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**President's memorandum**  
**Proposed additional financing**  
**Republic of Malawi**  
**Programme for Rural Irrigation Development**  
Project ID: 1100001670

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**FOR: APPROVAL**

**Action:** The Executive Board is invited to approve the recommendation for the proposed additional financing contained in paragraph 56.

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**Technical questions:**

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## Appendices

- I. Updated logical framework incorporating the additional financing
- II. Updated summary of the economic and financial analysis

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### Programme delivery team

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## Financing summary

<b>Initiating institution:</b>	Ministry of Finance and Economic Affairs
<b>Borrower/recipient:</b>	Republic of Malawi
<b>Executing agency:</b>	Ministry of Agriculture, Irrigation and Water Development
<b>Total programme cost:</b>	US\$125.0 million
<b>Amount of original IFAD loan:</b>	SDR 19.30 million
<b>Amount of original IFAD grant:</b>	SDR 19.35 million
<b>Terms of original IFAD loan:</b>	Highly concessional
<b>Amount of additional IFAD financing:</b>	SDR 21.050 million (equivalent to approximately US\$27.7 million)
<b>Terms of additional IFAD financing:</b>	80 per cent super highly concessional loan 20 per cent highly concessional loan
<b>Cofinancier:</b>	enhanced Adaptation for Smallholder Agriculture Programme (ASAP+)
<b>Amount of cofinancing:</b>	SDR 5.320 million (equivalent to approximately US\$7.0 million)
<b>Terms of cofinancing:</b>	Grant financing
<b>Contribution of borrower/recipient:</b>	US\$13.09 million (original financing) US\$4.44 million (additional financing)
<b>Contribution of beneficiaries:</b>	US\$6.979 million (reduced from US\$7.283 million at design) US\$2.79 million (additional financing)
<b>Private sector:</b>	US\$2.4 million (reduced from US\$3 million at design) US\$0 (additional financing)
<b>Climate financing:</b>	US\$18.02 million
<b>Cooperating institution:</b>	IFAD

## **I. Background and programme description**

### **A. Background**

1. The Republic of Malawi's [Programme for Rural Irrigation Development](#) (PRIDE) was approved by the Executive Board in December 2015 with an original completion date of 31 December 2023. At midterm review (MTR), the completion date was extended by one year to 31 December 2024. PRIDE is the anchor investment project for the Enhancing the Resilience of Agro-Ecological Systems Project (ERASP) grant, financed by the Global Environment Facility (GEF).
2. PRIDE's original financing of US\$83.95 million consists of: (i) IFAD financing: 63 per cent (US\$53 million, half through a highly concessional loan and half through a grant); (ii) a planned grant from the enhanced Adaptation for Smallholder Agriculture Programme (ASAP+): 8.4 per cent; (iii) private sector contributions: 3.6 per cent; (iv) a Foreign, Commonwealth and Development Office contribution: 0.6 per cent; (v) the government contribution: 15.6 per cent; and (vi) the beneficiaries' contribution: 8.7 per cent. GEF financing for ERASP comes to US\$7.1 million (67.6 per cent of total costs).
3. The Government of Malawi is requesting additional financing in the amount of US\$27.7 million from its Twelfth Replenishment of IFAD's Resources (IFAD12) allocation, with a two-year extension, moving PRIDE's completion date to 31 December 2026. The objectives of the proposed additional financing are to fill a financing gap unforeseen at design, arising from higher irrigation infrastructure costs, and to scale up successful interventions.

### **B. Original programme description**

4. PRIDE's goal is to reduce vulnerability to food insecurity, the effects of climate change and market volatility. Its development objective is to enable smallholder farmers to sustainably improve production to meet household nutritional needs and deliver produce to markets. Component 1 involves irrigation development and catchment management, while Component 2 develops climate-smart agriculture and viable market linkages.
5. The two main outcomes are smallholder farmers sustainably operating climate-resilient land and water management systems and adopting environmentally and economically sustainable agricultural production systems on both rainfed and irrigated lands.

## **II. Rationale for additional financing**

### **A. Rationale**

6. The latest supervision mission (May 2022) confirmed that PRIDE has made good progress towards achieving its programme development objective, with a rating of 4.15 for likelihood of achieving the development objective, and 4.08 for assessment of overall implementation performance. PRIDE has cumulatively reached a total of 16,022 households (80,110 members) against a target of 19,500 (97,500 members); 8,616 of these households are female-headed and 3,524 youth-headed.
7. Following the MTR in April 2021, compliance with the recommendations of feasibility studies to include additional climate modifications in the new projects, notably solar pumping, together with high inflation, have increased the cost of these projects. Component 1 was therefore scaled down from developing 5,138 ha of climate-resilient land and water management systems in 15 irrigation projects (increased to 16 projects during implementation, based on a government request) to 3,115 ha in nine irrigation projects. All nine priority irrigation projects have secured water rights certifications with 16 land-use agreements. The nine priority

irrigation projects are expected to be completed and commissioned by July 2023 and will benefit 12,913 households.

8. Under the additional financing, lessons from the implementation of irrigation infrastructure will continue to be taken into account. The latest supervision report highlighted the need for renewed vigilance of water users' associations (WUAs) to prevent elite capture and put effective dispute resolution and sanction procedures in place. PRIDE is also using lessons to accelerate project construction. A key constraint has been staffing in the programme management unit. The procurement specialist was recently replaced, and efforts are already under way to improve working relations with technical teams. To address bottlenecks in procurement approvals, the government has streamlined the review and no objection process for bidding documents.
9. Progress under component 2 as of May 2022 includes 1,011 lead farmers (target: 780) who were trained in good agricultural practices (GAPs) and passed them on to a cumulative total of 12,650 farmers. PRIDE has built capacity in 33 producers' groups to manage market linkage activities through the Smallholder Horticulture Empowerment and Promotion (SHEP) Approach, as well as farmer business school approaches. Nutrition-sensitive interventions have been adequately integrated in PRIDE, and 604 households have been supported with nutrition services.
10. The aim of this additional financing will be to increase and expand project impacts by improving existing PRIDE-supported irrigation projects and increasing their numbers. Moreover, the additional financing will enable PRIDE to further support production, marketing and gender empowerment. To ensure that longer-term effects of COVID-19 do not jeopardize impact objectives, the additional financing will also be used to scale up response activities proposed during implementation. For many PRIDE beneficiaries, the economic impact of COVID-19 persists. In fact, according to the PRIDE MTR, beneficiaries' gross margins have declined by as much as 85 per cent in some cases, due to lower productivity and reduced market access. To support beneficiaries' recovery and greater resilience to future shocks, the additional financing will include completion of the digital marketing platform begun under the original financing.
11. Most of the additional financing will be allocated to infrastructure investments: (i) the installation of solar-powered reticulated water supply systems at all sites and the rehabilitation of five existing irrigation systems in the Karonga District; (ii) nine priority irrigation projects; (iii) the construction of two additional projects in the Nkhata Bay and Chiradzulu Districts; and (iv) support for scaling up climate-resilience-related and soft activities.
12. This additional financing will be accompanied by a US\$7 million grant from ASAP+, whose approval is expected by December 2022. The ASAP+ funds will be combined with the additional financing to fill PRIDE's financing gap. ASAP+ will accelerate the climate-resilience impacts of PRIDE by financing solar pumping installations and other climate-proofing measures. It will also complement GAP training and other production and marketing support by promoting climate-smart agriculture; climate information service; optimization of irrigation scheduling; post-harvest and pest management; the reduction of pressure on soils by diversifying and adapting livelihoods; and the reduction of deforestation through energy-efficient cookstoves.

