TERMINAL EVALUATION OF THE UNDP/MAFRA PROJECT

Promoting the use of solar technologies for agriculture and rural development in Cambodia and Myanmar

Final Evaluation Report

Evaluation period: September 2023 – January 2024

Prepared by

Jon Garcia

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ACRONYMS and ABBREVIATIONS

Acronym / Abbreviation	Explanation
AC	Agricultural Cooperative
AF	Adaptation Fund project
AWP	Annual Work Plan
ASPIRE	“Agriculture Services Programme for Innovation, Resilience and Extension” Project
BRH	Bangkok Regional Hub
CBO	Community Based Organization
CERF	“Clean Energy Revolving Fund” climate change mitigation project
CESVI	Cesvi Foundation
CDR	Combined Delivery Reports
CFR	Annual Certified Financial Reports
CO	UNDP Country Office
CPD	UNDP Country Programme Document
CSO	Civil Society Organization
ENCORE	“Enabling Community Recovery and Resilience” Project
FGD	Focus Group Discussion
FWUG	Farmer Water User Groups
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas
IC	International Consultant
IFAD	International Fund for Agricultural Development
KRC	Korea Rural Community Corporation

LoA	Letter of Agreement
MAFRA	Ministry of Agriculture, Food and Rural Affairs of the Republic of Korea
MAFF	Ministry of Agriculture, Forestry and Fisheries. Cambodia
MoALI	Ministry of Agriculture, Livestock and Irrigation, Myanmar
MoU	Memorandum of Understanding
MSME	Micro, Small and Medium Enterprises
NC	National Consultant
NCDDS	National Committee for Sub-National Democratic Development
NCE	Nature, Climate and Energy
NGO	Non-Governmental Organization
NDC	Nationally Determined Contribution
PIR	Project Implementation Report
PIN	People In Need (Implementing partner in Cambodia)
PMC	Project Management Costs
PRF	Project Results Framework
ProDoc	Project Document
RGC	Royal Government of Cambodia
RPD	UNDP Regional Programme Document
SEAD	“Sustainable Enterprises and Agriculture Development (SEAD): Leveraging communication technology to synergise rural development in the Dry Zone of Myanmar” Project
SESP	UNDP´s Social and Environmental Screening Procedures
SDG	Sustainable Development Goal
SMART	Specific, Measurable, Attainable, Relevant and Time-bound
SP	UNDP Strategic Plan
SWP	Solar Water Pumping
TE	Terminal Evaluation
ToR	Terms of Reference

ROK	"Promoting the use of solar technologies for agricultural and rural development in Cambodia and Myanmar" Project
RPA	Responsible Party Agreement
RS4	Rectangular Strategy for Growth, Employment, Equity and Efficiency phase IV of the Royal Government of Cambodia
UNDP	United Nations Development Programme
UNDP AF	"Addressing Climate Change Risks on Water Resources & Food Security in the Dry Zone of Myanmar" project
UNEG	United Nations Evaluation Group
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific

EXECUTIVE SUMMARY

Project description

The project titled "*Promoting the use of solar technologies for agriculture and rural development in Cambodia and Myanmar*", better known by the abbreviation ROK, sought to increase the resilience of the agriculture sector in Cambodia and Myanmar to climate change by supporting the uptake of resilient agricultural practices, enhancing the agricultural value chain and promoting and scaling up the adoption of solar technologies for water pumping and powering market facilities of both countries. The 3-year regional project was funded by the Ministry of Agriculture, Food and Rural Affairs (MAFRA) of the Republic of Korea and had a total budget of USD 4,916,279. It was implemented from December 2020 to December 2023 by the United Nations Development Programme (UNDP) Bangkok Regional Hub (BRH), under its Regional programme, and executed in Cambodia and Myanmar with full support of UNDP Cambodia and UNDP Myanmar.

Objectives and scope of the evaluation

The objective of this consultancy has been to carry out the terminal evaluation (TE) of the ROK project. This evaluation analyses the relevance, coherence, effectiveness, efficiency and sustainability of the project, and considers cross-cutting issues. It also identifies lessons learned and provides specific recommendations for any future programming. In this sense, the TE has accountability, transparency and learning purposes. The conclusions of the document are based on the review of relevant documentation, interviews with key stakeholders and direct observation. The evaluator has triangulated the data collected to answer the evaluation questions, and project results have been evaluated against the expectations set out in the project logframe.

Ratings

On this basis, in terms of ratings, the evaluation concludes that the ROK project was relevant, moderately effective and efficient. Monitoring and evaluation were moderately satisfactory, despite the Project´s Results Framework (PRF) not being adequate to monitor and assess progress. Implementation and execution were satisfactory. Sustainability is moderately likely.

Criteria	Rating
Relevance	Satisfactory
Effectiveness	Moderately Satisfactory
Efficiency	Satisfactory
M&E	Moderately Satisfactory
Implementation/Oversight	Satisfactory
Execution	Satisfactory
Sustainability	Moderately likely

Conclusions

Relevance

The ROK project directly contributes to Sustainable Development Goals (SDGs) 1, 2, 7 and 13 and indirectly to SDG 6. The project is aligned with UNDP´s global, regional and national priorities. The project is in tune with Cambodia and Myanmar´s national strategies and priorities in areas such as rural and agricultural development, climate change and water supply and its objectives and activities have helped communities cope with the negative effects of COVID-19, the war on Ukraine and, in the case of Myanmar, the 2021 coup and the subsequent devaluation of the Myanmar Kyats (MMK).

The ROK project was formulated mainly by the UNDP regional team with information provided by UNDP´s Country Offices (COs). During implementation, COs involved a wide range of stakeholders. In Cambodia, UNDP signed a Letter of Agreement (LoA) with the National Committee for Sub-National Democratic Development (NCDDS) and, through Responsible Party Agreements (RPAs), engaged two experienced NGOs with strong presence in the target areas as implementing partners (Heifer International Cambodia and People in Need). In Myanmar, following the coup and the restriction to work with de facto authorities, the CO pivoted its partnerships towards CSOs and the private sector (NGO CESVI Foundation and Impact Hub Yangon). In both countries, the role of implementing partners has been paramount in coordinating with other actors and achieving results.

Coherence - Project design

The project document (ProDoc) did not include a Theory of Change (ToC) linking the problem to be addressed and the strategy to be followed to solve or reduce the problem, presenting the assumptions and the risks. Moreover, the presentation of the strategy has significant room for improvement. The ProDoc does not explicitly formulate the project's objective(s) and outcomes. Furthermore, no linkages are established between each country´s activities, which does not help viewing the project as an integrated whole, but rather as two separate projects. That said, overall, the activities contribute to the achievement of project outcomes. Outputs (as defined in the ProDoc) were mostly feasible and realistic within the project's budget and time frame at the time of project design, but were affected by unpredictable external shocks (COVID-19 and the military coup in Myanmar).

Project design and monitoring did not comprehensively take into account human rights and gender inequalities and differentiation. While it was subject to social screening, the project´s design was not informed by a gender analysis and action plan, and the PRF only addressed this partially.

The ProDoc does a good job in identifying past and ongoing projects within the two countries, and in establishing lessons learned and synergies with them. In some cases, and to a certain extent, ROK was a follow- up to some of them. In Cambodia, it also mentions similar projects and programmes implemented by other actors, as well as initiatives promoting solar technologies such as Solar Water Pumps (SWP), although in a rather broad way.

ROK project´s governance structure was not particularly conductive for coordination with a wide range of stakeholders. It had a regional project board integrated by UNDP ´s Bangkok Regional Hub Manager, members of Cambodia and Myanmar COs and representatives of the Government of Korea, but did not involve a broader stakeholder engagement structure. Either a project board

per country or a technical committee at the regional or national levels could have been desirable. At the country level, however, the project did coordinate and engage with other stakeholders, including national and subnational governments (when relevant), international and national NGOs with strong presence in the target areas and existing community groups and cooperatives, building on their knowledge, resources and networks for greater impact and sustainability. These coordination efforts helped the ROK project avoid duplications and create synergies with complementary projects, in line and beyond which was planned in the ProDoc.

Effectiveness

The structure of the PRF is not adequate to assess the effectiveness of the project. It does not provide aggregate indicators and is organized as if the project were two projects instead of one. The PRF does not either articulate the objective, outcome and output levels appropriately, and it has no indicators at the objective level. Furthermore, none of the indicators is SMART. Also, there is also room for improvement in reporting. That said, the achievement of targets was moderately satisfactory. In Cambodia, as of 30 September 2023, where it was possible to assess progress against targets for 8 of the 9 indicators included in the PRF, the project had exceeded 3 or 37.5% of final targets and not met 5 or 62.5%. In Myanmar, where it was only possible to assess 3 of 12 indicators defined in PRF, the project had exceeded all of them. The main unexpected results were the significant use of digital technology for knowledge sharing after COVID-19, the SWP Accelerator Lab implemented in Cambodia and the provision of energy for non-water pumping related purposes.

The project helped overcome the barriers for a productive and climate resilient agriculture sector that uses SWP in three fronts. First, by enhancing small-holder farmers' knowledge of efficient agricultural practices, increasing their access to inputs and markets and contributing to a transition from traditional subsistence farming to modern commercial agriculture and, overall, the development of a consolidated agricultural value chain. Second, by fostering a resilient agricultural sector, and enhancing the climate resilience of small-holder farmers and livestock holders. Third, by enhancing the adoption of SWP technology in the agriculture sector in both countries. However, it is still too early to identify clear signs on the project´s long term impact on these aspects, as in general, behavioural, institutional and market changes take more than three years. Existing evidence suggests that the project has directly contributed to improve the situation of several vulnerable groups, including Agricultural Cooperatives (ACs) or User Groups (UG), Farmers Water User Groups (FWUG), the communities where the project´s activities were implemented and women entrepreneurs and women-led MSMEs. The project has also contributed to the promotion of gender equality and the empowerment of women.

The two main external factors that negatively affected the delivery of project´s activities and the achievement of its outputs and outcomes were COVID-19 in both countries and the military coup and subsequent political and social unrest and economic crisis in Myanmar. However, they also had an unintended positive effect with regards to the promotion of SWPs and the adoption of the production of organic fertilizers and pesticides, as the costs of alternatives increased.

Efficiency

Overall, risks were adequately monitored, managed and mitigated as they occurred, thanks to relatively good information systems and the implementation of risk-mitigation strategies when needed. The ProDoc identified and briefly described risks that could negatively affect the delivery

of the expected results and each country developed its own Risk Log. To deal with emerging risks, project teams developed and followed a series of risk-coping and mitigation strategies that varied in type and scale, allowing them to cope with them and mitigate their impact effectively. The project teams also showed signs of good adaptive management, including a high degree of responsiveness and adaptability to contextual changes and the ability to make adjustments when they were most needed. They also made good efforts to document lessons learned and adaptive management processes on a continual basis, internalize them and share them with other relevant stakeholders, and to keep them informed and updated on the project´s development and emerging issues.

As of 31 October 2023, the project had spent 64% of the actual cash contribution. The rate of expenditure of planned funds had been greater in output 1 than in output 2 (75% against 68%), was way better in Cambodia than Myanmar (84% against 56%) and was particularly low in 2021(37%), improved in 2022 (77%) and then decreased in 2023 (63%). Cash cofinancing was raised from farmers and the private sector in Cambodia. The accounting and financial systems established for the management of the project were adequate.

The project was not particularly efficient. Project Management Costs (PMC) represented 22% of the total planned budget, which is a high percentage if compared to the percentage approved by international funds. The actual PMC represented 13% of all actual project expenditures, which, although still above the ceiling established by other funds, it is more reasonable. The percentage of PMC over the total budget in the country was high (14%) in Cambodia and more reasonable (8%) in Myanmar. PMC at the regional level represented 8% of total project expenditure.

The ProDoc did not include a robust M&E system, but rather a plan enlisting seven monitoring activities, their purpose, frequency, expected actions and costs. It did not establish responsibilities for delivering them and only assigned budget to two of them. Monitoring activities were conducted during project implementation and monitoring reports were delivered on time as well as impact assessment reports. Overall, monitoring reports provide good information, but have some room for improvement. Overall, management was appropriate. Roles and responsibilities were clearly defined at all levels and the implementation strategy was flexible enough to allow it to be efficient and cost-effective. Considering the circumstances and some administrative restrictions, the project funds and activities have been delivered in a timely and efficient manner.

Sustainability

The ProDoc does not provide a project-level sustainability strategy. The sustainability of project results is moderately likely in legal, socio-political, institutional and governance terms, especially in Cambodia and to a lesser degree in Myanmar, where ongoing political instability is a risk. Financial sustainability also seems likely, as development partners have showed interest in both countries. In environmental and climate terms, sustainability seems moderately likely in the short term, moderately unlikely in the medium term and unlikely in the long term, given the fragility of target ecosystems and climate change projections in both countries, particularly regarding water scarcity.

