and no objected by IFAD. For each contract, the estimated cost, procurement method and need for prior review by IFAD, are indicated according to the applicable thresholds. Given the moderately unsatisfactory rating in 2020, IFAD is providing online training on procurement to the staff of PROGRES as well as implementation support in this domain through the assignment of an accredited Procurement Consultant to follow up directly with PROGRES on the procurement activities.

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

- 41. **Monitoring and evaluation (M&E).** The M&E system set up at the PMU level is functional and deemed satisfactory by the supervision missions. The planning process set up by the programme thus far is participatory and the data collection forms are complete, comprehensive and fully integrated into the programme's M&E manual. The information generated by the M&E system is regularly used for decision-making, particularly in the identification of annual targets in the framework of the AWPB and its revisions. The monitoring system set up by PROGRES also facilitates the monitoring of contracts and recommendations of supervision missions. The M&E system will continue to monitor physical and financial progress, as well as progress towards programme objectives, and a key management tool. All data will be disaggregated by sex and age. Inputs, outputs, process and outcomes will be monitored in accordance with logical framework indicators and building on the financial information, staff reports and surveys. An impact assessment survey will be carried out in the last year of implementation before the completion.
- 42. **Knowledge management.** The design of the programme includes features to foster learning and sharing of knowledge in target communities, among the PMU staff, and across the wider group of stakeholders in the Government, civil society, and development assistance providers in Djibouti.
- 43. Lessons learned, information and knowledge generated within PROGRES are documented for dissemination to MAEPE-RH, IFAD and other institutions or partners operating in similar contexts. The additional financing will notably support the programme to systematically conduct case studies and documentation that are adequate to demonstrate the impact of the programme on the livelihoods of target groups. Social media platforms will be explored to document and share online lessons and knowledge emerging from the implementation of the programme.

D. Proposed amendments to the financing agreement

44. Subject to the approval of the additional financing by the President delegated by the Executive Board, the PROGRES financing agreement will be amended to take into account the additional US\$2.21 million of IFAD funds and the new highly concessional financing terms. No new expenditure category will be created. This financing partially fills the gap of the financing plan originally approved and will not involve changes to the programme, objectives, target area or target group. The only change would be a shorter implementation period and the revised completion date would be 30 June 2023.

V. Legal instruments and authority

- 45. An amendment to the current financing agreement between the Republic of Djibouti and IFAD will constitute the legal instrument for extending the proposed financing to the Borrower.
- 46. The Republic of Djibouti is empowered under its laws to receive financing from IFAD.

47. 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

48. According to the delegation of authority procedure approved by the Executive Board at its 126th session and detailed in document EB 2019/126/R.48/Rev.2, the President is invited to approve the proposed financing in terms of the following resolution:

RESOLVED: that the Fund shall provide a loan on highly concessional terms to the Republic of Djibouti in an amount of two million two hundred and ten thousand six hundred and sixty US Dollars (US\$2 210 660) and upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented herein.

Donal F. Brown Associate Vice-President, Programme Management Department

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Updated logical framework incorporating the additional financing