**Special aspects relating to IFAD's corporate mainstreaming priorities**

13. In line with IFAD's mainstreaming commitments, PRIDE has been validated as:
  - Including climate finance
  - Nutrition-sensitive

14. **Gender equality and women's empowerment.** Despite higher participation in agriculture, women tend to be less productive than men due to their limited ownership of assets and access to credit. PRIDE's results show that more women (60 per cent) than men (40 per cent) are members of farmers' organizations. A total of 919 households are being mentored using the household approach. The additional financing will increase the focus on addressing social norms through expanded household methodologies, which will include approaches such as use of the Social Norms Diagnostic Tool. As outreach currently stands at 54 per cent, the target for women will increase from 30 per cent to 50 per cent, since ASAP+ also provides scope to implement women-centric activities, such as energy-efficient technologies.
15. **Nutrition.** Malnutrition in women and children remains a serious development challenge in Malawi. Stunting stands at 33.7 per cent of children aged 0-59 months. Food insecurity and poor feeding practices result in poor nutrition outcomes. Nutrition-sensitive interventions have been adequately integrated in PRIDE. To date, 9,604 households have received nutrition support, including nutrition messaging, the development of integrated homestead farming for indigenous crops and a small-livestock pass-on project. The additional financing will promote access to diversified diets and their consumption through strategies that promote food security, dietary diversification and healthier environments. Strategic interventions for scaling up include energy-efficient cookstoves, improved GAP knowledge for integrated homestead food production and a pass-on project. These will be provided to current beneficiaries to heighten impacts.
16. **Youth.** With 51 per cent of the population below the age of 15 and youth (aged 15-29) accounting for more than one quarter of the total population,<sup>1</sup> agriculture offers more opportunities for job creation for youth than other economic sectors do. Nonetheless, youth in Malawi face a series of challenges that include limited access to resources, limited capacity and the perception that farming is not a profitable enterprise. PRIDE engages youth through theatre for development, which disseminates key messages about water and land rights, child labour, GAPs, nutrition, and catchment management. PRIDE also helps tackle youth challenges in agriculture through SHEP and market linkages to catalyse their engagement in agri-enterprises.
17. **Climate change.** Malawi is experiencing climate variability and climate change, which are contributing to climate shocks that have increased in both severity and frequency. These shocks include erratic rainfall, droughts, prolonged dry spells, high winds and hailstorms. Climate change impacts are serious and manifest through lower yields, increased pest and disease outbreaks, damage to rural infrastructure, reduced soil fertility, livestock losses, etc., adding to the perennial challenges of land degradation and deforestation driven by population growth, and of rural energy supply and unsustainable agricultural practices.
18. **Environment and natural resource management.** Approximately 80 per cent of Malawians depend on renewable natural resources for their livelihood in an economy based primarily on rainfed agriculture. However, environmental degradation and climate change have become major development issues, adversely impacting food security, water quality and energy security and hampering government efforts to improve the livelihoods of rural and urban communities.

## **B. Description of geographical area and target groups**

19. PRIDE will remain a nationwide programme with a geographic targeting approach to reach smallholder farmer communities in and around 16 medium-scale irrigation projects in nine districts across two regional clusters in northern and southern Malawi.

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<sup>1</sup> 2018 Population and Housing Census.

20. The programme's original financing target was 17,500 irrigated and 2,000 rainfed farming households, with a total outreach of 19,500. At MTR, the outreach for irrigated farming households was revised downward to 12,913, while the overall number of farmers to be reached through irrigation and rainfed farming was kept at 19,500, thus increasing the rainfed farming targets. The additional financing will target an additional 3,643 beneficiaries over and above the 12,913 irrigation beneficiaries that will benefit from the rehabilitation of five irrigation systems and a further 1,335 irrigated farming households through the construction of two additional irrigation projects. This will increase the number of household beneficiaries on irrigated farms to 17,891, while maintaining a total design outreach of 19,500 (30 per cent youth and an increase to 50 per cent women). Since the additional financing design concluded that it is more critical for PRIDE to focus on irrigated farming activities, total outreach will remain the same, as the number of farms practising only rainfed farming will be reduced.
21. As of May 2022, PRIDE had reached a cumulative total of 16,022 households against a target of 19,500. Fifty-four per cent of the directly targeted persons were women, and 22 per cent youth. ERASP investments are complementing PRIDE investments in four of the most vulnerable water resource units in Karonga, Machinga, Phalombe and Dowa, benefiting 10,781 households with climate adaptation and mitigation interventions.

Table 1  
Total PRIDE outreach

	End target (design)	End target (MTR)	Results (May 2022)	End target with additional financing
Farmers receiving irrigation + soft interventions	17 500	12 913	10 330	17 891
Farmers receiving only soft interventions as support for rainfed agriculture	2 000	6 587	5 692	1 609*
<b>Total outreach</b>	<b>19 500</b>	<b>19 500</b>	<b>16 022</b>	<b>19 500</b>

\*The end target for the number of farmers who will receive only soft interventions for rainfed agriculture is lower, because farmers who have already been supported with soft interventions will be targeted with irrigation.