Recommendations

No.	Recommendation	Responsible part(s)	Timeline
1	**Provide further financial support for another phase of ROK**	ROK/MAFRA	Next 6 months (2024)
2	**Continue to try to mobilize complementary funds from other development partners for new ideas/proposals/projects**	UNDP BRH, Cambodia and Myanmar COs	Next 3 – 6 months (2024)
3	**When designing new projects, and more broadly in future programming and pipeline development:** **3.1.** *Draw linkages and seek synergies between projects within a portfolio* **3.2.** *Further integrate the country interventions at outcome and output levels, identifying common challenges and solutions, while acknowledging the specific country circumstances* **3.3.** *Develop a robust ToC for the regional project and ToCs for country interventions* **3.4.** *Prepare a sound PRF and an appropriate M&E plan.*	UNDP	Short, medium and long term
4	**When designing new ideas/proposals/projects:** **4.1.** *Propose continuing working with national and subnational partners, both governmental and non-governmental.* **4.2** *More intentionally address gender equality and human rights, to begin with by developing a gender analysis and action plan*	UNDP BRH	Next 6 months (2024)
5	**When developing a project similar to ROK Solar project, UNDP BRH and Cambodia and Myanmar COs should:** **5.1** *Better integrate in-country interventions, creating synergies between outputs, potentially focusing in a more limited number of areas.* **5.2** *Conduct medium and long-term surface and underground water availability assessments and pair the promotion of SWPs with water conservation and harvesting infrastructures and technologies and training on water use efficiency measures.* **5.3** *Plan the complementary uses of solar energy beyond water pumping.* **5.4** *Continue to promote online extension service mechanisms, and plan in person trainings in advance* **5.5** *Consider a contingency fund and remain flexible during implementation*	UNDP BRH and Cambodia and Myanmar COs	Next 6 months (2024)
6	**When designing the potential next phase of ROK in Cambodia, consider a large-scale investment project, with private sector partners and where there are returns. It should mostly focus on operationalising the identified business model, and on large-scale SWP, with blended finance, considering also mobile SWP.**	UNDP BRH and UNDP Cambodia	Next 6 months (2024)
7	**When designing the potential next phase of ROK in Myanmar, further test technologies, strengthen market linkages, and support bio-inputs and livestock disease prevention and cure.**	UNDP BRH and UNDP Myanmar	Next 6 months (2024)

1. INTRODUCTION

1.1. Evaluation objective, purpose and scope

The objective of this assignment is to carry out the terminal evaluation (TE) of the ROK project. In accordance with UNDP Monitoring and Evaluation policies and procedures, all UNDP-supported projects must undergo a terminal evaluation upon completion of all major project outputs and activities. As ROK is nearing its operational closure, it is necessary to conduct the final evaluation of the project.

In this context, as indicated in the Terms of Reference (ToR), and in line with UNDP policies, and the UNDP Evaluation Guidance for Development Projects, the objectives of this final evaluation are to assess the achievement of project results against the expectations set out in the project results framework, assessing the extent of project accomplishments, draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming. The evaluation assesses the implementation approaches, progress made, and challenges encountered, identifies and documents the lessons learned and good practices, and makes specific recommendations for any future programming. As the project was set up as a regional initiative with a strong focus on national level implementation, the added value of regionality is of particular interest as well. In this sense, the TE has accountability, transparency and learning purposes.

As detailed in the evaluation matrix, in Annex 5.1 the evaluation covers the relevance, coherence, effectiveness, efficiency and sustainability **evaluation criteria**, and considers **cross-cutting issues**, addressing how the intervention mainstreamed gender equality, disability and the human right-based approach. In terms of timeline, the TE covers from the beginning of the project (including project design stage) to the time when this terminal evaluation was initiated.

1.2. Evaluation Approach and methodology

1.2.1. General approach

This evaluation has been conducted following a structured process that integrates data collection and analysis, in order to assess the relevance, coherence, effectiveness, efficiency, sustainability of project results, and cross-cutting issues. It provides conclusions, recommendations and lessons learned. The project results have been evaluated against the expectations set out in the project logframe.

The evaluation process has taken into consideration the guidance and procedures set out in the UNDP Guidance for Evaluation of Development Projects. In addition, the evaluation has been conducted in accordance with the Code of Conduct for Evaluation Consultants established by the United Nations Evaluation Group (UNEG). In this regard, the evaluation has adopted a participatory and consultative approach that has ensured close collaboration with key stakeholders (evaluation managers, implementing and executing partners and male and female direct

beneficiaries) and has provided evidence-based information that is credible, reliable and useful. Gender-sensitive methodologies and tools have been used during the evaluation, ensuring a gender and human right lens. Both qualitative and quantitative evaluation methods and instruments have been used, as relevant.

The evaluation has been conducted by an international consultant (IC) (i.e. Jon Garcia) and two national consultants (NCs), one in Cambodia (i.e. Nimul Chun) and one in Myanmar (i.e May Nwe Soe). These consultants have worked together throughout the evaluation with the IC leading the team, and conducting remote interviews, and the NCs conducting in-person meetings, as explained in Table 6 in Annex 5.3. NCs have also conducted field visits for direct observation, under the guidance of the IC.

1.2.2. Data collection methods

Primary and secondary data have been collected. Secondary data has been collected from project management staff (UNDP BRH and UNDP offices in Cambodia and Myanmar) and partners, as well as through the review of project documents, policy documents and others. This has included the impact assessments conducted by other consultants in both countries. These assessments have provided useful information on the effectiveness, impact and sustainability of the project. Annex 5.2 provides a list of the types of documents/documents that have been reviewed as part of this evaluation. Primary data has been collected mainly through interviews (with donors, implementing and executing agencies, beneficiary communities, government authorities) and through direct observation during field visits.

Data collection has been carried out through three main methods:

- **Desk review:** in line with Annex B of the ToR, in depth review of all relevant documentation, including the contract and its extensions and amendments; the project document with all its annexes, and its Theory of Change and results framework; UNDP Social and Environmental Screening Procedure (SESP) and associated management plans; Annual Workplans (AWP); Progress reports (quarterly and annual), Monitoring reports (Back-to-office reports and Spot-checks); Minutes of Project Board Meetings; Financial data, including actual expenditures by project outcome, including management costs, and including documentation of any significant budget revisions; Combined Delivery Reports (CDR) and Certified Financial Reports (CFR); Electronic copies of project outputs (booklets, manuals, technical reports, articles, etc.); Sample of project communications materials (e.g. videos); Project deliverables that provide documentary evidence of achievement towards project outcomes; Any relevant socio-economic monitoring data, such as average incomes / employment levels of stakeholders in the target area, change in revenue related to project activities; UNDP Country Programme Documents (CPD) for Cambodia and Myanmar. In addition, the evaluator has reviewed the needs and impact assessments conducted in Cambodia and Myanmar by other consultants. A thorough review of documentation has been carried out not only during the inception phase of the evaluation (to inform the evaluation matrix), but also during the implementation phase of the evaluation, as additional documentation were gathered.

- **Interviews**: they have been mostly semi-structured (based on the interview protocols presented in Annex 5.5, which are based on the evaluation matrix) and, to the extent possible, they were conducted with a wide range of key stakeholders (men and women), including the donor, BRH, the UNDP Cambodia and Myanmar Country Offices (COs), government counterparts, representatives of key civil society organizations, other implementing partners and beneficiaries. As far as possible, and when relevant, priority was given to talking to women, in order to promote gender equity. Table 6 in Annex 5.3 lists the people interviewed, and how the interviews were arranged. The IC conducted remote interviews with the donor, BRH, UNDP COs, NCDDS and the four partner NGOs. In-person interviews and focus group discussions were conducted with other stakeholders in Cambodia and Myanmar, in particular provincial partners and beneficiaries. These were conducted by the NCs under the guidance of the IC/Team Leader, and using the interview protocols presented in Annex 5.5. A meeting between the international consultant (IC) and the national consultants (NCs) was organized prior to field visits to verify the data collection tools and agree on expectations and interpretation of questions in the interview protocols. All interviews with men and women were undertaken in full confidence and anonymity. The final evaluation report has not assigned specific comments to individuals.

- **Field visits:** National consultants conducted site visit in Cambodia and Myanmar. The in-country mission in Cambodia was conducted between October 30 and November 3, 2023. The in-country mission in Myanmar took place between October 31 and November 3, 2023. During these visits, in addition to conducting interviews and focus groups with local stakeholders, NCs conducted on-site verification through direct observation, as a complementary data collection method. NCs completed the direct observation fiches presented in Annex 5.6. For selecting the sample, the following criteria was used: i) diversity of geographic areas; ii) diversity of types of intervention (e.g. agricultural technologies, market development and SWP); and iii) ease of access.

1.2.3. Data analysis

The evaluator has compiled and analysed all data collected on the results achieved in relation to the project's stated objectives, strengths and successes and, where they exist, shortcomings, failures and areas of opportunity. Quantitative data has been analysed with appropriate instruments (e.g. percentages, average scores and perception indices). Considering that information was collected through various methods and from different sources, triangulation of data has been an essential tool to verify and confirm the information collected. Conclusions have been drawn from the relevant information through interpretative analysis. The interpretation process has applied both deductive and inductive logic. This systematic approach has ensured that all findings, conclusions and recommendations are supported by evidence.

1.3. Analytical Framework

The following elements have been used as the analytical framework for this evaluation:

- **Evaluation Matrix:** based on an initial review of available project documentation and following the guidance of the ToR for the evaluation and the UNDP guidelines for

conducting evaluations of development projects, the evaluation matrix presented in Annex 5.1 was developed. This matrix has been a key tool for data collection and analysis. It includes the **evaluation questions** to be considered under each criterion and details the most relevant qualitative and quantitative indicators that have informed the evaluation questions, sources of information and data collection methods. The matrix mainstreams gender equity and other cross-cutting issues.

- **Scorecard:** This framework provided in Annex F of the ToR has been used to provide specific ratings on performance criteria, including relevance, effectiveness, outcomes, efficiency, M&E, implementation/oversight, execution and sustainability.
- **Triangulation of information** has helped ensure the validity and accuracy of findings.
- **Participatory and gender-sensitive approach** to ensure that the perspectives of the most vulnerable populations have been considered in the evaluation.

1.4. Process

1.4.1. Inception phase

In order to prepare this inception report, a preliminary review of the project documentation shared by the project team was initiated. In addition, on 27 September 2023, a kick-off call was held with the Evaluation Manager and the UNDP evaluation reference group, comprising of representatives from BRH Nature, Climate and Energy (NCE) team, BRH Regional Programme Management Unit and UNDP Cambodia and Myanmar COs. This allowed the evaluation team to clarify the context, stakeholders and content of the project. The review of the documentation continued throughout the evaluation process. The analytical framework and evaluation matrix, as well as the workplan and the methodology, were developed on the basis of these interactions and the preliminary review of documentation (including the terms of reference and UNDP guidelines for conducting evaluations of development projects, among others), aiming for a rigorous and practical matrix that avoids duplication.

1.4.2. Data collection and analysis

Once the inception report was approved, the evaluation team proceeded with data collection as described in section 2.1.1 above.

The evaluation team conducted interviews with various stakeholders, with the support of the project team to arrange the field meetings. These interviews also provided the opportunity to gather additional information deemed necessary to complete the evaluation. The field missions also took place.

Once all relevant information was gathered, and after an initial triangulation, the evaluation team presented preliminary findings to the Evaluation Manager and UNDP evaluation reference group. Considering any comments from the manager and the reference group, the evaluation team triangulated the data and conducted a thorough analysis to establish objective conclusions and draw sound conclusions and recommendations that can ensure the sustainability of the project's

achievements and impacts and suggest actions to be implemented to address the gaps, where appropriate.

1.4.3. Writing

Following this analysis, the team leader prepared this draft terminal evaluation report, covering the project approach, management and performance. The report follows the structure set out in Annex C of the ToR[1], as well as the guidance and requirements set out in the UNDP evaluation guidelines for development projects, adjusting them where appropriate, in line with the evaluation matrix, to avoid repetition. In this regard, the draft report describes the approach taken and its rationale, explaining assumptions, challenges, strengths and weaknesses. The report also includes a rating system, following the guidelines in Annex F of the ToR, as well as conclusions and recommendations that are evidence-based, succinct, specific, measurable and relevant. The recommendations include measures to follow up or reinforce the initial benefits of the project and proposals for the development of new projects.

The draft terminal evaluation report has been sent to UNDP, which will disseminate it to all relevant stakeholders as appropriate. All comments and feedback received, which will be provided in a consolidated manner by UNDP, will be taken into account by the team leader in finalising the terminal evaluation report. An audit trail, following Annex H in the ToR, will also be developed to closely track each comment and the corresponding response.