	Indica	ateurs						Moyens de vér	ification		
Chaîne logique	Nom	Situation de référence	Cible Mi- par- cours Origina- le	Cible Finale Révisée	Résultats mi-parcours	Cible Finale Originale	Source	Fréquence	Responsabilité	Hypothèses	
	1 Nombre de personnes béné	ficiant de	services p	romus ou							
	appuyés par le projet										
	Femmes – Femmes		11 700	19 920	18 134	19 920					
	Hommes – Hommes		27 300	46 480	28 656	46 480					
	Nombre total de personnes bénéficiant de services		39 000	66 400	46 790	66 400					
	1.a Nombre correspondant de m	énages tou	chés							Daniel valuena	
Portée Outreach	Ménages dirigés par une femme – Ménages		4 550	7 753	2 556	7 753	Etude de			Bonne gouvernance Pas de catastrophes	
	Ménages autres que ceux ayant une femme pour chef – Ménages		1 950	3 323	5 602	3 323	référence, Enquête	Année 1,		naturelles majeures	
	Ménages – Ménages		6 500	11 075	8 158	11 075	mi-	Année 3 ou			
	1.b Estimation correspondante d	u nombre to	otal des me	mbres des			parcours,	4, Annuel dès			
	ménages					Enquêtes	année 3, Dernière	UGP/ prestataire			
	Membres des ménages - Nombre		39 000	66 400	49 740	66 400	ménages,	année	PAM/GdD/DISED		
	de personnes			66 400			Etude	Fréquence du	I AW/OUD/DISED		
Objectif du projet	Revenu moyen des populations	olées				d'impact,	PAM				
Contribuer à	Revenu moyen – Nombre	87	99	117		117	Rapport	Fréquence du			
l'amélioration durable des	Pourcentage de population augmentation du revenu moyen	ciblée	faisant ét	at d'une			VAM, Statistiques	CAD		Stabilité socio-politique et sécuritaire (liée à la	
conditions de vie et	Pourcentage - Pourcentage (%)		60	60		60	nationales			situation au Yémen et	
à la réduction de la	Prévalence de la malnutrition	chronique	chez les e	enfants de						dans la Corne de	
pauvreté des	moins de 5 ans									l'Afrique)	
communautés rurales dans la zone du Programme	Enfants de moins de 5 ans - Pourcentage (%)	63,2	62	20	30	58.2					
Objectif de	Nombre moyen d'heures par se par ménage	maine dédi	ées à la co	rvée d'eau							
développement	Heures par semaine – Nombre	35	18	13	13	17.50	1				
Améliorer	3.2.3 Ménages déclarant une di					17.00	Etude de			Bonne gouvernance	
durablement l'accès	consacré à la collecte d'eau et d			topo			référence.			Pas de catastrophes	
des ménages ruraux à l'eau et aux	Ménages - Pourcentage (%)		47	80	82	80	Enquête	BL, MTR,	UGP/ prestataire	naturelles majeures	
	Ménages – Ménages		5 805	8 860	6 689	8 800	mi-	PCR	PAM/GdD/DISED	·	
ressources locales, et leur résilience au	Membres des ménages - Nombre de personnes		27 328	46 515	40 260	46 515	parcours, Enquêtes				

changement	Hommes – Hommes	19 1	20	32 561	27 430	32 561	ménages,			
climatique	Homines – Homines	191	29	32 301	27 430	32 301	Etude			
Ciiriatique					12 830	13 955	d'impact,			
	Femmes – Femmes	8 19	98	13 955			Rapport			
	1 change 1 change	0.0		10 000			VAM,			
							Statistiques			
	Nambra dibactores gárás de fos	n norticinative et	nároni				nationales Etude de			
Effet direct	Nombre d'hectares gérés de faço				4.005	F 040				
Les communautés	Hectares de terre – Nombre Pourcentage des Comités de pilo	840 2 64		6 600	4 685	5 840	référence, Rapports	Année 1,		
rurales sont capables de mieux	gestion des points d'eau et des p fonctionnels						d'activités, Enquête	RMP, Année 3 ou 4,	UGP/prestataire	
planifier, développer et gérer les							mi-	Dernière	·	
ressources en eau	Pourcentage des comités -	80		80	100	80	parcours,	année		Appropriation des CALID
et les pâturages	Pourcentage (%)	00	'	60			Etude			Appropriation des SAHP par les communautés
- Ct 100 patarages							d'impact			par les communautes
Produit	Comités de pilotage locaux (CPL	.) créés et/ou appi	uyés				Fiches de			
Des CPL et des	CPL créés – Nombre	5		5	5	5	collecte de		Animateurs/rices.	
	CPL appuyés – Nombre	8 8		8	8	8	données	Mensuelle	UGP, Prestataires de	
en œuvie les SARP	Comités de gestion des points créés et/ou appuyés	<u> </u>		` ,			pour le suivi de	Worlddelie	services	
	CGEP – Nombre	50	1	104	62	80	l'exécution			
	Nombre annuel de m3 d'eau en s				Fiches de					
	m3/an dans les citernes – Nombre	2 50	00	10 800 ³	6 340	5 300	suivi du remplissag	Dès		Les pluies sont
Effet direct La capacité de	m3/an dans les retenues – Nombre	180 (000 5	560 000 ⁴	302 000	280 000	e et d'utilisation	l'achèvement		
mobilisation et de	Pourcentage de la quantité d'eau	mobilisable mob	ilisée a	u moins			des	des travaux	Animateurs/rices,	suffisantes pour remplir
stockage des eaux	4 mois/an	mobiliousio mob					ouvrages,	d'un ouvrage, Année 3 ou	UGP/prestataire	les ouvrages. L'entretien des ouvrages
de surfaces est							Enquête	4, Dernière		est bien réalisé.
accrue	Pourcentage de volume de l'eau -	7.0		70	80	70	mi-	année		
	Pourcentage (%)	70	'	70			parcours, Etude			
							d'impact			
	Citernes réalisées ou réhabilitée	s	1				Comptes-			
1	Citernes nouvelles réalisées -				21	43	rendus des	Mensuelle		
	Nombre	21		43		.0	entreprises	dès le		
Produit	Citernes réhabilitées – Nombre	5		11	11	10	de	démarrage		Participation des
Des ouvrages	Retenues réalisées ou réhabilitée	es					constructio	des travaux,	Entrepreneurs,	bénéficiaires aux travaux
hydrauliques sont	Retenues nouvelles réalisées -			44	7	11	n, Rapports	Selon le	UGP/DHR/DGT	HIMO
réalisés	Nombre	7		11			techniques	calendrier de		Pression supportable sur
1	Retenues réhabilitées – Nombre	3		3	3	3	des	suivi et de réception des		les ressources naturelles
!	Seuils d'épandage réalisés	•					missions de	travaux		
	Seuils d'épandage – Nombre	2		6	2	12	suivi de	llavaux		