### C. Components, outcomes and activities

22. The additional financing will be implemented within the framework of PRIDE's three components.
23. **Component 1: Irrigation development and catchment management.** This component is aimed at developing resilient land and water management systems for smallholder households on both rainfed and irrigated lands. It has three subcomponents: (i) **Land and water governance**, which targets the preparatory stage of all investments in the irrigation project cluster areas; (ii) **Irrigation system development**, focusing on the implementation of irrigation projects; and (iii) **Soil and water conservation**, which addresses urgent environmental degradation risks in project cluster areas by funding soil and water conservation measures. Within the nine priority projects to be constructed, there were two large projects (Mzenga, with 900 ha; and Chipofya, with 983 ha) whose construction was projected to extend beyond PRIDE's initial completion year. The additional financing will therefore support their completion and the construction of two additional projects: the Mpamba Weir project in the Nkhata Bay District, and Nazombe, in the Chiradzulu District, covering 534 ha; and the rehabilitation of five additional irrigation systems (1,004 ha).
24. **Component 2: Agriculture and market linkages.** This component is aimed at supporting knowledge transfer to smallholder farmers through trials and demonstrations and ensuring that they are linked to viable markets. It has three subcomponents: (i) **Good agricultural practices**, focusing on adaptation and the dissemination of existing climate-smart good agricultural practices; (ii) **Market**

**linkages**, to link smallholder farmers to existing markets or market opportunities; and (iii) **Mainstreaming nutrition**, which contributes to scaling up nutrition. PRIDE will continue to develop the capacity of farmers who engage in irrigation-based farming to manage market linkage activities. Nutrition-sensitive interventions will continue to be integrated across programme components; this will include the creation of backyard gardens to promote integrated homestead farming for access to a diversity of foods. These activities will target existing beneficiaries to augment and consolidate project impacts.

25. **Component 3: Programme management and coordination.** This component focuses on programme management, procurement, planning, budgeting, financial management and monitoring and evaluation (M&E). The programme coordination office (PCO) will be maintained for implementation of the additional financing.

## D. Costs, benefits and financing

### Programme costs

26. The original programme costs, including contingencies, were estimated at US\$83.9 million, with the following breakdown: component 1: US\$53.6 million (64 per cent of costs); component 2: US\$21.1 million (25 per cent); and component 3: US\$9.3 million (11 per cent). At MTR, total programme costs were estimated at US\$83.048 million, divided into: component 1: US\$62.6 million (75.4 per cent of costs); component 2: US\$11.038 million (13.3 per cent); and component 3: US\$9.397 million (11.3 per cent).
27. The total additional financing cost of US\$41.9 million will be used to fill the financing gap and scale up PRIDE. It will be allocated as follows: component 1: US\$34.5 million (82.3 per cent of additional financing costs); component 2: US\$3.5 million (8.4 per cent) and component 3: US\$3.9million (9.3 per cent).

Table 2  
**Original, MTR and additional financing summary**  
(Thousands of United States dollars)

	<i>Original financing</i>	<i>MTR financing</i>	<i>Additional financing</i>	<i>Total</i>
IFAD loan	26 483	26 483	27 700	54 182
IFAD grant	26 540	26 540	-	26 540
Other cofinanciers	7 561	7 561	7 000	14 561
Beneficiaries	7 283	6 979	2 786	12 664
Private sector	3 000	2 400	-	2 400
Borrower/recipient	13 083	13 085	4 442	17 527
<b>Total</b>	<b>84 490</b>	<b>83 048</b>	<b>41 928</b>	<b>125 474</b>

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

<i>Component/subcomponent</i>	<i>Additional IFAD loan</i>		<i>Additional</i>						<i>Total</i>
			<i>Other cofinanciers</i>		<i>Beneficiaries</i>		<i>Borrower/recipient</i>		
	<i>Amount</i>	<i>%</i>	<i>Amount</i>	<i>%</i>	<i>In-kind</i>	<i>%</i>	<i>In-kind</i>	<i>%</i>	<i>Amount</i>
1.1 Land and water governance	1 982	7	300	4	188	7	-	-	2 469
1.2 Irrigation system development	19 954	72	4 102	59	2 364	85	4 400	99	30 820
1.3 Soil and water conservation	-	-	970	14	235	8	-	-	1 205
2.1 Good agricultural practices	764	3	673	10	-	-	-	-	1 437
2.2 Market linkages	962	3	380	5	-	-	-	-	1 342
2.3 Mainstreaming nutrition	710	3	50	1	-	-	-	-	760
3.1 Knowledge management, planning and M&E	1 288	5	525	8	-	-	42	1	1 855
3.2 Programme management and coordination	2 041	7	-	-	-	-	-	8	2 041
<b>Total</b>	<b>27 700</b>	<b>66</b>	<b>7 000</b>	<b>17</b>	<b>2 786</b>	<b>7</b>	<b>4 442</b>	<b>11</b>	<b>41 928</b>



Table 4

**Additional financing: programme costs by expenditure category and financier**

(Thousands of United States dollars)

Expenditure category	Additional								Total Amount
	Additional IFAD loan		Other cofinanciers		Beneficiaries		Borrower/ recipient		
	Amount	%	Amount	%	In-kind	%	In-kind	%	
1. Works	18 466	67	4 298	61	2 395	86	4 400	99	29 559
2. Vehicles	-	-	-	-	-	-	-	-	-
3. Equipment and materials	405	1	988	14	203	7	-	-	1 597
4. Studies and consultancies	3 258	12	380	5	-	-	42	1	3 680
5 Training	1 877	7	1 148	16	188	7	-	-	3 213
5. Cofinancing	-	-	-	-	-	-	-	-	-
7. Operations and maintenance	931	3	-	-	-	-	-	-	931
8. Salaries and allowances	2763	10	185	3	-	-	-	-	2 948
<b>Total</b>	<b>27 700</b>	<b>66</b>	<b>7 000</b>	<b>17</b>	<b>2 786</b>	<b>7</b>	<b>4 442</b>	<b>11</b>	<b>41 928</b>

Table 5

**Programme costs by component and programme year (PY)**

(Thousands of United States dollars)

Component/subcomponent	PY1		PY2		PY3		PY4		Total Amount
	Amount	%	Amount	%	Amount	%	Amount	%	
1.1 Land and water governance	275	2	869	4	857	18	468	19	2 469
1.2 Irrigation system development	11 000	86	18 202	83	1 297	28	320	13	30 820
1.3 Soil and water conservation	433	3	503	2	268	6	-	-	1 205
2.1 Improved agricultural practices	327	3	577	3	299	6	235	10	1 437
2.2 Market linkages	325	3	437	2	352	8	228	9	1 342
2.3 Mainstreaming nutrition	213	2	223	1	183	4	139	6	760
3.1 Knowledge management, planning and M&E	214	2	595	3	635	14	411	17	1 855
3.0 Programme management and coordination	-	-	625	3	792	17	625	26	2 041
<b>Total</b>	<b>12 788</b>	<b>30</b>	<b>22 031</b>	<b>53</b>	<b>4 683</b>	<b>11</b>	<b>2 426</b>	<b>6</b>	<b>41 928</b>

**Financing and cofinancing strategy and plan**

28. The total additional financing of US\$41.93 million includes financing from the Government of Malawi of US\$4.4 million (11 per cent of total costs) in the form of taxes and duties, staff time and office space. IFAD's contribution will be US\$27.7 million or the equivalent (66 per cent of total costs, US\$18.02 million of it in climate finance) through two loans on super highly concessional terms and highly concessional terms, respectively. The beneficiaries' contribution will be US\$2.8 million (7 per cent of total costs). The ASAP+ grant of US\$7.0 million (17 per cent of total costs) will finance the climate resilience of livelihoods and infrastructure.