1.5. Structure of the evaluation report

This evaluation report is structured as follows. Section 1 presents the evaluation, including its objective, purpose, scope, approach, methodology, analytical framework and process. Section 2 describes the project. Section 3 presents the findings on relevance, coherence, effectiveness, efficiency and sustainability. Section 4 presents the conclusions, lessons and recommendations. Section 5 includes the annexes.

2. PROJECT DESCRIPTION

Agriculture is a key sector in Cambodia and Myanmar. The majority of the population in both countries derive their livelihoods from, predominantly, rain-fed agriculture. Climate risk are projected to be high for this sector in both countries. Current trends indicate that the agricultural sector in these countries will not be able to undertake the deep transformation required to make it climate resilient on its own. In addition, available information suggest they will not be able to orientate their agricultural value chains towards low-carbon pathways on

[1] Basically, this will include an Executive summary (only in the final version of the TE report); Introduction; Methodological approach; Evaluation findings; Conclusions; Lessons learnt; Recommendations for future programme interventions; Relevant annexes.

their own. Reliable and low-carbon access to water is a key element in building the agricultural sectors of these countries climate resilient and reducing their greenhouse gas (GHG) emissions, as well as in increasing their productivity and reducing poverty.

However, progress on this is negatively affected by several factors. Farm productivity and market access are beset by limited access to resiliente and innovative agricultural practices and technologies, including resilient seeds, farm tools and innovative technologies; limited access to agricultural market information; limited technical know-how to improve quality and safety agricultural products for markets; limited access to technology-enabled marketing facilities to link farmer products to markets and consumers; and limited consumer trust of the farmers to supply safe agricultural products and mechanism of labelling and certification of agriculture products. In turn, among other factors, smallholder farm climate resilience is constrained by the low adoption and utilization of solar water pumping (SWP) solutions. This is due to limited awareness of these solutions, limited capacity of market actors to design, supply, install and maintain SWP solutions tailored to local conditions, access low-cost water storage/distribution technology and related information, and knowledge of business models, and limited trust between solar companies and groundwater drilling companies.

To address this problem, the Republic of Korea, Ministry of Agriculture, Food and Rural Affairs (MAFRA) funded the project "*Promoting the use of solar technologies for agricultural and rural development in Cambodia and Myanmar*", also known by the abbreviation ROK. The objective of the project was to increase the resilience of the agriculture sector in Cambodia and Myanmar to climate change through a three-pronged intervention:

- (i) supporting the uptake of resilient agricultural practices,
- (ii) enhancing the agricultural value chain and
- (iii) promoting and scaling up the adoption of solar technologies for water pumping and powering market facilities.

To meet the above objective, the project implemented a set of measures that span across two key outputs, in line with the project results framework presented in Annex 5.7:

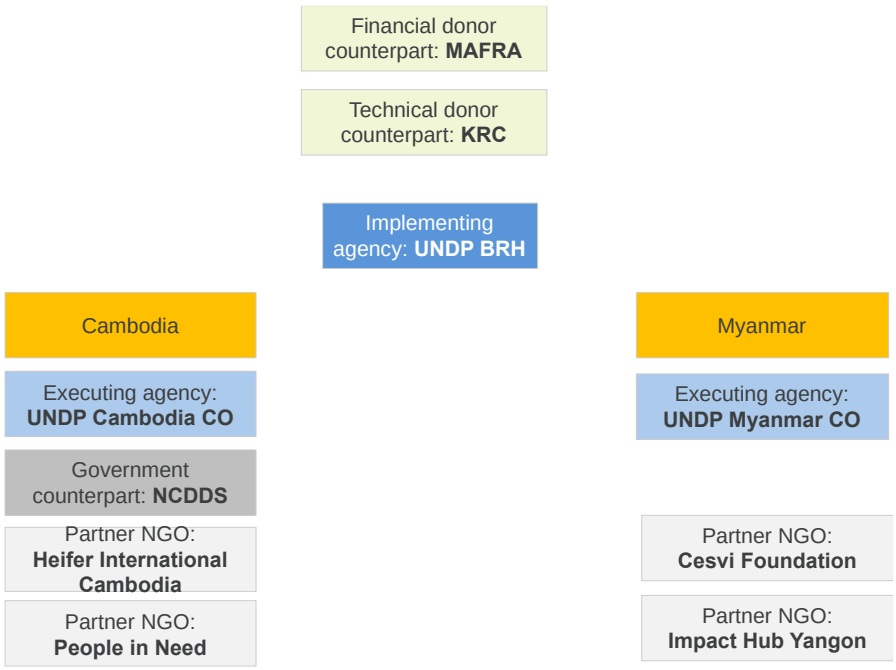
1. Increased smallholder farm productivity through adoption of innovative agricultural technology and an improved value chain.
2. Enhanced awareness, capacities, adoption, and utilization of solar water pumping (SWP) solutions

The original project implementation period was 4 December 2020 - 31 October 2023. However, a two-month extension (to 31 December 2023) was granted by the donor in the beginning of 2023, given the disruption in implementation due to COVID 19 pandemic.

This 3-year regional project had a total Budget of almost USD 5 m (4,916,279[2]). As of 31 October 2023, the project had spent $3,136,344 USD, or 63% of the total Project budget.

The project was implemented by the United Nations Development Programme (UNDP) Bangkok Regional Hub (BRH), under its Regional programme, and executed in Cambodia and Myanmar with full support of UNDP Cambodia and UNDP Myanmar. BRH was responsible for consolidating results/impacts and reporting to the donor on a regular basis, as well as for knowledge management and experience sharing across participating countries and dissemination of lessons to other countries in the region. Based on these lessons and best practices, BRH is expected to support countries to mobilize additional resources through similar arrangements in the future. In Cambodia, the project worked with the National Committee for Sub-National Democratic Development (NCDDS) and Provincial Departments, as well as two Non-Governmental Organizations (NGOs), Heifer International Cambodia and People in Need, while in Myanmar the project worked with Non-Governmental Organizations (NGOs) and Civil Society Organizations (CSOs), such as CESVI Foundation and Impact Hub Yangon[3], with no direct engagement of the Government given the political situation. Figure 1 present the key stakeholders of the project.

Figure 1. Stakeholders map



[2] Although the Prodoc budget was approved at $4,994,867, due to exchange rate loss, the project has received a total of $4,916,279.

[3] CESVI Foundation has been involved on Agriculture advisory, demonstration plots, agri-based MSME, while Impact Hub Yangon has been involved Value Addition, its work starting later this year.

3. FINDINGS

3.1. Relevance

3.1.1. To what extent was the project aligned with and contributed to the Sustainable Development Goals (SDGs)?

The project is aligned and directly contributes to four SDGs, including SDG **1** on *Poverty* (Target 1.5[4]), SDG **2** on *Zero Hunger* (Targets 2.3 and 2.4[5]) and SDG **7** on *Affordable and clean energy (*Target 7.1[6]) and SDG 13 on Climate Action (Target 13.1 and 13.3[7]). Furthermore, it indirectly contributes to SDG 6 on *Clean water and Sanitation (*Target 6.1*[8])***.**

3.1.2. To what extent are the project objectives aligned with UNDP's strategic priorities at the global, regional and national levels?

The project objectives are clearly consistent with UNDP's priorities at both global and regional levels. At the **global** level, it aligns with UNDP's Strategic Plans (SP) 2018-2021 and 2022-2025. In particular, on SP 2018-2022, the project contributes to Outcome 1 on poverty eradication, and Outcome 2 on sustainable development. In addition, the project follows UNDP's three directions of change[9] and overall vision to "*help countries achieve sustainable development by eradicating poverty in all its forms and dimensions, accelerating structural transformations for sustainable development and building resilience to crises and shocks*". The project also supports UNDP's Strategic Plan 2022-2025[10], which builds on the 2018-2021 overall objective and lessons learned and focuses on accelerating and scaling up development results through the organizations' six

[4] Target 1.5 "*By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters".*

[5] Target 2.3 "*By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment".* Target 2.4 *"By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality".*

[6] *"By 2030, ensure universal access to affordable, reliable and modern energy services".*

[7] Target 13.1 *"Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries"*, and Target 13.3 *"Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning"*.

[8] *"By 2030, achieve universal and equitable access to safe and affordable drinking water for all".*

[9] UNDP Strategic Plan defines three directions towards which it supports countries to focus change: transformation, leaving no one behind and resilience.

[10] https://www.undp.org/sites/g/files/zskgke326/files/2022-07/UNDP%20Strategic%20Plan%202022-2025.pdf.

signature solutions on poverty and inequality, governance, resilience, environment, energy, and gender equality[11].

At the **regional** level, by promoting the adoption of climate- resilient agricultural practices and the installation of SWP as a way to reduce carbon emissions, the project´s activities were also consistent with UNDP Regional Programme Document (RPD) for Asia and the Pacific 2022–2025[12]. In particular, the project contributed to **RPD´s Outcome 1** on accelerating structural transformation, particularly green, inclusive, and digital transitions,[13] and more specifically to (Output 1.4[14]).

At the **country level**, the project supported two of UNDP's strategic priorities in Cambodia, as defined in UNDP Country Programme Document (CPD) 2019-2023: Expanding economic opportunities *(Prosperity)* and Sustainable living *(Planet)* [15].

In Myanmar, it contributed to UNDP CPD 2018-2022, particularly its "*Planet and prosperity*" national priority and Outcome 1: *Advance poverty eradication in all its forms and dimensions,* by providing technical and infrastructure support to the agriculture sector for poverty reduction[16]. Following the military coup of February 2021, the CO developed interim engagement principles aligned to the broader framework of the UN Country Team's (UNCT) engagement principles. After undertaking a programme review in line with the engagement principles and screening of initial risks in the immediate aftermath of the coup, UNDP Myanmar developed an engagement strategy and a transition programme called "Community First" that emphasized community-based implementation and worked to strengthen the communities' resilience. The project clearly contributes to this.

3.1.3. To what extent is the project consistent with national strategies and priorities?

3.1.3.1. To what extent was the project aligned with and contributed to[17] the countries' strategies and priorities?

The project was closely aligned with and contributed to Cambodia's and Myanmar's development strategies and priorities. In **Cambodia**, the project supports the implementation of the Royal Government of Cambodia (RGC)'*s Rectangular Strategy for Growth, Employment, Equity and Efficiency Phase-IV (RS4)*[18] and contributes to priority #8 of the National Assembly´s Sixth

[11] Ibid.
[12] https://digitallibrary.un.org/record/3952329.
[13] "*Inclusive and sustainable structural transformations accelerated to reduce poverty, inequality, and vulnerabilities towards the achievement of SDGs and inclusive, sustainable, resilient and digital transitions".*
[14] "*Sustainable, scalable and innovative solutions and strategies for nature, climate and energy transformation strengthened through enhanced 'climate promise', nature-based solutions, and transitioning to clean energy and zero-carbon development".*
[15] https://digitallibrary.un.org/record/1656942
[16] https://digitallibrary.un.org/record/1327739
[17] Ibid.
[18] The project is aligned with RS4 strategic goal to minimize environmental impacts, enhance the country´s capacity to adapt to and mitigate CC and advance on a path towards sustainable development. Rectangular-Strategy-

Legislature[19]. It also adds to the National Strategic Plan for Rural Water Supply of the Ministry of Agriculture Water and Resources, Sanitation and Hygiene. By promoting access to SWP, the project also contributes to the RGC's intention to become Zero net carbon emitter by 2050 and its 2020 Updated Nationally Determined Contribution (NDC)[20].

In **Myanmar**, the project is well aligned with the *Sustainable Development Plan 2018-2030* and its emphasis on strengthening agricultural productivity and promoting value chains, the *2018 Agricultural Development Strategy* and its call for reorienting irrigation systems for higher productivity and impact, and its Strategic Directions for the Agricultural Sector 2018-2023, which states that agricultural development should be environmentally sustainable.

The project has also contributed to **the Government of Korea´s** *New Southern Policy Strategy* (2018), which articulates South Korea's commitment to expanding its ties with countries in the Asia – Pacific region.

3.1.3.2. What was the level of national stakeholder involvement in the design and implementation of the project?[21]

The project was formulated mainly by the UNDP regional team with information provided by COs. It was informed by the lessons learned and recommendations from the Terminal Evaluation of a previous GEF project on rural livelihoods. According to the interviews, the ROK project was a sort of an exit strategy of that project, supporting and expanding the results that were achieved. The climate change analyst on the CCA and the energy technical advisor on the design of the SWP provided inputs. It was a rigorous process. According to the interviews, it was a participatory, inclusive process with inputs from national and subnational levels, and the BRH.