 ³ Hypothèse de 2 remplissages/an pour chaque citerne construite/réhabilitée sur la base des réalisations actuelles du PROGRES
 ⁴ Hypothèse de 2 remplissages/an pour chaque retenue construite/réhabilitée sur la base des réalisations actuelles du PROGRES

	Forages à exhaure solaire réalise	és					travaux, PV				1
	Forages – Nombre		2	3	2	3	de				1
	Puits agro-pastoraux réalisés			•			réception				אַלטַמוּימוּאַ
	Puits agro-pastoraux – Nombre		4	8	4	13					2
	Abris réalisés			•							2
	Abris – Nombre		10	14	4	17					;
Produit	2.1.5 Kilomètres de routes const	ruites, refai	tes ou am	éliorées							
Des pistes d'accès sont ouvertes	Longueur des routes (km)	·	300	420	400	420					
	kg de MS de fourrage produite a	nnuellemen	t par hecta	are			Enquêtes				1
Effet direct Le couvert végétal	Kg/ha/an – Nombre	70	100	200	155	200	de référence (début, mi- parcours, finale)	Année 1, Année 3 ou 4, Dernière année	UGP/prestataire	Pas de très fortes	
est préservé et densifié		 ? Ménages déclarant l'adoption de pratiques et technologi ables et résilientes au changement climatique								sécheresses répétitives	
	Ménages - Pourcentage (%)		45	90	83	90	enquête	RMP, Finale	UGP/Prestataire		
	Membres des ménages - Nombre de personnes		624	1 440	1 320	1 248	spécifique	RIVIF, FILIAIE	service		
	Ménages – Ménages		120	240	220	240					
	3.1.4 Hectares de terres soumis climat	siliente au			rapports d'activités	annuelle	UGP/Prestataire de				
	Superficie en hectares- Superficie (ha)		3 675	5 760	4 685	5 000	et techniques	annuelle	servie/Animateur/rice		
Produit	Hectares de terre mise en repos							Selon nature		Participation des	
Des travaux de CES/DRS et des	Hectares de terre - Superficie (ha)		3 600	5 600	4 600	4 800	Rapports	des travaux à mener, Bilans		bénéficiaires aux travaux	
activités de mise en	Hectares de forêt d'épandage ac	acia créés					d'activités,	mensuels des		Discipline de mise en	
epos des pâturages	Hectares de terre - Superficie (ha)		75	160	85	200	Rapports techniques	animateurs/ rices pour les	UGP/Prestataires de services,	repos et d'exploitation	
sont realises	Stations météo installées			•			des	pâturages et	Animateurs/rices	respectée	
	Stations météo – Nombre		10	20	10	10	missions de suivi de travaux	en général trimestriellem ent pour les retenues			
Effet direct Les activités	Pourcentage de ménages enre leur revenu annuel d'au moins 10	_	ne augme	ntation de			Etude de référence,	Année 1, Année 3 ou	UGP/prestataire	Disponibilité de marchés pour les produits ruraux	