**Disbursement**

29. The original financing has been disbursed quarterly through IFAD replenishment of PRIDE's designated accounts. Disbursement of the additional financing, which will be based on quarterly interim financial reports based on two-quarter cash forecasts, will be effected through the existing designated accounts. It has been estimated that financial years 2023/24, 2024/25, 2025/26 and 2026/27 will respectively disburse 30 per cent, 53 per cent, 11 per cent and 6 per cent of the original cash balance of US\$28.6 million and the additional financing cash balance of US\$34.7 million. Disbursement will be proportionately high in the first two years, as most irrigation construction works are planned for completion by then to leave a two-year window for observing defects in the irrigation infrastructure and for

intensified GAP promotion among beneficiaries. The revised disbursement schedule is feasible under IFAD's current liquidity policy.

### **Summary of benefits and economic analysis**

30. As the target outreach under the additional financing remains the same, the cost per beneficiary increases from US\$4,300 to US\$6,400 per household. Based on estimates of IFAD's Sustainable Production, Markets and Institutions Division, the costs for constructing irrigation projects across the region have risen by 15 to 20 per cent. In Malawi, this is driven by increases in gasoline, diesel and kerosene prices of 80 per cent, 87 per cent and 67 per cent, respectively, since October 2021. The higher cost per beneficiary is also driven by the aim of heightening the impact per beneficiary by increasing the projects' climate resilience. Moreover, under the original financing, 2,000 beneficiaries were to continue practising rainfed farming but receive additional support, while under the additional financing, an additional 391 of these farmers' lands will be brought under irrigation; thus, while total outreach does not increase, far greater impacts are expected for these households.
31. The economic rationale for PRIDE is based on: (i) higher agricultural productivity and the reduction of post-harvest losses in both rainfed and irrigated farming systems through the adoption of GAPs, and (ii) increased cropping intensity and switching to high-value crops on irrigated lands. The crop models assumed rainfed farming only and rainfed and irrigated farming combined. All models have yielded positive results, with incremental net income ranging from US\$87 to US\$4,562 (under a full development scenario). All household models have also exhibited positive incremental margins.
32. For the economic analysis, as detailed in appendix II, only incremental economic benefits and costs were considered, with aggregated models valued at economic prices. Net incremental benefits were calculated for a 20-year period, aggregating each model's total beneficiaries. The economic internal rate of return (EIRR) for the additional financing is 21.5 per cent and net present value (NPV) US\$8.309 million, at a 15 per cent discount rate, considered the opportunity cost of capital for Malawi.
33. The sensitivity analysis shows that PRIDE's NPV only turns negative when costs increase by 50 per cent and when benefits decrease by 20 per cent. For example, under the most pessimistic scenario of an increase in programme costs of around 20 per cent, the EIRR would be at 15.9 per cent, above the threshold rate of 15 per cent, and the NPV would be positive at US\$1.4 million.

### **Exit strategy and sustainability**

34. PRIDE uses existing local government structures to implement its activities, with technical support from the PCO. This design obviates the exit problems commonly faced by programmes that rely on externally recruited service providers. PRIDE is also creating and building the capacity of community-based institutions to manage irrigation infrastructure and coordinate community soil and water conservation. This includes capacity-building for WUAs and heightened measures to ensure that they are registered, as well as the preparation of memorandums of understanding between WUAs and government to ensure that the operation and maintenance of systems continues after project closure. Farmers' groups and leaders are receiving support to increase their capacity to sustain initiatives involving technology development and transfer and take collective action to improve market access. In this regard, they are receiving support to enter into sustainable contractual arrangements with off-takers. Thirty groups have entered into such agreements thus far, and their numbers are expected to increase thanks to irrigation.
35. Investments are also being directed towards building community and farmer-based institutions, such as village natural resource management committees (VNRMCs) and WUAs, to ensure community participation in resource management, as well as

mechanisms to sustain programme investments. Village-level action plans and VNRMCs have played a critical role in environmental compliance monitoring and supervision. PRIDE is contributing to the revamping and development of various commodity platforms that serve as key instruments for coordinating stakeholder investments in the target commodities and provide marketing opportunities for beneficiaries.

36. Capacity-building for relevant government staff is an appropriate exit strategy for the PCO, which has begun to develop an exit strategy and prepared a concept note that includes several consultation meetings with key stakeholders. A detailed exit strategy matrix with responsibilities is included in annex III.

### **III. Risk management**

#### **A. Risks and mitigation measures**

37. Key risks include the effects of climate change; environmental, fiduciary and unstable macroeconomic factors; political instability; and inadequate institutional capacity to implement and coordinate activities, resulting in implementation delays. Mitigation measures will include the design and implementation of climate-resilient infrastructure, the promotion of integrated soil management practices, close monitoring of procurement processes, use of both public and private sector entities to implement programme activities and improved coordination at the district level.

#### **B. Environment and social category**

38. The original PRIDE design is classified as Category A for environment and social risk – the highest risk category, due to the inclusion of medium-sized and large irrigation projects. Since the specific irrigation sites to be developed under PRIDE were unknown at design, an environmental and social management framework and a resettlement action framework were produced during the application of IFAD’s Social, Environmental and Climate Assessment Procedures (SECAP) to guide programme implementation. Site-specific environmental and social impact assessments have been conducted for all priority irrigation projects and the necessary approvals obtained.
39. The additional financing will maintain the Category A classification, applying the 2017 SECAP, since the activities to be financed and geographical areas were stipulated in the original design. The irrigation projects and beneficiaries under this additional financing are those that were deprioritized at MTR due to lack of funding.

#### **C. Climate risk classification**

40. The original programme’s climate risk classification is “moderate,” recognizing that the investments are in Malawi’s heterogeneous climatic areas and that a variety of crops will be cultivated in the irrigated and rainfed areas. The “moderate” climate risk classification is maintained for the additional financing. The interventions are exposed to floods and droughts, which are likely to increase in frequency/severity, impacting agricultural production, irrigation infrastructure and, ultimately, the livelihoods of farming communities. These risks have materialized in multiple programme sites. However, the interventions have proven successful in mitigating their effects, and this additional financing with the ASAP+ funding is expected to continue in the same vein.