During the implementation phase of the project, COs also involved different stakeholders throughout the life of the project, in order to adapt to the changing situations and realities of the two countries following COVID-19 and, in Myanmar, also the military coup of February 2021. In Cambodia, during the first part of the project, the CO project team continued existing partnerships with the Ministry of Agriculture, Forestry and Fisheries (MAFF) and Cambodia´s Ministries of Environment, and Mines and Energy. In 2021, it signed a Letter of Agreement (LoA) with NCDDS to ensure cross-sectoral integration, responsiveness to local needs, maintain sustainability and aid with sub-national activities, given its comprehensive experience working at communal-level projects[22]. CO also engaged with multiple non-governmental partners during project implementation. In 2022, CO started a collaboration with Heifer International and People in Need (PIN) as implementing partners, by signing Responsible Party Agreements (RPAs) with them. In

Phase-IV-of-the-Royal-Government-of-Cambodia-of-the-Sixth-Legislature-of-the-National-Assembly-2018-2023.pdf (cnv.org.kh)

[19]"*Continuing to encourage and increase investment in clean energy and renewable energy, especially solar power while reducing the production of energy from unclean sources to ensure long-term energy security*"

[20]Cambodia's Updated Nationally Determined Contribution (NDC)_EN | The National Council for Sustainable Development (moe.gov.kh)

[21] This includes "To what extent were perspectives of men and women who could affect the outcomes, and those who could contribute information or other resources to the attainment of stated results, taken into account during project design processes?"

[22] NCDDS is an inter-ministerial coordination mechanism to promote the D&D reform agenda and is responsible for strengthening institutions at sub-national levels – provinces, districts/municipalities, and communes/sankgats.

Myanmar, prior to 1 February 2021, UNDP CO had very strong collaboration and partnership with the Government of Myanmar, in particular with MoALI and its line departments in the Dry Zone region. However, following the military coup in February 2021 and in line with the CO Engagement Principles[23], the project revisited its engagement and pivoted its partnerships towards NGO CESVI Foundation (CESVI), Impact Hub Yangon, and private sector entities.

3.1.4. To what extent Is the project consistent with the needs in the project intervention areas?

3.1.4.1. To what extent does the project respond to subnational needs in the project intervention area?

Cambodia and Myanmar are two highly vulnerable countries to both climate variability and climate change. The project has also helped communities cope with the negative effects of COVID-19, the war on Ukraine and, in the case of Myanmar, the 2021 coup and the subsequent devaluation of the Myanmar Kyats (MMK).

In Cambodia, a mainly agrarian country with a high degree of vulnerability to both climate variability and change, farming communities largely depend on rain-fed agriculture for their livelihoods, a situation that has posed significant constraints to agricultural productivity and one which is expected to significantly increase due to projected climate changes, due to limited irrigation infrastructure. Also, the lack of access to reliable extension services and the absence of climate information services prevents farmers from not only developing into professional agricultural cooperatives, but also from effectively coping with climate change. According to the interviews, the project has helped the economy recover from the effects of the pandemic[24], as it helped bring back the agriculture sector.

In Myanmar, the project was implemented in rural communities of the Dry Zone, the country´s most food insecure region, despite being rich in raw materials. The region is characterized by poor and severely eroded soils, thin vegetation cover, scarce water resources and extreme water shortages due to drought and irregular spell, which means that there is almost no water in the summer period. All these situations constitute a real threat to the livelihoods of the rural poor and leads them to a continuous cycle of poverty.

The region has a low uptake of agricultural inputs and technologies, underdeveloped transportation networks and a lack of clean agricultural markets. It also has a low utilization level of irrigation, and, when available, it is provided by mainly by diesel-powered pumps which contribute to GHG emissions and are expensive to operate. Lack of reliable access to water serves as a constraint on livelihoods and the development of a vibrant agriculture sector. Poor and landless farmers are

[23] The Principles guided UN Agencies (including UNDP) engagement with the de facto military authorities and aims to prevent working in a way that legitimizes them. It nonetheless enables UNDP to continue directly assisting the most vulnerable people in the country without discrimination.
[24] In Cambodia, the project started in 2021, in the midst of COVID-19.

particularly vulnerable to climate shocks, such as droughts and floods, and other extreme weather conditions.

The beginning of the war in Ukraine, and the 2021 military coup, with the subsequent devaluation of the Myanmar Kyat, had a deep impact in the Dry Zone, particularly in the agriculture value chain sector and in Micro, Small and Medium-sized enterprises (SMEs). They particularly affected seed collection and land preparation, and made it difficult for farmers to get agricultural inputs, as imported commodities became highly- priced and the price of quality seeds doubled (that of fertilizers tripled). Also, there was a considerable rise in fuel prices. At the same time public extension services, which did not work efficiently before the coup, almost ceased to exist.

The combined impact of these elements has been quite devastating for rural people and poverty levels have almost doubled since that time (almost half of the population is below the poverty line). As a result, people adopted negative coping strategies, such as selling assets (livestock, bikes, gold), depleting their savings, eating less and worse. According to the interviews, the project was already relevant when it was designed, but has been even more relevant after COVID-19, and the military coup.

3.1.4.2. Have all relevant regional and municipal stakeholders been included during project design and implementation?

As noted, the design was mostly driven by UNDP with some consultation with subnational stakeholders. However, it does not seem beneficiaries, and in particular women and persons with disabilities, were consulted during the design process. In contrast, during implementation, the project involved international and national NGOs with strong presence in the target areas, as well as existing community groups and cooperatives and MSMEs, building on their knowledge, networks and resources for greater impact and sustainability. In Cambodia, beneficiaries participated in the consultation and direct implementation. In Myanmar, implementation directly involved beneficiaries following the coup.

3.2. Coherence

3.2.1. Quality of project design

3.2.1.1. How clear and well-integrated were the project's objectives, outcomes, outputs and activities?[25]

The project document (ProDoc) does not include a Theory of Change linking the problem to be addressed and the strategy to be followed to solve or reduce the problem, presenting the assumptions and the risks. Indeed, while the ProDoc describes the development challenge and the strategy and results, it does not comprise a problem-tree, presenting the underlying causes,

[25] Are the project objectives and outputs clear? What, if any, alternative strategies would have been more effective in achieving the project objectives?

nor a solution- tree and does not strategically link them, showing how the project helps overcome the barriers for a more resilient and productive agriculture in the two countries.

Actually, the presentation of the strategy has significant room for improvement. The ProDoc does not explicitly formulate the project's objective(s) and outcomes. Explicitly it only defines outputs (two) and activities (six). In reality, the project document establishes outcomes and activities, as the two outputs are actually outcomes and not outputs. However, the ProDoc fails to provide an objective linking both outcomes, which are not fully integrated. Outputs are not defined. Moreover, while the nature of the activities is mostly the same in both countries, they are presented in an inconsistent manner, in terms of number, sequence and wording, which does not help viewing the project as an integrated whole[26]. Also, some activities are duplicated (i.e. work on marketability is included both in activity C1.1 and C1.2).

That said, overall, the activities contribute to the achievement of project outcomes (which, as already mentioned, are defined as Outputs in the ProDoc). In general, the adoption of innovative resilient agricultural technologies and techniques (activity C1.2/M1.1), through demo farmers and extension services, and the improvement of the producer-buyer linkages / the value chain for greater aggregation (activity C1.1/M1.2)) contribute to increased smallholder farm productivity. Similarly, the improvement of business models and design of SWP solutions (activity C2.1/M2.1), the enhancement of the capacities of current and new operators of SWP systems (activity C2.3), the dissemination of tailored information on SWP among stakeholders (activity C2.2/M2.3) and the installation of SWP solutions (C2.4/M2.2) contribute to the increased adoption and utilization of solar water pumping in the agriculture sector.

3.2.1.2. How feasible and realistic were the project objectives, outcomes and outputs within the available budget and time frame?

Outputs (as defined in the ProDoc) were mostly feasible and realistic within the project's budget and time frame at the time of project design, but were affected by unpredictable external shocks (i.e. COVID-19 and the Myanmar coup) and procurement processes during implementation. Outcomes, such as behavioural, institutional and market changes, require more than 3 years, especially if they involve testing technologies and business models.

3.2.1.3. To what extent did the project design and monitoring take into account human rights, as well as gender inequalities and differentiation?

Project design and monitoring did not comprehensively take into account human rights and gender inequalities and differentiation. Although it was subject to social screening, the design was not informed by a gender analysis and action plan, and the PRF only addressed this partially (it included one gender related indicator and two gender-disaggregated indicators).

[26] Although country activities need to be tailored to beneficiary needs, existing practices and development situation and other specific local factors, linkages need to be established between country activities if they are to be part of the same project. Otherwise, it would be two projects, and not one project.

3.2.2. Linkage and complementarity of the project with other interventions in the sector

3.2.2.1. Were other interventions within the sector clearly identified in the project document?

The ProDoc identified past and ongoing projects and established lessons from or synergies with them. In some cases, and to a certain extent, ROK was a follow- up to them. In particular, the ProDoc identified four projects, two in Cambodia (one ongoing and one completed before the ROK project began), and two in Myanmar (one completed and one ongoing when the ROK project began).

In Cambodia, the ProDoc mentioned the UNDP-financed project "*Promoting Climate-Resilient Water Management and Agricultural Practices in Rural Cambodia*", which was implemented from 2009 to 2015. The project installed 48 communal SWP systems in two highly-vulnerable provinces to address disruptions in their access to clean water. In addition, the ProDoc refers to the "*Clean Energy Revolving Fund*" (CERF) climate change mitigation project, which has been implemented by NEXUS for development, a Cambodian-based developmental organization, since 2016. The project provides funding in the form of loans and risk-guarantees to SMEs and larger-scale agricultural farms and had SWP as one of its main components[27].

In Myanmar, two projects were identified in the ProDoc which were either implemented or funded by UNDP in the Dry Zone, upon which ROK activities were also built. First is the Adaptation Fund (AF)-funded "*Addressing Climate Change Risks on Water Resources & Food Security in the Dry Zone of Myanmar*" project (UNDP-AF), implemented from 2014-2019 in five of the townships of the Dry Zone were the ROK project was implemented. It provided water supply during the dry season (through water catchment channels, diesel-operated tube wells, water tanks and pipes, village ponds, deep/shallow tube wells and soil and water conservation techniques) and promoted climate –resilient agricultural and livestock practices. According to ProDoc, two relevant lessons learned from the mid-term assessment of this project (and upon which ROK was designed) were the need to narrow down the focus of interventions to ensure sufficient resources are available along with adequate oversight and monitoring of activities and capacity development of implementing partners; and the need to create market linkages to sustain and upscale the uptake of increased agricultural and livestock production and inputs.

Also, the ProDoc refers to the project "*Sustainable Enterprises and Agriculture Development: Leveraging communication technology to synergise rural development in the Dry Zone of Myanmar*" (SEAD), jointly funded by UNDP and telecom-provider Ooredoo Myanmar, and implemented in partnership with MoALI between April 2020 and December 2021 in the same villages of Nyaung U and Myingyan Townships. The project provided Mobile ICT-enabled extension services to farmers in terms of facilities and training as well as links to agro-business and financial services. Entrepreneurs, especially women, were supported in establishing SMSEs

[27] https://nexusfordevelopment.org/impact-investing/cerf/. According to the ProDoc, one major lesson that was considered when designing ROK was the need to engage SWP installers and drilling companies, which was highlighted as a major barrier to upscale their project to more beneficiaries.

through training and links to credit and markets. The project trained farmers to use digital platforms such as Viber, Zoom Cloud meeting, YouTube, Facebook and etc. Moreover, the project created the SEAD Agro-advisory Viber platform, and technical dissemination was done through that platform as the project period coincided with the COVID -19 pandemic.

The ProDoc identifies lessons learned from these projects and indicates how they inform the design of ROK. Although the UNDP-AF project was considered as cost- effective and highly successful, some negative issues were detected that affected its impact, such as seasonal variabilities of groundwater that required a deeper pump, cases where pumps were damaged and lacked available technicians to repair in due time, and arsenic-contamination in the water appearing few months after installation. Based on those lessons, ROK project opted to conduct hydrological analysis before installing SWPs.

In addition, the ProDoc established synergies with past and ongoing projects. Indeed, despite being implemented in the same areas as some of these projects, the ProDoc sought to establish complementarities with them and was designed to fill the gaps left by them. For example, agriculture activities of the UNDP-AF project, like seed bank and livestock revolving system, were still running when ROK began. However, from design, the ROK project planned to upgrade the seed quality of the AF-funded´ seed bank by establishing varietal trial demonstration plots. Also, participants of MSME who received training from the SEAD project were also trained by the ROK as well, and outstanding participants were provided start-up grants by the ROK.

The ProDoc also mentioned some other projects and programmes implemented by other actors in Cambodia, including the International Fund for Agricultural Development (IFAD) *Agriculture Services for Innovation, Resilience and Extension* programme (ASPIRE), which at the time ProDoc was written provided financial support to MAFF to implement a number of agriculture development projects. It also identified other initiatives promoting solar technologies (such as SWP) in the country, but in a rather broad way.