économiques et/ou moyens d'existence des ménages bénéficiaires sont diversifiées et génèrent des revenus additionnels	Households - Pourcentage (%) Nombre d'AGR appuyées et fonc	tionnelles ⁵	10	30		30	Enquête mi- parcours, Etude d'impact	4, Dernière année		
	Nombre d'AGR appuyées et fonctionnelles	0	10	40	10	40				
	Femmes déclarant avoir diversifié leurs activités socioéconomiques	0	152	377	152	N/A		Trimestrielle et Annuelle		
Produit	Hommes déclarant avoir diversifié leurs activités socioéconomiques	0	89	315	89	N/A	Comptes rendus des séances de			
Des ménages sont appuyés pour mieux	1.1.4 Personnes formées aux p production	ou techno	ologies de			sensibilisati			Disponibilité de cadres	
valoriser leur	Nombre total de présences aux sessions de formation – Nombre		260	700		N/A	on, Rapports d'activités		Prestataires, Animateurs/rices	du MAEPE-RH pour appuyer les activités
de vannerie et de production	Hommes formés à la production animale - Hommes		182	500	220	364	des animateurs/			dans les parcours d'intervention
fourragère	Femmes formées à la production animale - Femmes		78	200	115	156	rices, Rapports	A l'issue de chaque		
	Personnes formées à la production animale - Nombre de personnes		260	700	335	520	d'activités	séance, Mensuelle		
	Femmes formées et appuyées er	vannerie								
	Femmes – Nombre		360	520	435	520				
	Femmes formées et appuyées er	production								
	Femmes – Nombre	,,, ,,	20	50	20	50	_		1100/	
Effet direct Les pratiques	Pourcentage de ménages ayant a régime alimentaire	ameliore le :	score de d	iversite du			Etude de référence,	Année 1, Année 3 ou	UGP/prestataire, DISET	Existence de compétences nationales

⁵ Nouvel indicateur proposé à la mi-parcours

Appendix I

	T	ı	1				DMD -	4 Dami')		I are see fillered and fill divine Com-
d'hygiène sont améliorées et le							RMP et enquête	4, Dernière année		en méthode d'éducation nutritionnelle et de santé
régime alimentaire	Pourcentage de ménages -						finale	Fréquence à		en milieu rural
est diversifié	Pourcentage (%)	18	23	60	43	37	maio	définir		on milea rarar
001 011 010 110					.0	0.		Fréquence à		
								définir		
	1.2.8 Femmes déclarant une	diversité a	alimentaire	minimale						
	(MDDW)						Etude de			
	Femmes (%) - Pourcentage (%)	18	23	60	52	37	référence,			
	Femmes (nombre) – Femmes		1 050	3 000	2 611	1 850	RMP et	ER, RMP,	UGP/DISET	
	Ménages (%) - Pourcentage (%)	18	23	60	43	37	enquête	Achèvement	00.72.02.	
	Ménages (nombre) – Ménages			2 500	1 792	1 542	finale			
	Membres des ménages - Nombre			15 000	8 960	7 710				
	de personnes		L							
	1.1.8 Ménages recevant un so nutrition	utien cible	pour ame	eliorer leur						
	Nombre de personnes qui									
	participent - Nombre de		2 500	9 000	7 602	6 000				
	personnes									
Produit	Hommes - Hommes		500	2 000	1 760	1 000				
Des séances de	Femmes – Femmes	0	3 500	7 000	5 842	5 000		A l'issue de		
formation à	Ménages – Ménages		2 083	5 500	4 895	4 167	Rapports	chaque	Animateurs/rices,	
l'hygiène, la nutrition	Membres des ménages						d'activités	campagne,	Prestataires	
et l'alphabétisation	bénéficiaires - Nombre de		12 500	33 000	29 370	25 000		Mensuelle		
sont réalisées	personnes									
	Nombre de personnes bé	néficiant d	de l'alpha	abétisation						
	fonctionnelle pour s'approprier	les acquis c	lu program	me⁵						
	Nombre de personne participants	0	0	500		N/A				
	aux séances d'Alphabétisations	Ŭ	ŭ				4			
	Hommes – Nombre	0	0	300		N/A	4			
	Femmes – Nombre	0	0	200		N/A				