### **IV. Implementation**

#### **A. Compliance with IFAD policies**

41. Implementation of the original PRIDE and additional financing is consistent with the country strategic opportunities programme (COSOP) 2023-2030, reviewed by the Executive Board in September 2022, and its predecessor, COSOP 2016-2022. PRIDE is also aligned with the development assistance strategy and all other IFAD financial management and procurement policies.

42. PRIDE will be implemented in line with IFAD's Strategy and Action Plan on Environment and Climate Change 2019-2025, SECAP guidelines, and the guidelines and procedures of the core mainstreaming themes of nutrition, youth and the Policy on Gender Equality and Women's Empowerment (2019).

## **B. Organizational framework**

### **Management and coordination**

43. The programme will be implemented by the existing PCO under the lead ministry. The programme's steering committee and technical committee will continue working in close collaboration to provide effective programme oversight and guidance and ensure timely critical decision-making, including on the interventions to be supported by the additional financing, in pursuit of the programme's mandate.

### **Financial management, procurement and governance**

44. PRIDE's financial management function is relatively well-organized in terms of staffing and systems, with moderately satisfactory performance at the latest supervision mission. It is equipped to manage the additional financing without the need for any major adjustments. The accounting system allows for adequate traceability of the programme's financial transactions.
45. Using TOMPRO accounting software, PRIDE expenditure reports are analysed by component and category, the preparation of withdrawal applications is facilitated, and budget monitoring and control are adequately performed. The PRIDE PCO submits quarterly interim financial reports that include cash forecasting for the next two quarters to ensure prompt liquidity phasing.
46. The external audit of the programme is performed by the National Audit Office of Malawi. Audit reports are submitted on time, and their quality is consistent with IFAD requirements.
47. Procurement of goods and consulting services in the additional financing will follow IFAD's Project Procurement Guidelines. National procurement procedures, processes and regulations under the Procurement Law will be applied insofar as they are consistent with IFAD's Project Procurement Guidelines. The PCO will ensure that Internal Procurement and Disposal Committee authorizations are issued in a timely manner to mitigate delays in obtaining approvals. The PCO will need to develop specific tools to ensure internal accountability for the progress of activities at different stages of procurement, including contract management and the duty of district procurement managers to submit procurement documents for review by the PCO procurement officer. These arrangements will be reflected in amendments to the programme implementation manual.

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

48. Overall, PRIDE has a sound M&E system. Data on outreach, activities and outputs are regularly collected and disaggregated by gender and age. Following the MTR, PRIDE began reporting on outcomes. Additional financing activities will be monitored through this M&E system. PRIDE's logframe (appendix I) has been adjusted to reflect the higher end targets envisaged with the additional financing. Activity and output data will be analysed by the M&E officer, and findings will be shared with programme management during monthly coordination meetings. This information will serve as the basis for the preparation of periodic progress reports and the reporting of M&E data to IFAD.
49. PRIDE is currently setting up a new management information system (MIS), called DATA.IFAD/ESA. In addition to other functions, the new MIS will record the profile of each beneficiary, as well as geographic information system locations of programme interventions.

50. A baseline survey has already been conducted in all target districts to document the socio-economic and livelihood conditions of potential beneficiary households prior to programme interventions. A core outcome indicator (COI) mid-line survey will be conducted during the 2022/2023 financial year. The COI survey will be repeated at completion to measure programme impact against the baseline situation.
51. Under the additional financing, PRIDE will continue producing a quarterly newsletter (English and Chichewa), newspaper articles, radio programmes on PRIDE/ERASP interventions and television interviews. Knowledge management products will be distributed via email to government and other development partners, while printed versions in Chichewa will be disseminated in targeted communities.

#### **D. Proposed amendments to the financing agreement**

52. The financing agreement will be amended to incorporate the additional financing of US\$27.7 million or the equivalent in IFAD financing and US\$7 million or the equivalent in ASAP+ Trust Fund financing, which, together with the original financing and additional cofinancing contributed by the Government of Malawi and beneficiaries, amounts to US\$125 million.

#### **V. Legal instruments and authority**

53. A financing agreement between the Republic of Malawi and IFAD will constitute the legal instrument for extending the proposed financing to the borrower/recipient. The signed financing agreement will be amended following approval of the additional financing.
54. The Republic of Malawi is empowered under its laws to receive financing from IFAD.
55. 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**

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

RESOLVED: that the Fund shall provide a loan on super highly concessional terms to the Republic of Malawi in an amount of special drawing rights sixteen million eight hundred and fifty thousand (SDR 16,850,000) and upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented herein.

RESOLVED FURTHER: that the Fund shall provide a loan on highly concessional terms to the Republic of Malawi in an amount of special drawing rights four million two hundred thousand (SDR 4,200,000) 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	Baseline	Mid-Term	Original End Target	Revised End Target	Source	Frequency	Responsibility	
Outreach	<b>1 Persons receiving services promoted or supported by the project</b>					Baseline, MTR, Annual Outcome surveys, Programme records	Project start, progress reports, mid-term and completion	PCO/MoAIWD	No major impact of climate shocks; Policies remain conducive to agriculture; Market prices remain favourable or at least stable: 70% Male headed; 30% youth
	Males - Number	0	6825	13650	9750				
	Females - Number	0	2925	5850	9750				
	Young - Number	0	2925	5850	5850				
	Not Young - Number	0	6825	13650	13650				
	Total number of persons receiving services - Number of people	0	9750	19500	19500				
	<b>1.a Corresponding number of households reached</b>					Baseline, MTR and Annual Outcome surveys, Programme records	Project start, progress reports, mid-term and completion	PCO/MoAIWD	No major impact of climate shocks; Policies remain conducive to agriculture; Market prices remain favourable or at least stable: 70% Male headed; 30% youth
	Non-women-headed households - Number	0	6825	13650	9750				
	Women-headed households - Number	0	2925	5850	9750				
	Households - Number	0	9750	19500	19500				
	<b>1.b Estimated corresponding total number of households members</b>					Baseline, MTR, Annual Outcome surveys, Programme records	Project start, progress reports, mid-term and completion	PCO/MoAIWD	No major impact of climate shocks; Policies remain conducive to agriculture; Market prices remain
	Household members - Number of people	0	48750	97500	97500				