3.2.2.2. Has the intervention been coordinated with other donors to seek complementarities and synergies?

The project governance structure[28] was not particularly conductive for coordination with a wide range of stakeholders. This included a project board, which was integrated by the BRH' manager, members of Cambodia and Myanmar COs and representatives of the Government of Korea, but did not involve a broader stakeholder engagement structure, either a project board per country or a technical committee either at the regional or national levels. At the country level, however, the project conducted coordination, which took time and required prior consultation through the UNDP COs (as this project was under Direct Implementation Modality (DIM)) and the engagement of national and subnational governments (when relevant), as well as international and national NGOs with strong presence in the target areas. The project also coordinated with existing community groups and cooperatives, building on their knowledge, resources and networks for greater impact and sustainability.

[28] This is discussed in more detail in 3.4.6 .

In Cambodia, the project coordinated with NCDDS, which in turn coordinated with subnational stakeholders, including the provincial departments of environment, rural development, water resources and agriculture at the provincial level. They also helped identified needs and beneficiaries related to the project. The project also coordinated with and involved agriculture cooperatives and communities. Furthermore, the project conducted annual reflection workshops, where most stakeholders were invited to discuss challenges, learnings and develop proposals to scale up project achievements and align with the transition of the government of Cambodia. Private sector and partners in the solar technology value chain were also involved. In addition, the CO held consultative meetings with ASPIRE to learn from their experience and avoid making the same mistakes. The project also coordinated with AFD Cambodia[29], who also implemented a project in Kampong Thom province, where an agricultural community market was built. During the selection of beneficiaries, ROK coordinated with the village advisory committees that were created by previous UNDP projects.

In Myanmar, there was a strong relationship between UNDP and MOALI before the coup, as UNDP had implemented the AF and SEAD projects. However, from February 2021 onwards, the focus shifted towards other actors. The project mostly linked with small-holder farmers, agricultural cooperatives, agri-businesses and agricultural input suppliers, by inviting them to showcase their products to farmers. It also coordinated with private sector companies in the field of ICT and mobile technologies, which were in charge of designing and deploying mobile applications, networks and services used by the project. UNDP also had a strong presence at the community level.

In both countries, the role of implementing partners has been paramount in coordinating with other actors. In Cambodia, for example, People in Need (PIN) helped connect with local companies and work with beneficiaries in co-financing and Heiffer International helped reach a wider audience, and to create larger networks. In Myanmar, CESVI´s long- and strong –experience in the Dry Zone and Impact Hub experience in entrepreneurship have helped coordinate with other stakeholders.

3.2.2.3. To what extent does the project support (and not duplicate) activities and objectives not addressed by other projects or programmes?

These coordination efforts helped the ROK project avoid duplications and create synergies with complementary projects, in line and beyond which was planned in the ProDoc.

In Cambodia, ROK complemented the work of implementing partners, although in a rather general way. By promoting solar energy, ROK supported NCDDS' work on improving local government and strengthening communities and created synergies with other projects linked to water infrastructure, promotion of water-drop irrigation and capacity-development. It also supported NCDDS' department of agriculture by providing training on agricultural technologies. ROK also supported PIN´s work on solar energy market-system development by accelerating the process for communities to adopt solar technologies, which could be quite expensive. In that sense, there was complementarity rather than duplication. ROK also supported the efforts of a larger European Union- funded project in the country called Switch[30], which works with solar technology providers in the agro-fishery sector. As they are looking to scale-up Switch, they are considering the potential

[29] This is not the French Development Agency, but a local NGO in Cambodia: https://www.afd-cambodia.org/.
[30] https://switchtosolarkh.org/

of medium-scale SWP to scale-up their work in Cambodia, particularly in the rice value chain, and have approached UNDP´s CO for feedback.

In Myanmar**,** ROK supported the work that the Government of Myanmar (at least until the military coup) had done since 1988 to expand irrigation in the Dry Zone with the development of a large number of surface water irrigation projects on the Ayeryarwady, Chindwin and Mu rivers. Also, by promoting beneficiaries´ livelihoods and the use of clean and renewable energy for water extraction and irrigation, ROK contributed to the work UNDP had been doing in rural areas to create/strengthen community-level structures, so they can manage their own issues and build self-resilience.

Furthermore, in Myanmar, in 2022 UNDP started implementing the project "*Enabling Community Recovery and Resilience*" (ENCORE) in the same project areas as ROK, which is expected to run until 2024. During Phase 1: *Addressing critical needs as point of entry*, the project provided home-gardening kits and fertilizer in 2022. At Phase 2*: Initiating Community-led Recovery and Resilience Building*, the project supported Cash-for-Work activities in village roads improvement and village ponds renovation and providing livestock with Start-up Livelihood Assistance for Women (SLAW) system. Phase 3: *Sustaining the process of Community- led Recovery and Resilience Building* will start at the beginning of 2024. Activities will be based on the community needs and may include agriculture-based local economic and livelihood development support (group-based) and small rural infrastructure. Project activities such as livestock SLAW system, providing home gardening kits and fertilizers were synergized with ROK´s activities. In addition, the Phase 3 project activities may support the sustainability of some of the activities implemented by ROK.

In addition, the ROK project team carried out several measures to avoid duplications with ongoing projects and programmes. This was especially the case in Myanmar, where, for example, the project team engaged with village advisory committees created on previous project during the selection of beneficiaries. As a result, ROK covered more remote villages to avoid overlap in beneficiaries while the beneficiaries of previous projects lived closer to the city. Likewise, the training provided by ROK was significantly different to the one provided by other institutions, as it was "hands- on", in the sense that it allowed the trainees practice with packaging machine and instruments.

3.3. Effectiveness

3.3.1. Has the project been effective in achieving its objectives, outcomes and outputs?

The structure of the project's results framework (PRF) is not adequate to assess the effectiveness of the project. To begin with, it does not provide aggregate indicators. Indeed, the PRF is organized as if the project were two projects instead of one. While some common indicators were established for both countries, no aggregate targets were set. The PRF includes more indicators for Myanmar than for Cambodia (12 versus 9), which is fine as long as some aggregated targets were set.

Moreover, the PRF does not appropriately articulate the objective, outcome and output levels. Ideally, PRFs should have indicators in all those levels, and these indicators should be

hierarchically organized from output to outcome to objective, with more indicators at the output than at the outcome level. However, the ROK PRF does not include objective level indicators. The PRF does include outcome indicators (8) and output indicators (3), but these are not vertically linked, and there is a too limited number of output indicators. One of the indicators is an efficiency indicator and should not be part of the PRF, as it focuses on timeliness of delivery, but not on the quantity and quality of outputs and their outcomes, which should be the focus of the PRF.

Furthermore, none of the indicators is Specific, Measurable, Attainable, Relevant and Time-bound (SMART). Some indicators are not specific. For example, it is unclear if one indicator refers to productivity or production. Some do not provide a clear measurement unit. In addition, baselines are not appropriately defined. All baselines indicate that no progress existed in the target areas, which is unlikely. It is likely that some farmers and entrepreneurs accessed services, used mobile money, utilized platforms, or had access to water before the project, and that some SWPs were managed by women-led community groups before the project. Also, to be robust, the baseline should have indicated the level of productivity and income before the project. Finally, the sources of verification are not adequate. In ten (10) indicators the PRF refers to secondary sources (e.g. impact assessment report, training report), while data needs to be verified through primary sources (i.e. relevant documents MoU documents; production, income and expenditure records; contracts between beneficiaries and finance and insurance providers; membership documents of SWP user groups), or surveys)[31]. In two (2) indicators the referred primary source is not relevant (e.g. the existence of MoU can only be verified by checking the existence of those MoU documents, and cannot be verified by a survey). In six (6) indicators the source of verification is unclear: the PRF refers to data, without indicating which type of data, and from where/whom and when and how it will be or was collected.

There is also room for improvement in reporting. Appropriate verification sources are not used, reporting is often based in information that is not relevant, and in some cases (C1.5) reporting is not consistent with the indicator.

As explained in section 3.3.1, the PRF is not adequate to assess the delivery of outputs and outcomes of the project. In this sense, the assessment below needs to be taken with care. Table 1 below provides a detailed assessment of the progress made against the targets as of 30 September 2023.

In Cambodia, it is possible to assess progress against targets for eight (8) of the nine (9) indicators included in the PRF. As of 30 September 2023, the project had exceeded three (3) or 37.5% of final targets (C1.3, C1.4 and C2.3) and not met five (5) or 62.5% of final targets (C1.1, C1.2, C2.1, C2.2 and C2.4).

Basically, the project had exceeded targets on productivity, income and agreements between SWP companies and business groups, and had not met target on satisfaction with service delivery, agreements between famers and input suppliers, increased access to water, women-led community groups' managed SWP, and satisfaction with after-installation services.

[31] It seems that impact assessments include the verification of the existence MoUs. In that case, the RF should indicate the existence of MoUs as the verification method and MoUs as the source, and not the impact assessment, which only compiles the information.

In Myanmar, it is possible to assess progress against targets only for a limited set of indicators: three (3) of the twelve (12) indicators considered in the PRF. As of 30 September 2023, the project had exceeded these three (3) final targets, on satisfaction on project delivery (M1.1), increased access to water (M2.1) and satisfaction with after-installation services (M2.4).

Table 1. Project progress against final targets

Project Outputs	Reference	Indicators	Baseline (2020)	Country	2023 Annual Target				2023 Actual Results (as of Sept 2023)	Source of Verification	Status as of September 2023	Comment
					Q1	Q2	Q3	Q4				
Output 1: Increased smallholder famer productivity through adoption of innovative agricultural technology and an improved value chain.	C1.1	% Of farmers who confirm they received services and products in a timely manner.	0	Cambodia	50	65	75	75	60%	Impact Assessment Report	The completed activities are contributing toward the results. The producer group were identified, there have been various activities to contribute to enhancement of agriculture production including agriculture techniques, provision of agriculture inputs. According to result from impact assessment, the respondents estimated that 60% of the farmers who use the farmer store have received services and products promptly. The customers interviewed at the four locations all reported having received services and products on time. The farmer store construction has been completed. This platform will be used for income generation when it operationalized, and agriculture business activities occurs include the agreement will be made between the producer groups and buyers.	The indicator is not relevant. This is an efficiency indicator, related to the beneficiaries' perception on the timely delivery of outputs. It is not an objective, outcome or output indicator. The source of verification is not appropriate. Reporting should refer to a survey. A description of the activities and their potential impact according to a reviewer (not a beneficiary) are not relevant.

	M1.1			Myanmar		40	50	70	95%	Beneficiaries list / Technical Completion Report	15,292 HH of 16,181 HH access to agro-advisory service through TOT training, establishment of demonstration plots, farmer field school, field day events, dissemination of advisory through digital platforms and agri talk via Zoom Platforms. Introduction of new variety of crops, making of organic fertilizer, fish amino acid and livestock training. Innovative agricultural practices including water saving technologies such as drip irrigation and fertigation are being introduced to farmers in the project area. In term of engagement in digital platforms, 1,448 farmers in SEAD Agro-advisory Viber Community and 1.16 K subscribers and 33 K views in SEAD Agro-advisory YouTube Channel, are getting timely advisories prepared, developed and responded by the agro advisory specialist of the project.	
	C1.2	# Of agreements/MOU between farmers and agriculture/livestock businesses and input suppliers	0	Cambodia	15	20	20	20	4 formal MoU and 111 informal agreement	Impact Assessment Report	All farmers stores have one signed agreement (MoU) with CSDS for agricultural supplies. The impact assessment also shows that new linkages have been established with micro, small and medium-sized enterprises since the	This is an output indicator. The source of verification is not appropriate. This should be verified by desk review, checking the existence of these MoU. A survey is not relevant. An impact assessment report is only relevant if it has confirmed

											four farmer stores are currently working with 111 suppliers in total.	the existence of the MoU through desk review. Reporting should focus on the indicator. To assess progress, the final target needs to be indicated.
	M1.2			Myanmar	1	3			5	Survey	5 MOUs between farmers and agri input supplier were signed for collective purchasing of organic fertilizers for farmers in the target area. Farmers could save 15% of their actual expense from buying in the ordinary market. This intervention benefited to 5,896 peoples of farmers households.	
	C1.3	% Increase in productivity of small hold farmers	0	Cambodia	15	20	20	20	41%	Impact Assessment Report		This is an outcome indicator. The indicator is not specific. It is unclear if it refers to production or productivity. In the latter case, it is unclear how this is measured. To be robust, the baseline should indicate the level of productivity before the project. The source of verification should be more clearly presented, indicating which type of data (how many beneficiaries, how and when was data collected...)
	M1.3			Myanmar			30		42%	Data	It is found that at least 42 % of farm productivity is increased as a result of project technical support through application of green manure, introducing different crop varieties, introducing newly released crop varieties, timely dissemination of agro-advisories.	
	C1.4	% Increase in income of small-hold farmers	0	Cambodia	15	20	20	20	72%	Impact Assessment Report		This is an outcome indicator. To be robust, the baseline should indicate income before the project. The source of verification should be more clearly presented, indicating which type of data (how many beneficiaries,
	M1.4			Myanmar			20		164-215 %	Data	According to the data and case studies, the income of small holder farmers has increased as a result of	