⁶ Nouvelle activité et nouvel indicateur proposés à mi-parcours

Updated summary of the economic and financial analysis

Table A Financial cash flow models (FDJ)

epresentative financial mode	Investment Y1	Gross margin Y. 1	Gross margin Y. 10	Annual Inc. net benefits Y. 10	NPV @ 10% (DJF)	IRR	Return per household (Y. 10)
Reservoirs rehabilitated	21.756.213	57.741.545	95.417.309	27.759.215	142.980.326	76.9%	111.037
New reservoirs	21.756.213	57.703.545	83.439.645	7.821.776	37.823.019	28.7%	333.759
Crafts (basketry)	15.739.168	69.904.000	59.696.000	66.010.770	189.530.702	27%	59.696.000
Acacia	15.739.168	4.166.400	124.499.200	9.374.400	11.269.531	15.3%	7.001.850
Cactus and fodder	878.919	878.919	508.966	508.966	1.017.331	20.8%	508.966
Animal health	1.940.417	5.003.583	12.152.000	6.249.600	23.263.900	35%	36.456

Table B Programme costs and logframe targets

Total Costs of the Programme (with additional financing)	US\$ 22.58 Million
Beneficiaries	66 400 people
	11 075 Households (HH)
Cost/ beneficiary people	US\$ 340
Cost/ beneficiary HH	US\$ 2039

Components and Cost of additional financial (US\$ million)

Components	Costs	outcomes	Indicators
		Operate in transhumance	Increase in the number of tanks built and rehabilitated
Component 1: water and environmental devlpt.	3.2 (56.6%)	rangelands managed by communities. Strengthened	Increase in the number of new reservoirs made
		Capacity-building, water mobilization, and	Increase in the number of weirs
		Regeneration/densificati on of plant cover	Increase in the number of agro- pastoral wells and boreholes
Component 2: Improving rural incomes and sces	0.99 (17.7%)	Improved and diversified incomes of rural households and access to essential basic services	 Increase in the average income of the targeted poor populations by 34% (from baseline to target) 60% of target population reporting an increase in average income Number of IGAs supported and functional: from 10 (MTR) to 40 (target)
			• Women declaring that they have diversified their socioeconomic activities: from 89 (MTR) to 315 (target).
Component 3: Prog. Coordination & managt.	1.44 (25.7%)		
Total AF cost	5.6 (100%)		

Table C Main assumptions and shadow prices

MAIN ASSUMPTIONS & SHADOW PRICES										
Official Exchange rate (OER)	176,832 DJF/\$	Discount rate	10%							
Economic life span	20 years	Standard Conversion Factor	0.7							

Table D Beneficiary adoption rates and phasing

Name	Baseline	MTR	Final target								
1 Number of people benefiting from services promoted or supported by PROGRESS											
Women		11 700	19 920								
Men		27 300	46 480								
Total number of people receiving services		39 000	66 400								
1.a, Nmber of targeted ho	1.a, Nmber of targeted households										
Female-headed households		4 550	7 753								
Households other than those headed by a woman		1 950	3 323								
Households		6 500	11 075								
1.b Estimation of the total	number of hou	usehold membe	rs								
household members		39 000	66 400								
Average income of target	ed poor popula	ations									
Average income	87	99	117								
% of target population reporting an increase in average income											
Percentage (%)	60 60										
Adoption rate		70%									