sustainable agricultural production	Smallholder male with 3 fold increase (irrigation) - Number of households	0	3616	7231	5950
	Smallholder female with 3 fold increase (irrigation) - Number of people	0	1550	3099	5950
	Smallholder young with 3 fold increase (irrigation) - Number of households	0	1550	3099	3570
	Smallholder not young with 3 fold increase (irrigation) - Number of households	0	3616	7231	8330
	Smallholder young (rainfed only) - Number of households	0	791	1581	1110
	Smallholder not young with 2 fold increase (rainfed only) - Number of households	0	1845	3689	2590
	Smallholder male with 2 fold increase (rainfed only) - Number of households	0	1845	3689	2904
	Smallholder female with 2 fold increase (rainfed only) - Number of households	0	791	1581	796
<b>Smallholder households reporting decreased incidence of hunger periods measured by number of meals per day and by increased dietary diversity</b>					
<b>Months of Food insecurity of the household disaggregated by gender of household head</b>	Average 4 months	Average 3 months	< 2 months for all households	< 2 months for all households	
	7271	5 460	10 920	9 750	
Male - Number	2768	2 340	4 680	9 750	
Female - Number	2949	2 340	4 680	5 850	
Young - Number					

least stable:  
80%  
technology uptake: 50%  
Male headed;  
30% youth

Baseline, and Annual Outcome Surveys, MTR, Project completion report

Annually

PCO/Dol

No major impact of climate shocks; Policies remain conducive to agriculture; Market prices remain favourable or at least stable: 80% technology uptake: 70% Male headed; 30% youth



		7090	5 460	10 920	13 650				
Not Young - Number									
<b>Total Households - Number</b>		<b>10039</b>	<b>7 800</b>	<b>15 600</b>	<b>19 500</b>				
<b>Individuals demonstrating an improvement in empowerment</b>						Baseline, MTR, Project Completion Report	Baseline, MTR and at Project completion	PCO/DoI	
Total persons Percentage (%)		0%	35%	70%	70%				
Total persons (number)		0	6825	13650	13650				
Women (number)		0	2047	4095	6835				
Women - Percentage (%)		0%	35%	70%	70%				
Men - number		0	4777	9555	6835				
		0	35%	70%	70%				
Men. Percentage									
<b>Outcome</b> 1. Smallholder households sustainably operate climate-resilient land and water management systems on both rainfed and irrigated lands	<b>Farmers with secured access to land and water</b>					Land Use surveys	Year 3, 5, 7	PCO/DOI	No major impact of climate shocks; Policies remain conducive to agriculture; Market prices remain favourable or at least stable: 80% technology uptake: 70% Male headed; 30% youth
		0	4520	9039	8945				
		0	1937	3874	8646				
		0	6457	12913	17591				
<b>Incremental hectares of crops in irrigated land throughout seasons</b>						Land use survey	Bi-annually	PCO/DOI	
Hectares of land - Area (ha)		0	1000	3115	4653				

					Annual Outcome Surveys	Annually	PCO/DOI/EAD	
<b>1.2.1 Households reporting improved access to land, forests, water or water bodies for production purposes (Effectiveness of WUAS and VNRMCs-irrigated and catchment)</b>								
Households reporting improved access to water - Percentage (%)	0	30	66	91				
Women-headed households - Number	0	1937	3874	8945				
Non-women-headed households - Number	0	4520	9039	8945				
Total no. of households reporting improved access to water - Number	0	6457	12913					
					Annual Outcome Survey	Annually (from year 2)	PCO/DOI	
<b>ASAP4: Households supported with increased water availability or efficiency</b>								
Households - Percentage (%)	0	30	80	91				
Households - Number	0	7800	15600	17891				
Women-headed households - Number	0	2430	4860	8945				
Non-women-headed households - Number	0	5460	10920	8945				
<b>WUA managing infrastructure formed or strengthened</b>					WUA records, Annual outcome survey	Semi-Annually	PCO/DOI	Registration of 15 Water Users'
WUA - Number	0	4	9	16				Associations is facilitated by the concerned agency; Government is able to assist WUAs additional financingected
<b>1.1.1 Households whose ownership or user rights over natural resources have been registered in national cadasters and/or geographic information management systems</b>					Annual outcome surveys	Annually	PCO/DOI	
Males - Number	0	4520	9039	7242				
Females - Number	0	1937	3874	7241				

**Output**  
1.1  
Communities effectively manage their land and water management systems

Young - Number	0	1937	3874	4345
Total number of persons - Number of people	0	6457	12913	14483
Not Young - Number	0	4520	9039	10138

by extreme events in recovering their system's functionality

<b>Output</b> 1.2 Medium-sized irrigation systems (50-1000 ha) established	<b>Land consolidation and tenure arrangements completed</b>				WUA records/ Land use survey	Annually	PCO/DOI	No major delays / implementation bottlenecks; Unit costs are kept within USD 7,800 per hectare
	Hectares of land - Area (ha)	0	1538	3115				
	<b>1.1.2 Farmland under water-related infrastructure constructed/rehabilitated</b>				Annual land use survey	Upon hand-over of complete scheme	PCO/DOI	
	Hectares of land - Area (ha)	0	800	3115	4653			
<b>Output</b> 1.3 Erosion-affected and vulnerable rainfed land recovered	<b>ASAP2: Land under climate-resilient practices</b>				Annual land use survey	Annually	PCO/DOI	GOM policies re catchment natural resources benefit the scheme cluster areas
	Land area - Area (ha)	0	500	1000				
	<b>Rural Infrastructure made climate resilient</b>							
	Climate proofed irrigation schemes - Number	0	4	9	16			
	Cost of climate proofing infrastructure (US\$)	0	1 250 000	2 500 000	2 500 000			
	<b>ASAP6: Community groups engaged in NRM and climate risk management activities</b>				Progress reports/ Annual outcome surveys	Annually	PCO/DOI	
	Groups supported - Number	0	144	144				
<b>New or existing rural infrastructure protected from climate events (US\$' 000/Km)</b>								
Value - Money (USD' 000)	0		16000	16000				

<b>Outcome 2.</b> Environmentally and economically sustainable agricultural production systems adopted by smallholder households on both rainfed and irrigated lands	<b>Farmer households report yield increase (&gt; 20% above baseline) from improved rainfed agricultural production</b>				Annual Outcome Surveys	Annually	PCO/DOI	No major impact of climate shocks; Policies remain conducive to agriculture; Market prices remain favourable or at least stable: 80% technology uptake: 70% Male headed; 30% youth	
	Households - Number	0	2636	5 270					5 270
	Male headed households Number	0	1845	3 689					2635
	Females headed households Number	0	791	1 581					2635
	Non young-headed households Number	0	1845	3 689					3 689
	Young headed households Number	0	791	1 581					1 581
	<b>1.2.2 Households reporting adoption of new/improved inputs, technologies or practices - (Climate Smart Good Agricultural Practices)</b>				Annual Outcome Surveys	Annually	PCO/DOI		
	Households - Number	0	7800	15 600					15 600
	Male headed households Number	0	5460	10 920					7800
	Females headed households Number	0	2340	4 680					7800
	Non young-headed households Number	0	5460	10 920					10 920
	Young headed households Number	0	2340	4 680					4 680
	<b>3.2.2 Households reporting adoption of environmentally sustainable and climate-resilient technologies and practices</b>				Annual Outcome Surveys	Annually	PCO/DOI/EAD/DAES		
	Households - Percentage (%)	0	40	80					80
	Women-headed households - Number	0	2340	4680					7800
	Non-women-headed households - Number	0	5460	10920					7800