											project interventions in different activities.	how and when was data collected...)
		# Of farmers and entrepreneurs accessing financial services, start-up capital and insurance of whom 50% are women (MMR only)	0	Cambodia					-			
	M1.5			Myanmar	4	8	10		37 numbers of MSMEs	Training Report	Through the agri-based MSME training and agri-based value addition hands-on and entrepreneurship trainings, the outstanding participants are provided as start up capital both in kind and grant supports. 27 (72.97%) of 37 participants who are awarded start-up grants are women.	This is an outcome indicator. To be robust, the baseline should indicate the number of farmers and entrepreneurs accessing these services before the project, as it is unlikely that no one accessed them. The source of verification is not relevant. This needs to be verified by a survey, or ideally by reviewing their contracts with finance and insurance providers. A training report is only relevant if it provides information based on those sources.
		% Increase in the use of mobile money of which 50% are women (MMR only)	0	Cambodia					-			
	M1.6			Myanmar	10	10			150 numbers of MSMEs	Data	During the MSME training events, one of the sessions was how to apply mobile money for their business. Most of the training participants are using mobile payment (e.g. KBZ Pay). But, in one project township, Myingyan, the internet connectivity has been cut due to evolving situation condition. Some MSME participants cannot access to mobile payment due to lack of connectivity	This is an outcome indicator. To be robust, the baseline should indicate the number of farmers and entrepreneurs using mobile money before the project, as it is unlikely that none used it. The source of verification should be more clearly presented, indicating which type of data (how many beneficiaries, how and when was data collected...). Reporting does not disaggregate by gender.

										in their villages. The project also promoted the digital banking system and start-up grants were provided through digital banking (when it was feasible).	
	C1.5	# Of micro, small and medium-sized enterprises utilizing supplier development platforms for inclusive and sustainable value chains (SP IRRF indicator 1.4.1)	0	Cambodia	20	30	30	30	111	Impact Assessment Report	The four stores have reported to have relations with small and medium-sized enterprises utilizing farmer stores for inclusive and sustainable value chains. In total, 111 suppliers have been recorded during the impact assessment	This is an outcome indicator. To be robust, the baseline should indicate the number of this type of enterprises utilizing this type of platforms before the project, as it is unlikely that there aren't any. The source of verification should be more clearly presented, indicating which type of data (how many beneficiaries, how and when was data collected...). Again, an impact assessment report is not a primary source of verification. Reporting is not adequate for Cambodia: it focuses on suppliers while the indicator refers to SMES using supplier development platforms.
	M1.7			Myanmar		20	20		65	Data	The participants from Agri-based MSME trainings and value addition trainings in Nyaung U are using supplier development platforms for their value added products.	
Output 2: Increased adoption and utilization of solar water pumping in the agriculture sector	**C2.1**	% Of farmers who confirm increased and timely access to water.	0	Cambodia	50	65	75	75	63%	Impact Assessment Report	The 67 SWPs installation has been completed and operationalized by the communities. The 27 SWP system beneficial for agriculture activities because they are located in existing irrigation sites that have built from previous project called Sustainable Resilience Livelihoods, the 27 SWP system is advantageous for agricultural activities (SRL).	This is an outcome indicator. To be robust, the baseline should indicate the percentage of farmers with timely access to water before the project, as itis unlikely that there aren't any. In this sense, the indicator is not clear because it doesn't mention what the universe is (percentage of what type of farmers). The source of verification should be more clearly presented, indicating

											The 40 SWP systems (0.5HP capacity) have been distributed to 40 farmer groups (3-5HHs/group) for household uses and home gardening.	which type of data (how many beneficiaries, how and when was data collected...). Again, an impact assessment report is not a primary source of verification. Reporting indicates the number and types of SWP installed, but not consistently the number of beneficiaries, or the percentage they represent of an unknow universe.
	M2.1			Myanmar	0	30	40	70	95%	Data	51 SWP Systems has been installed and followed by operation and maintenance trainings. Then, forming of solar pump user groups to operate and maintain as a group in line with the SOP developed by the water harvesting specialist of the projects. Installation of 51 SWP Systems (20 nos of 5 KW, 30 nos of 3 KW and one set of 8.8 KW) benefiting 586 farmers HH with 2,750 populations including 166 HH are women headed households.	

	C2.2	# Of SWPs managed by women-led community groups (% of total)	0	Cambodia	20	30	40	50	12%	Impact Assessment Report	The SWP system was recently employed by 20% of farmers who responded. 25% of respondents of the group's members have verified using the service, even though the remaining SWP farmers do not yet need water during this wet season. However, the impact assessment reported that only 12% of the system is managed by women. The lack of meaningful women participation in the leadership role is still a major challenge in Cambodia which required extra interventions beyond project scope.	Depending on how it is considered this is an output indicator (# of SWPs) or an outcome indicator (managed by women). The indicator is not clear: it is unclear if it means that women-led community groups lead management, or women-led households participate in user groups. Again, the baseline should not be zero, as probably some women-led community groups managed some SWPs in project areas before the project. Again, the sources of verification are not adequate - it should be based on the review of the composition of user groups. Reporting mixes the two potential definitions of the indicator. In addition, reporting provided information that is not relevant for this indicator (i.e. cost savings).
	M2.2			Myanmar	0	10	15		79.5%	Data	All solar pump user groups include women-led households and they are taking leading role in operation and maintenance of solar pump systems in their group. Of 586 household, 166 households are women-led. Those women users are actively participating training events, exchange visit, operations and maintenance in the field. According to the database, women participated in 35 (79.5% of the total) solar pump water groups. Among the total members, 108 (30.9%) were female. No	

										female respondents felt discriminated to access water and participate in the user groups. No female respondents faced any difficulties in accessing water supply.	
	C2.3	# Of agreements/MOU/ partnerships developed between SWP companies and business groups	0	Cambodia	15	20	20	20	70	Impact Assessment Report	Agreement has issued for all solar system	This is an output indicator. The source of verification is not appropriate. This should be verified by desk review, checking the existence of these MoU. A survey is not relevant. An impact assessment report is a secondary source. Reporting refers to events, but should refer to actual MoUs.
	M2.3			Myanmar	0	0	5	0	-	Survey	The project team organized partnership events to link the solar companies, water saving equipment suppliers with the solar pump user groups. During the reporting period, starting from July 2023, the project organized events with the communities to improve learning and networking among the solar water pump user groups and other stakeholders. These events included training, linking with solar and irrigation market actors, exchange and learning events. During this project period, UNDP successfully organized 14 events.	
	C2.4	Satisfaction level of the water user group on the quality of after-	0	Cambodia	50	65	75	75	70%	Impact Assessment Report	70% of farmers are satisfied in general and 30% expressed their concerns regarding repairs and maintenance of the systems	This is more an output indicator. The source should be a survey. Field monitoring and Impact Assessment Reports are not relevant sources of verification.

	M2.4	installation services		Myanmar		70	75	80	95%	Field monitoring	According to the field observation and feedback from solar pump user groups, the satisfaction level of water user group on the quality of after installation service is remarkable. The service providers are stand by to provide after installation service if there is any issue on the ground. And service provider is providing periodic provision (3 monthly basis x 2 times) of after-installation services to vulnerable communities as per TOR of the assignment.	Reporting provide information that is not relevant to the indicator.
		% Cost reduction from alternative water storage technologies (MMR only)	0	Cambodia						Survey		
	M2.5			Myanmar		50	70	80		Report	The assessment is ongoing. The result will be updated once the assessment is completed.	This is an outcome indicator. The indicator and baseline seem appropriate. The source of verification is not adequate. This should be verified by the review of cost records, or at least by a survey.

No indicator
Progress cannot be assessed
Exceeded
Achieved
Not achieved

3.3.2. Have unexpected results been achieved beyond what was planned?

The main **unexpected results** were the significant use of digital technology for knowledge sharing, which picked up and spread beyond COVID-19, the Innovation Challenge Fund implemented in Cambodia and launched through UNDP´s AcceleratorLab initiative, which allowed the CO to receive several innovative proposals on SWP technologies, and the provision of energy for non-water pumping related purposes (dry seeds, street lights, hospital). Also, the project covered 3 non-planned locations and more farmers.

3.3.3. To what extent has the project made progress towards the intended impacts?

To what extent has the project helped overcome the barriers for a production and climate resilient agriculture sectors that uses PWS?

From the documents reviewed, the interviews and the field visits, it is possible to say that, overall, **the project helped overcome** the **barriers** for a productive and climate resilient agriculture sector that uses SWP.

Progress towards impact has been particularly important in three fronts. To begin with, **the project has enhanced small-holder´s farmers knowledge of efficient agricultural practices and increased their access to inputs and markets, contributing to a transition from traditional subsistence farming to modern commercial agriculture and, overall, the development of a consolidated agricultural value chain**. In this sense, the project has helped overcome important barriers to productive agriculture, including inadequate farming techniques, absence of climate information and reliable extension services, limited access to resilient seeds, farm tools and innovative technologies; insufficient agricultural market information, inadequate technical knowledge to improve the quality and safety of agricultural products for the market, the lack of marketing facilities to connect smallholder farmers with market and consumers; and a lack of consumer trust in the farmer´s ability to supply safe agricultural products. To address these barriers the project designed training materials and delivered various trainings to small-holders (including hands-on awareness training) on aspects related to agriculture, livestock, resilient seeds, innovative agriculture technology and equipment; developed Farmer Field Schools through Demo Plots; consolidated extension service platforms, and constructed and/or improved farmer stores that now work as exchange nodes of both agricultural produce and production inputs. As a result of these measures, existing evidence suggests that the project has enhanced small-holder farmers knowledge and adoption of climate resilient agricultural practices, and improved their access to inputs and markets by strengthening the links between them and both agro- input providers[32] and potential buyers. Moreover, existing evidence suggests there has been an

[32] According to the documents reviewed, four Memorandums of Understanding (MoU) have been signed between Agricultural Cooperatives and agro-input providers, and a collective-buying agreement has been reached, leading

increase in small-holders productivity and income, although further research might be needed in this regard, including a cost-benefit analysis of the new practices adopted, as there were some cases in which farmers had to incur in significantly higher investments as a result of adopting the approaches or technologies promoted by the project, which could have an impact on their final profits.

Furthermore, the project has fostered a resilient agricultural sector, and enhanced the climate resilience of small-holder farmers and livestock holders. Trainings have considered not only overall productivity, but also climate resilience techniques, and the project has paid attention to climate information and resilient seeds and breeds. In addition, through the promotion of SWP solutions, the project has increased water availability and accessibility for both irrigation and drinking, contributing to reduce the smallholder farmers' and their community's vulnerability to climate-related hazards such as drought, erratic precipitation patterns and scarcity of drinking water.

The project has also significantly enhanced the adoption of SWP technology in the agriculture sector in both countries. The project has helped overcome several barriers in this regard, including the lack of appropriate solar and SWP technologies that truly meet end-users needs, namely those of smallholder farmers, and communities; limited collaboration between SWP companies, installation and local service providers; lack of employment opportunities for solar technicians; and a limited awareness on the part of smallholder farmers and communities on the benefits and opportunities of SWP solutions. The project contributed to remove these barriers by supporting the provision of SWPs to rural communities, promoting the development of innovative "smallholder agriculture-focused" solutions in the SWP sector (in Cambodia for instance, through the Innovation Challenge and Fund), by facilitating linkages between SWP solutions providers, end-users and service providers, and conducting awareness- raising events and hands-on trainings to smallholder groups, vulnerable communities and their water-use groups, SWP companies and service providers, local technicians, and in the case of Cambodia, local government´s staff, and developing several tailored information materials on the benefits of SWP solutions. All these measures, and in particular the installation of SWPs, have contributed to the adoption of these technologies in the agriculture sector (particularly in irrigation), increased communities´ access to drinking water and, overall, enhanced the development of the SWP market[33].

That said, it is still too early to identify clear signs on the project´s long term impact on the adoption of climate resilient practices, the extension of SWPs and the overall sustainable development of the agriculture sector in both countries. In general, behavioural, institutional and market changes take more than three years. In Cambodia, although there was some justification for this[34], the lack

to a 15% savings of actual expenses. See Impact Assessment Report for Cambodia by Sevea and 2022 Annual Project Progress Report.

[33] According to the documents reviewed, this has been particularly the case in Cambodia with the Innovation Challenge and Fund.