Table E Economic cash flow

	An 1	An 2	An 3	An 4	An 5	An 6	An 7	An 8	An 9	An 10	An 11	An 12	An 13	An 14	An 15	An 16	An 17	An 18	An 19	An 20
TOTAL COÛTS ECO PROGRESS (USD)	1.581.160	2.098.286	2.893.033	2.309.625	1.823.207	705.044	568.023	568.023	568.023	568.023	568.023	568.023	568.023	568.023	568.023	568.023	568.023	568.023	568.023	568.023
BENEFICES DU Progress (en USD)																				
1. Retenues			162.747	431.913	719.855	791.841	871.025	958.127	1.053.940	1.159.334	1.275.268	1.275.268	1.275.268	1.275.268	1.275.268	1.275.268	1.275.268	1.275.268	1.275.268	1.275.268
3. Mises en repos paturage					- 1.970.000	- 1.970.000	- 410.243	393.268	2.169.095	3.122.221	3.122.221	3.122.221	3.122.221	3.122.221	3.122.221	3.122.221	3.122.221	3.122.221	3.122.221	3.122.221
5. Agriculture (jardins)		- 96	383	2.609	2.855	3.993	111	4.050	4.050	4.050	4.050	4.050	4.050	4.050	4.050	4.050	4.050	4.050	4.050	4.050
6. Agriculture (pépiniére)	34	1.601	1.601	1.601	1.601	1.601	1.601	1.592	1.761	1.592	1.592	1.592	1.592	1.592	1.592	1.592	1.761	1.592	1.592	1.592
4. AGR Vannerie teinte		18.362	73.446	110.169	137.712	174.435	174.435	174.435	174.435	174.435	174.435	174.435	174.435	174.435	174.435	174.435	174.435	174.435	174.435	174.435
4. AGR Vannerie base	2.500	10.000	30.000	50.000	65.000	75.000	85.000	85.000	85.000	85.000	85.000	85.000	85.000	85.000	85.000	85.000	85.000	85.000	85.000	85.000
7. AGR Apiculture	325	975	1.624	2.274	2.924	3.573	4.223	7.924	7.924	7.924	7.924	7.924	7.924	7.924	7.924	7.924	7.924	7.924	7.924	7.924
8. AGR sacs améliorés		75	375	1.125	2.250	2.250	2.250	2.363	2.363	2.363	2.363	2.363	2.363	2.363	2.363	2.363	2.363	2.363	2.363	2.363
TOTAL BENEFICES DU PGIRE	2.859	30.916	270.177	599.692	- 1.037.803	- 917.306	728.402	1.626.758	3.498.567	4.556.918	4.672.852	4.672.852	4.672.852	4.672.852	4.672.852	4.672.852	4.673.021	4.672.852	4.672.852	4.672.852
CASHFLOW	-1.578.301	- 2.067.371	- 2.622.857	- 1.709.933	- 2.861.011	- 1.622.350	160.378	1.058.735	2.930.544	3.988.895	4.104.829	4.104.829	4.104.829	4.104.829	4.104.829	4.104.829	4.104.997	4.104.829	4.104.829	4.104.829
Cash flow actualisé cumulé	-1.578.301	-3.645.671	-6.268.528	-7.978.461	-10.839.472	-12.461.822	-12.301.444	-11.242.709	- 8.312.165	- 4.323.270	- 218.441	3.886.387	7.991.216	12.096.044	16.200.873	20.305.702	24.410.699	28.515.528	32.620.356	36.725.185
TRI	14,30%																			
VAN	4.107.169																			
VAN B	14.921.852																			
VAN C	10.814.683																			
BCR	1,4																			
DRC	9,8																			

Table F
Sensitivity analysis

								EIRR(en %	ENPV (M. USD)
Baseline scenario								14,8	2,9
Decrease in benefits by:	10%	10%	risk of falling	sales prices,	yield	and adoption	rate	12,4	1,4
	20%							9,9	-0,06
Increase in costs by :	10%		increase in production factors				12,7	1,7	
	20%							10,8	0,5
Delayed benefits by:	1 an		Change in im	plementatio	n time	11,9	1,2		
	2 ans							9,6	-0,3
Drought each:	4 ans	0% of benefits	recurring dro	oughts				9,6	-0,3
	3 ans	0% of benefits	;					6,6	-1,9
Analysis in term	s of com	bined scenarios	: :		10%		-10%	10,4	0,2
					10%		-20%	7,9	-1,3
				Costs	20%	Benefits	-20%	6,1	2,4
					20%		-30%	-1,7	3,4
					20%		-10%	8,5	-1,0