Household members - Number of people	0	39 000	78 000	78 000			
Households - Number	0	7800	15600	15600			
<b>2.2.3 Rural producers' organizations engaged in formal partnerships/agreements or contracts with public or private entities (Producer groups with sale contracts)</b>					Annual Outcome Surveys	Annually	PCO/DOI/DAES
Percentage of PO - %	0	30	70	80			
Number of POs - Number	0	4	9	12			
<b>2.2.5 Rural producers' organizations reporting an increase in sales (increase= +100%)</b>					Annual Outcome Surveys	Annually	PCO/DOI/DAES
Percentage of rural POs - Percentage (%)	0	30	70	80			
Number of rural POs - Number	0	4	9	12			
<b>Households report yield increase (&gt;50% above baseline) from improved irrigation agricultural production</b>					Annual Outcome Surveys	Annually	PCO/DOI/DAES
Households - Number	0	5165	10330	11900			
Male headed households Number	0	3616	7231	5950			
Females headed households Number	0	1550	3099	5950			
Young headed households Number	0	1550	3099	3570			
Not young-headed households Number	0	3616	7231	8330			
<b>1.2.8 Women reporting minimum dietary diversity (MDDW)</b>					Annual Outcome Surveys	Annually	PCO/DOI/DAES
Percentage - Percentage (%)	37.65	30	60	60			
Households - Number	7342	4095	8190	8190			

	Households - Percentage (%)	37.65	30	60	60									
	Total household members - number	36075	29250	58500	58500									
	Women reporting improved quality of their diets - Number	7342	4095	8190	8190									
<b>Output</b> 2.1 Smallholder farmers trained on good agricultural practices on rainfed and irrigated land	<b>1.1.4 Persons trained in production practices and/or technologies</b>					Programme reports	Semi-annually	PCO/MoAIWD	GOM capacity can be complemented by mobilisation of private sector service providers.					
		Yong trained - Number	0	2925	5850					5850				
		Not young trained - Number	0	6825	13650					13650				
		Males - Number	0	6825	13650					9750				
		Females - Number	0	2925	5850					9750				
		Total Lead farmers trained - Number of people	0	390	780					780				
		Total persons - Number	0	9750	19500					19500				
	<b>3.1.2 Households provided with climate information services</b>									Annual outcome surveys and progress reports	Annually	PCO/DOI/Met		
		Males households- Number	0	6825	13650									9750
		Female households - Number	0	2925	5850									9750
	Young households - Number	0	2925	5850	5850									
	Not Young households - Number	0	6825	13650	13650									
	Households provided with climate info services - Number	0	9750	19500	19500									
<b>Output</b> 2.2 Smallholder farmers linked	<b>2.2.1 Number of persons trained in income-generating activities or business management</b>					Programme reports / MICF reports	Annually	PCO/DOI/DAES	PRIDE successfully engages all					
	<b>2.1.2 Persons trained in income-generating activities or business management</b>													

to improved markets	Households - number	0	1313	2625	2625				target group segments in programme activities; FBS to target 70% of the food secure and 30% of the food insecure in the target areas; Producer organisations strengthened or trained through SHEP and other competence based trainings	
	Males households- Number	0	656	1313	1313					
	Female households - Number	0	656	1312	1312					
	Young households - Number	0	395	789	789					
	Not Young households - Number	0	918	1836	1836					
	<b>Number of Producer Organisations strengthened/trained (Producer organisations being the unsolicited farmer groups in the catchments)</b>									
	PO - Number	0	50	100	100					
	Number of producers involved		2500	5000	5000					
<b>Output</b> 2.3 Smallholder households improve nutritional intake	<b>1.1.8 Households provided with targeted support to improve their nutrition</b>					Programme reports	Semi-annually	PCO/DOI/DAES	PRIDE successfully includes women and youth in leading roles in WUAs , FFS, etc. ; This intervention will target food insecure and food deficit households	
	Total Households - Number	0	6825	13650	13650					
	Males households- Number	0	4778	9555	6825					
	Female households - Number	0	2048	4095	6825					
	Young households - Number	0	2048	4095	4095					
	Not Young households - Number	0	4778	9555	9555					

## Updated summary of the economic and financial analysis

### Economic and Financial Analysis Tables

**Table A: Financial cash flow models**

Table A summarizes the most representative financial models including the cash flow for 10 years (in local currency) and profitability indicators.

Table A		Crop Models						Farm Models		
F I N A N C I A L  A N A L Y S I S	Crop Models Incremental Benefits (Mk)								Farm Models Incremental Benefits (Mk)	
	Maize/Maize Intercropped	Groundnut	Beans	Onions	Irish Potato	Tomato	Cabbage	Farm 1	Farm 2	
	PY1	- 51,023	- 68,835	- 95,802	-	1,954,800	- 87,500	-	25,206	- 24,788
	PY2	- 19,971	38,172	- 15,434	- 1,208,906	1,192,083	- 453,704	- 665,866	- 19,092	259,107
	PY3	26,657	209,384	32,787	- 411,393	2,569,748	- 106,251	- 79,030	101,471	551,935
	PY4	61,453	397,718	48,414	388,455	4,064,748	240,141	290,270	228,622	852,668
	PY5	88,216	474,763	97,082	1,344,795	4,639,748	851,421	795,181	293,949	1,060,225
	PY6	88,216	474,763	97,082	1,895,415	4,639,748	1,157,061	1,148,875	302,888	1,131,673
	PY7	88,216	474,763	97,082	1,895,415	4,639,748	1,157,061	1,148,875	302,888	1,131,673
	PY8	88,216	474,763	97,082	1,895,415	4,639,748	1,157,061	1,148,875	302,888	1,131,673
PY9	88,216	474,763	97,082	1,895,415	4,639,748	1,157,061	1,386,125	302,888	1,131,673	
PY10	88,216	474,763	97,082	1,895,415	4,639,748	1,157,061	1,148,875	302,888	1,131,673	
NPV (Mk)	403,998	7,467,180	399,170	6,889,411	29,531,539	4,540,784	4,586,323	1,642,113	6,447,558	
NPV (US\$)	397	7,342	392	6,774	29,038	4,465	4,510	1,615	6,340	
FIRR	57%	183%	202%	52%	-	64%	61%	-	1148%	
ROI	62%	112%	31%	249%	154%	162%	83%	62%	116%	

**Table B: Programme costs and logframe targets**

Table B provides information on total project costs (broken down by component) and beneficiaries (broken down by category). This table also includes logframe targets as per the EFA.