[34] Solar water pumps which are installed and operated in remote areas with sufficient water resources while the farmer stores are situated in populated areas to connect to a larger market.

of integration of the two outputs (although there was some integration[35], most beneficiaries were only involved in one output) negatively affected the delivery of impacts[36].

To what extent has the project improved the situation of vulnerable groups?

Overall, existing evidence suggests that the project has directly contributed to improve the situation of several vulnerable groups, including smallholder farmers organized in Agricultural Cooperatives (ACs) or User Groups (UG), Farmers Water User Groups (FWUG), the communities where the project´s activities were implemented and women entrepreneurs and women-led MSMEs. Disabled people do not seem to have benefited.

According to the interviews, previous impact assessments and other documents reviewed, the different activities implemented under **Output 1** have had significant positive impacts on the income and productivity of organized smallholder farmers and improved the local economies of targeted communities. In general, the project contributed to reduce farmers' expenses and increase their productivity and income. Expenses were reduced through the production of bio-inputs, the use of more efficient agricultural practices, the switch to solar energy (see below) and the agreements with agri-input suppliers. In both countries the in-house production of both organic fertilizers and pesticides has reduced the cost of buying them. This was particularly important in Myanmar, where the price of agri-inputs such as chemical fertilizers and pesticides almost tripled as a result of the coup. Better techniques has also reduced mortality, and thus costs. In Cambodia, a chicken- raising farmer has significantly change her raising practices as a result of participating in the project´s trainings, and has reduced chicken mortality rate from 50% to 15%. Improved linkages with agri-input suppliers has also reduced costs. In Cambodia, for example, the construction and/or improvement of four (4) farmer stores has allowed 1,253 members of AC to create new linkages with suppliers of agricultural inputs. In fact, all the four stores have each one signed MoUs with agri-input suppliers and, in one case, even signed a collective buying agreement with an agro company for the supply of resilient seeds at a reduced cost. The stores also allowed AC to establish links with local and national MSMEs and are currently working with 111 suppliers in total. The adoption of more efficient agricultural techniques, better processing techniques, better access to loans and better connections with buyers, among others through the farmers stores, has also helped increase productivity and income. According to an impact assessment conducted to the project in Cambodia that used case studies to assess the extent of the project´s impacts on smallholder farmer productivity and income, these increases ranged from 41 to 733% in the case of productivity, and from 72 to 723% in regard to income. It is worth noting that some farmers are not only generating income from traditional agriculture products, but also from innovative products, such as organic fertilizers or pesticides, and chickens, which were introduced by the project. For instance, a chicken farmer got access to a loan to improve her farming facilities and get more chickens, and is now able to sell chicken on a weekly basis (before she only did it two times per year), thus generating more income for her and her family. Some of the beneficiaries were poor.

[35] For example, the project team started to incorporate solar technology to the farmer stores through provision of a solar-powered cooling systems.
[36] As explained in the efficiency section, the selection of different beneficiaries for the two outputs took place after COVOD-19 (selection of site locations was based though telephone conversation with site verification after travel restrictions were lifted) and based on a feasibility study.

In Cambodia, some beneficiaries are classified as IDPoor 1 & IDPoor 2, who are basically vulnerable farmers.

However, further reflection needs to be done regarding the financial arrangements the project made with the ACs to finance the farmer stores (it required them to contribute with at least 30% of the total investment), and whether this is the most appropriate to reach the poorest and most vulnerable, as information gathered from the field suggests the decision to ask for AC´s contribution might have discouraged some beneficiary´s to participate, or even excluded them on the basis of not having the necessary financial means to engage[37]. This also applies to the provision of financial capital in the form of loans, as these could only be requested by members of the AC and also the project required them to invest 30% of their own capital. Nevertheless, some of the interviewees believed that, although this arrangement could be considered exclusionary, it was better than giving everything "for free", which distorts the local market. It is also worth mentioning that some of these impacts cannot be attributed only to the project, as, as mentioned in section 3.2.2.1, ROK build on the contributions of two previous UNDP projects (UNDP-AF and SEAD)[38], and it might be too early to assess the extent of impact of these activities in increasing smallholder farmers productivity and income.

According to the documents reviewed, the interviews and what could be seen through direct observation of the field, the activities conducted under **output 2** have also positively impacted several vulnerable groups, including Farmer Water User Groups (FWUG), and the communities were large-system SWPs were installed (including school-age children[39]). They did so mostly by improving their access to water (both for irrigation and drinking or household use) and electricity and reducing their expenses (i.e. savings) related to the use of diesel-powered pumps.

As already mentioned, the project´s targeted areas in both countries suffer from occasional but severe water scarcity. In Cambodia, during the dry season, communities do not have water at all. The same happens in Myanmar´s Dry Zone. The installation of SWP (especially larger ones) has helped overcome this, as farmers and communities can now pump water from harder-to-reach areas, have access to clean water and, in the case of farmers, even do cropping in places and periods where they weren´t able to do it before. The same with electricity, which many of the targeted communities don't have at all, or at least not in a regular basis, or not in the fields where farmers farm. With the SWPs, especially those with larger capacity that were installed in two larger communities, this is no longer the case. Furthermore, the installation of SWPs has also significantly contributed to reduce farmer´s expenses related to the acquisition of diesel for the use of traditional diesel pumps, which according to an assessment made in Cambodia, rounded about US$287.5 per year[40]. This was especially important in Myanmar, where diesel costs had significantly raised due to COVID-19, the coup and the subsequent (and ongoing) political crisis.

[37] In Cambodia, some AC were disappointed regarding the construction of their farmer store, which was organized by the CO. In general, they felt that they were expensive, the design was simple and not really good-looking to them. However, from what could be seen through direct observation in the field, the stores were not bad.
[38] Some of ROKs beneficiaries had already benefited from these projects and the specialized knowledge that was shared with them.
[39] The Project Board supported the installation of two large-scale SWP in two vulnerable communities for non-irrigation purposes. They were installed in a primary school and a kindergarten, allowing children to secure access to clean drinking water.
[40] See the project´s Impact Assessment Report from Cambodia.

However, some concerns have been raised (sometimes by farmers themselves) regarding the efficiency of some type of SWP systems in meeting smallholders´ needs in terms of water pumping capacity and flow rates[41], the absence of storage infrastructure considering that water cannot be pumped on cloudy days, the collective governance mechanisms that need to be implemented in regard to the management of SWP systems by communities and water groups, maintenance expenses over time and the financial arrangements made between farmer´s groups or the communities and the companies that supplied the SWPs[42]. However, from the documents reviewed, the information gathered through direct observation and the interviews, it is possible to say that, overall, the installation of SWPs has had a direct impact on the life of both small-holders' beneficiaries and their communities.

Furthermore, **the project has contributed to the promotion of gender equality and the empowerment of women**. It did so by implementing some gender- affirmative specific actions, as in the case of the training given to agri-based women-led MSMEs under output 1 to promote women´s entrepreneurship[43], and by encouraging women´s participation and leadership in ACs and/or FWUGs. While some adjustments were made (mobile SWP) to consider women on the latter, the only gender-focused indicator, which focuses on women-led management of SWP, was not met. Similarly, some of the farmers interviewed as part of an impact assessment conducted in Cambodia reported that the project, in particular the installation of SWPs, has had some positive impacts on youth empowerment, since young family members were more likely to use the pumps as they were easier to operate, contributing to their participation in irrigation activities. However, further specific research might be needed to assess the impact of the project in women and youth empowerment.

3.3.4. What external factors have contributed to achieving, or not, intended country/regional programme outputs and outcomes? What external factors contributed to effectiveness or ineffectiveness?

As mentioned above, the two main external factors that negatively affected the delivery of project´s activities and the achievement of its outputs and outcomes were COVID-19 in both countries and the military coup and subsequent political and social unrest and economic crisis in Myanmar. According to the interviews and documents reviewed, both of them affected the delivery of extension services significantly. In the case of Myanmar, the devaluation of the country´s currency following the coup, inflation and financial restrictions to import goods had all affected the achievement of project´s results. Exchange rates also affected the cost-effectiveness of the

[41] According to the project´s impact assessment conducted a farmer interviewed in Kampong Thom in Cambodia and who uses a Type 5 SWP reported recurrent problems with low flow. The committee from one community expressed their concerns regarding the limited capacity of the system installed, which has been designed to irrigate 140 hectares, but their total land to irrigate is 200 hectares.

[42] The business model used in some cases, especially in larger-scale SWPs, requires farmers to pay a fee to use the water, approximately $85 to $70 per hectare. Users will have to wait 2 years before having a significant fee decrease (from $85 to $70 per hectare) resulting in positive economic impact for them.

[43] An entrepreneurship training to women-led agri-based MSMEs was organized as part of activities of output 1.

intervention. Here, the project´s decision to engage with specialized NGOs and CSOs with strong local presence as implementing partners positively contributed to service delivery.

At the same time and paradoxically as it might seem, both COVID-19 and the coup did have an unintended positive effect with regards to the promotion of SWPs, as the increasing prices of diesel in both countries made them more attractive to beneficiaries. This was also the case with chemical agri-inputs, as increased costs promoted the adoption of the production of organic fertilizers and pesticides.

3.4. Efficiency

3.4.1. How were risks managed and mitigated?

Overall, risks were adequately monitored, managed and mitigated as they occurred. As already mentioned, the project was implemented in extremely difficult times due to COVID-19 and, in the case of Myanmar, the military coup. These two situations affected its implementation and delivery of results in no minor way (in Myanmar, the coup almost led to the project´s cancellation). However, the project was able to deal with these and other emerging risks thanks to relatively good information systems and the implementation of risk-mitigation strategies when needed.

The ProDoc identified and briefly described risks that could negatively affect the delivery of the expected results in both countries, considering multiple categories (Strategic, Organizational, Climate, Operational, Implementation capacity, Currency/market, project management and Equipment-related). During the design phase, a “Social and Environmental Screening Template / Pre-screening” was also conducted, identifying potential social and environmental risks and describing assessment and management measures.

Based on the above-mentioned major risk factors, each country developed its own Risk Log, containing information on the cause of the risk, impact(s), likelihood, risk level, timeframe, owner and treatment[44]. These Risk Logs were later updated and presented in the Quarterly and Annual Reports during implementation, with additional information on the status of each risk, date of last update and specific countermeasures/management response to deal with them[45].

According to the interviews and the project´s documents, CO´s teams monitored and identified risks every day and, when they emerged, discussed them on project management weekly meetings. They also had monthly meetings with BRH in which they also discussed existing risks and, when relevant, presented them in the Project Board´s meetings (or via emails when necessary).

To deal with emerging risks, project teams developed and followed a series of risk-coping and mitigation strategies that varied in type and scale, allowing them to cope with them and mitigate their impact effectively.

[44] The impact and likelihood of risks are also ranked using UNDP risk ranking system.
[45] Sometimes risks were also mentioned in the “Issues and Challenges” sections of the reports.

Following COVID-19 and subsequent restrictions in both countries, the COs monitored the situation in a regular basis and adjusted their implementation approaches towards online consultations and trainings, small groups workshops, home-based consultancies and other social distancing measures.

In Cambodia, to counteract the risk (identified in the ProDoc) of local and regional authorities not supporting the project, or resources being allocated in a manner not consistent with the project´s objectives, the CO decided to sign a LoA with the NCDDS to support in the coordination and implementation of project´s activities at the sub-national level. Furthermore, when it realized NCDDS might not be able to complete the project´s activities on time, due to a lack of implementation capacity, it decided to engage international NGOs with on the ground presence, such as Heifer International and PIN, as implementing partners, through the development of RPA, to accelerate implementation.

In Myanmar, when the coup happened and there was a risk that donor will disengage from the project due to the fragile political environment, the CO hold consultations with UNCT and adapted its programming (including ROK project) in line with UNCT´s Engagement Principles. The CO also changed the focus of its partnerships and engagement towards CSO and the private sector[46].

3.4.2. Adaptive management (changes in project design and project results during project implementation)

Since its inception, ROK was conceived as a catalytic project, the main focus being on maximizing its impact and exploring possibilities to scale-up[47]. With this in mind, both flexibility and adaptability have been important management aspects. According to the interviews and documents reviewed, the project teams (including COs and the Project Board) were able to circumnavigate the difficult challenges faced by the project (mainly COVID-19 and the Myanmar military coup), showing a high degree of responsiveness and adaptability to contextual changes. The project made indeed adjustments when they were most needed (even regarding budget allocation), or when evidence from the field through direct observation, Back-to-Office reports, rapid needs assessments, studies and/or consultation with other stakeholders suggested it was convenient to do so.