Table B			
PROJECT COSTS AND INDICATORS FOR LOGFRAME			
TOTAL PROJECT COSTS (in million USD)		124.98	PMU 8.5
Beneficiaries	97,500 People	19,500 Households	
Cost per beneficiary	1,282 US\$ x person	6,409 US\$ x HH	Adoption rate 80%
Components and Cost (USD million)		Outcomes and Indicators	
<u>Irrigation development and catchment management</u>	100.1	Construction of 11 new schemes	Construct 11 new schemes on 4,294 HA land . Conduct detailed feasibility studies on 5 irrigation schemes  15,600 households adopt better agricultural practices; yields increase, higher income, productivity and more diversification.
<u>Agriculture for irrigation and rain-fed systems</u>	13.4	Good agricultural practices and value chain improvements adopted, nutrition education	
<u>Programme management and coordination</u>	12.5	Knowledge management on good agricultural practices and value chains	



**Table C: Main assumptions and shadow prices**

Table C shows the basic assumptions on yields and process for the main inputs and outputs. The economic section shows shadow prices used in the conversion.

c)		MAIN ASSUMPTIONS & SHADOW PRICES			
FINANCIAL	Output	% Increase in yields		Input prices( per KG)	Price (MK)
	Maize	25%		NPK	1,054
	Beans	80%		Urea	969
	Groundnuts	50%		Maize Seed	2,500
	Irish Potato	100%		secticides (e.g. Malathion)	5,625
	Onion	100%			
ECONOMIC	Official Exchange rate (OER)	1017	Economic discount rate	15%	
	Shadow Exchange rate (SER)	1074	Financial discount rate	4.0%	
	Standard Conversion Factor	0.90	Non tradable goods CF	1.00	
	Input Conversion factor	0.85	Labour Conversion Factor	0.65	

**Table D: Beneficiary adoption rates and phasing**

Table D shows the total number of project beneficiaries, subdivided into activities and phased following the inclusion pattern envisaged by the project and reflected in the EFA and COSTAB.

Table D	Items	target HH	Project Year									Total	
			Y 1	Y 2	Y 3	Y 4	Y 5	Y6	Y7	Y8	Y9		
	FARM 1 rain-fed only	1,609											
	adoption rate	80%											
	no. of HH	1,287.20	-	-	-	823	93	141	77	77	77	1,287	
	cummulative no. of HH		0	0	0	823	916	1058	1134	1211	1287		
	FARM 2 rain- fed & irrigation	17,891											
	adoption rate	80%											
	no. of HH/a	14,313	-	-	-	9,155	1,032	1,573	851	851	851	14,313	
	cummulative no. of HH		-	-	-	9,155	10,187	11,760	12,611	13,462	14,313		
	Total no. of HH		-	-	-	9,978	11,103	12,818	13,745	14,673	15,600	15,600	
	Total cummulative no. of HH	15,600	-	-	-	9,978	11,103	12,818	13,745	14,673	15,600		

**Table E: Economic cash flow**

Table E presents the overall project aggregation. Include the net incremental benefits of each financial model in economic terms, converted using shadow prices (table C) and multiplied by the number of beneficiaries (table D). Net incremental costs are to present all additional project costs. Last column indicates net cash flow to be used to calculate project profitability indicators such as economic NPV and economic IRR (EIRR).

Table E										
Economic Analysis	PY1	PY2	PY4	PY5	PY6	PY7	PY8	PY9	PY10	
Total Programme Increme	0	0	135	3,494	6,850	10,807	14,037	15,761	16,477	
Total Incremental Costs	-	220	2,901	7,856	8,867	17,661	28,469	17,150	3,769	
Benefits - Costs	0	(220)	(2,766)	(4,362)	(2,017)	(6,853)	(14,432)	(1,389)	12,708	
IRR		21.5%								
NPV @15% (US\$'000)		8,309								

**Table F: Sensitivity analysis**

The results show that the additional finance phase can face drops in benefits and increase in costs of 10 percent and still be profitable. However, increase of 20% in project costs would take the IRR to 14 percent, which is below the hurdle rate of 15 percent.

TABLE F					
SENSITIVITY ANALYSIS (SA)					
		Δ%	with Risk Ma	IRR (%)	NPV (US\$ '000)
<b>Base scenario</b>				21.5%	8,309
Project benefits		-10%		18.2%	4,021
Project benefits		-20%	Climate change including flooding	14.8%	- 266
Project benefits		-50%		4.2%	- 13,128
Project benefits		10%		24.9%	12,596
Project benefits		20%		28.3%	25,621
Project costs		10%	Unstable	18.5%	4,852
Project costs		20%	microecono	15.9%	1,396
Project costs		50%	mic	10.2%	- 8,974
1 year lag in ben.			Inadequate	16.2%	1,821
2 years lag in ben.			institutional	12.7%	- 3,820

**Annex III. Exit Strategy Matrix with Responsibilities**

Activity to continue	Who will take up the activity	Hand over/exit process	Who will continue financing	Potential for scaling
Irrigation dev.	Department of Irrigation	The programme will develop in partnership with GoM a comprehensive long term infrastructure maintenance strategy, identifying; costs, roles and responsibilities, financing plan, replacement and inspection routines. The programme will assess and ensure the Financial viability of WUAs through signed MoUs with the GoM, all stakeholders are identified with a pronounced funding mechanism The programme trains WUAs for maintenance, including the development of a training plan and budget for activities.	DoI and WUAs	The government has a number of irrigation schemes that are in the master plan and some of the schemes have had feasibility studies done through PRIDE. These schemes are likely to be financed through other donor projects and the government is exploring such funding. Climate proofing of the irrigation is something that the government has embraced and will likely be scaled up
Extension services for GAPs	Department of extension services	The extension services are already being provided through the government decentralized process and lead farmers are already integrated as part of the government extension system	Government will continue to support extension services also through the lead farmer approach	
Market linkages	Department of extension	Continue supporting farmer groups. Contracts between offtakers will continue	Department of extension and private	

	is mandated to support agribusiness development initiatives	as long as farmers and offtakers benefit from the relationship.	sector players that benefit from the commodity platforms	
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