Some examples that show this was the case are:

1. In Myanmar, following COVID-19, the coup and the restriction to work with government bodies and the risk that the project´s main donor would abandon the project, the CO requested the Project Board to relocate budget previously assigned to activities that involved working with local government counterparts, to instead conducting a rapid needs assessment to identify potential alternative ecosystem actors that could assist in the delivery of extension services previously thought to be delivered by government bodies. The study found that 91% of the project´s activities could still be implemented and delivered and its objectives achieved by engaging CSOs and the private sector as implementing partners. As result of this, the CO identified and engaged with two CSO as implementing partners and they were able to continue implementing the project.

[46] See 2021 Annual Project Progress Report.
[47] See initial remarks on the minute of the Project Board First meeting (November 20th 2020).

2. Also in Myanmar, as a result of COVID-19 and the coup, the CO adjusted activities by switching from intensive in-site visits to online assistance through existing digital platforms, especially when movement was not easy for the team or the community.

3. In Cambodia, the CO intended to get directly involved in the construction of farmer stores as part of the activities under Activity Result C1.1[48]. However, after multiple consultations with staff from ASPIRE and other organizations with previous experience setting up similar collective centers in targeted areas, they realized that, in order for the stores to be fully operational, work on a business-as-usual basis, and truly meet producers/buyers-market demands once they were built, it was necessary to complement these with further capacity- building and support activities to producers and future would-be operators, as in the past many sites had been observed to be temporarily inoperative when not much agricultural activity occurs in the communities. Consequently, the CO settled a comprehensive RPA with NGO Heifer International Cambodia for this matter, a well-known organization for her long-term approach and experience working with communities on the ground. The RPA not only included the construction of the stores by Heifer, but also the provision of technical support and coaching to Agriculture Cooperatives (AC) with whom Heifer had already worked to increase their production through the use of innovative technology and learn packaging and storage techniques so that their products could meet the market´s requirements in terms of quantity and quality assurance. By doing this, the CO was able to support the intervention's shift toward sustainability and community-based ownership, as the farmer stores were conceived as a facility to enable accessibility to the market as well as a linkage tool between the producers and buyers[49].

4. Also in Cambodia, the initial idea for delivering the activities of Output C.2.4[50] related to the installation of SWPs was to work with water- groups that were already created during previous projects in targeted communities. However, due to the findings of a field assessment conducted in those communities[51], the project decided to relocate and install SWP in other areas. This meant that new groups had to be created, which by experience the CO knew was going to be a long process (approximately 1.5 years). To accelerate the process, the CO decided to engage with wider Agriculture Cooperatives (AC), as those cooperatives were already working and had their own plans and were already operational.

5. Following a request from Cambodia´s CO, the Project Board accepted to expand the project´s locations beyond the provinces defined in PRODOC, in order to maximize the project´s impact. As a result, two recently-demined areas were included[52].

6. ROK´s outputs were rightly conceived as complementary, so the initial idea was that the same beneficiaries (communities, farmers, cooperatives) benefited from both. However, assessment studies held in Cambodia as part of outcomes 1 and 2[53] found that, in some cases, targeted

[48] Activity Result C1.1: Producer-buyer linkages strengthened for sustainable provision of agricultural production inputs for resilient agriculture.
[49] For further reference, see Cambodia´s CO Quarterly Progress Report (Q2-2022)
[50] Output 2.4: *SWP solutions installed and operational*.
[51] See Cambodia´s Quarterly Progress Report (Q3-2021) for further reference.
[52] See the minute of the Second Project Board Meeting (May 10th 2022).
[53] The first study, conducted under output 1, was a market assessment for value chain development for smallholder framers. The second, conducted under output 2, was a research report on the innovation applied in other countries and proposed business model for Cambodia and included a field assessment to target sites/villages to install SWPs.

communities only needed support in one output, and not necessarily both, as some who needed the agriculture-related support of output 1 had already access to water, and those needing water where not necessary agriculture- farmers. As a result of these findings, the project adapted its interventions by tailoring to each community´s specific needs.

All these examples show proof of the project team applying an adaptive management approach when needed.

Moreover, document review and interviews suggest that the project teams made considerable efforts to document lessons learned and adaptive management processes on a continual basis, internalize them and share them with other relevant stakeholders. For instance, all of the project´s monitoring documents, such as quarterly and annual reports, included “Issues and Challenges” and “Lessons Learned” sections, and issues on these regards were brought to the table by the COs in their communications with BRH or the Project Board´s meetings54. The Project Board´s third annual meeting was held on-site in Cambodia and included on-site visits to some of the project´s sites so members of the CO from Myanmar who had travel to the country to assist the meeting, could see how the project was being implemented in the field.

COs also made considerable efforts to keep relevant stakeholders, including the project´s Board, local partners (when possible), beneficiaries, communities and even Korean counterparts (embassies in both countries), regularly informed and updated on the project´s development and emerging issues affecting the project[55]. This was in particularly the case in Myanmar during 2021, when, in the midst of COVID-19 and the military coup, communication with local stakeholders was iterated to ensure that all the project´s affected communities understood the new context under which the project had to operate[56]. In Cambodia, the project held an annual reflection workshop in 2023 where most stakeholders were invited to discuss challenges, learnings and how to scale-up the project´s achievements and align with the transition of the government.

3.4.3. Financing and co-financing

Is there a difference between planned and actual expenditure, and why?

As of 31 October 2023, the project had spent 64% of the actual cash contribution[57]. Per output, the rate of expenditure had been greater in output 1 (75% of planned funds) than in output 2 (68% of planned funds). Per country, the rate of expenditure was way better in Cambodia (84% of planned funds) than in Myanmar (56% of planned funds). Actually, Cambodia spent nearly all planned funds for output 1 (97%), with a more limited financial delivery (79%) in output 2. In Myanmar, the financial delivery was relatively similar between the two outputs (59% in output 1

[54] According to the interviews, communication between the COs, BRH and the project´s Board has always been very strong and fluid, as the formers went the long-haul to ensure they were well informed on how the project evolved.
[55] Korean embassies even accompanied the COs during some field missions to visit some of the project´s activities.
[56] According to the documents reviewed, they were also asked to help ensure the project´s activities were directly supporting them and not the de fact authorities, and to take on a more significant role during the implementation of activities. See 2021 Annual Progress Report.
[57] It had spent 63% of the planned contribution.

and 55% in output 2). The rate of expenditure was particularly low (37% of planned funds) in 2021, improved in 2022 (77%) and decreased in 2023 (63%).

Table 2 below provides details.

Table 2. Project financing

	2021			2022			2023 (Jan 1 - Oct 31)			Cumulative (4 Dec 2020 - 31 Oct 2023)		
	Planned		Percentage	Planned		Percentage	Planned		Percentage	Planned		Percentag
	Prodoc	Actual	Over Prodoc	Prodoc	Actual	Over Prodoc	Prodoc	Actual	Over Prodoc	Prodoc	Actual	Over the prodoc
Output 1	**$ 296,753**	**$ 111,335**	**38%**	**$ 432,280**	**$ 398,630**	**92%**	**$ 416,239**	**$ 347,782**	**84%**	**$ 1,145,272**	**$ 857,746**	**75%**
Cambodia	$ 149,039	$ 93,251	**63%**	**$ 165,800**	**$ 112,856**	**68%**	$ 164,761	$ 260,916	**158%**	**$ 479,600**	**$ 467,024**	**97%**
Myanmar	$ 147,714	$ 18,084	**12%**	**$ 266,480**	**$ 285,773**	**107%**	$ 251,478	$ 86,865	**35%**	**$ 665,672**	**$ 390,723**	**59%**
Output 2	**$ 503,480**	**$ 185,993**	**37%**	**$1,040,873**	**$ 803,322**	**77%**	**$ 836,081**	**$ 640,813**	**77%**	**$ 2,380,434**	**$ 1,630,128**	**68%**
Cambodia	$ 248,000	$ 180,012	**73%**	**$ 616,397**	**$ 707,874**	**115%**	$ 506,603	$ 191,099	**38%**	**$ 1,371,000**	**$ 1,078,986**	**79%**
Myanmar	$ 255,480	$ 5,981	**2%**	**$ 424,476**	**$ 95,448**	**22%**	$ 329,478	$ 449,713	**136%**	**$ 1,009,434**	**$ 551,143**	**55%**
PMC	**$ 294,321**	**$ 112,970**	**38%**	**$ 406,896**	**$ 247,270**	**61%**	**$ 397,954**	**$ 32,633**	**8%**	**$ 1,099,171**	**$ 392,874**	**36%**
Cambodia	$ 130,922	$ 98,766	**75%**	**$ 124,650**	**$ 90,589**	**73%**	$ 124,650	$ 22,450	**18%**	**$ 380,222**	**$ 211,805**	**56%**
Myanmar	$ 106,691	$ 8,853	**8%**	**$ 184,843**	**$ 65,166**	**35%**	$ 187,805	$ 1,799	**1%**	**$ 479,339**	**$ 75,818**	**16%**
Regional	$ 56,708	$ 5,351	**9%**	**$ 97,403**	**$ 91,516**	**94%**	$ 85,499	$ 8,384	**10%**	**$ 239,610**	**$ 105,251**	**44%**
GMS	**$ 87,564**	$ 32,821	**37%**	**$ 150,404**	**$ 115,812**	**77%**	$ 132,022	$ 106,961	**81%**	**$ 369,990**	**$ 255,595**	**69%**
Total	**$1,182,118**	**$ 443,120**	**37%**	**$2,030,453**	**$1,565,035**	**77%**	**$1,782,296**	**$1,128,189**	**63%**	**$ 4,994,867**	**$ 3,136,344**	**63%**

Source: BRH

Was any cofinancing raised?

Cash cofinancing was raised from ACs and the private sector in Cambodia. In particular, 234,472 USD were raised in this country, as shown in Table 3. In addition, as mentioned in section 3.2.2, the project built on recent projects and created synergies with ongoing projects, which could be considered to a certain extent in kind cofinancing. This was the case especially in Myanmar.

Table 3. Cash co-financing raised by the project in Cambodia

Output	Purpose	Source	Percentage	Amount
Output 1	Construction of Farmer Store	Agricultural Cooperatives	31%	$ 24,682.63
	Capital Fund for Resilient Agri-Techniques	Agricultural Cooperatives	29%	$ 39,749.26
Output 2	Large-Scale SWP with PIN	Private Sector Entities	30.75%	$ 55,833.00
	Innovation Challenge	SOGE 25 HP	33.20%	$ 19,886.00
		EGE 30HP	57%	$ 54,000.00
		EcoSun 30HP	35.50%	$ 22,010.00
		Koh Thkov AC	31.40%	$ 18,312.00
Total Resource Mobilized				**$ 234,472.89**

Source: UNDP Cambodia

Were the accounting and financial systems established for the management of the project and the production of accurate and timely financial information adequate?

Document review demonstrates that the accounting and financial systems established for the management of the project were adequate. ROK expenditures were presented trough Annual Certified Financial Reports (CFR) to the Government of the Republic of Korea, Annual Work Plans (AWPs) included a detail budget for every country and Outcome, and both a yearly-Financial table and a Summary of Project´s expenditures by country were presented as annexes in the Annual progress reports. Quarterly reports did not include financial information nor expenditures. The project also presented signed-Combined Delivery Reports (CDRs). Furthermore, UNDP COs hired external accountant firms through TORs to conduct Spot Check analysis on implementing partners[58].

[58] However, only the Spot Checks of implementing partners PIN and NCDDS were provided to the evaluator for analysis.

Have financial resources been used efficiently, and could financial resources have been used more efficiently?

The project was not particularly efficient. The budget included resources to cover the Project Management Costs (PMC), which represented 22% of the total planned budget. This is a high percentage if compared to the percentage approved for example by the Global Environment Facility (GEF) and the Green Climate Fund (GCF) for a project this size, which is 10% for GEF and 5% for GCF[59], even if sometimes these projects include PMC in the components. The actual PMC represented 13% of all actual project expenditures, which, although still above the ceiling established by other funds, it is more reasonable. The budget allocated PMC related resources to the two countries and the regional level. The percentage of PMC over the total budget in the country was high (14%) in Cambodia and more reasonable (8%) in Myanmar[60]. PMC at the regional level represented 8% of total project expenditure.

3.4.4. Monitoring and Evaluation (M&E) System

The ProDoc did not include a robust M&E system. The ProDoc presented a M&E plan, which enlists seven monitoring activities to be conducted throughout the project, as well as their purpose, frequency, expected actions and costs. However, it did not establish who was responsible for delivering them, and only assigns budget to two of them. In relation to evaluation, it only establishes one activity, a Terminal Evaluation to be conducted three months before the project´s end. No mid-term evaluation is considered in this plan, although this is reasonable given the planned length of the project. As explained in section 3.3.1, the PRF was not adequate to monitor and assess progress.

During project implementation, the seven planned monitoring activities were conducted. Monitoring reports were delivered on time: the project prepared quarterly and yearly progress monitoring reports, as well as Back-to-Office Reports. In addition, beyond commissioning this independent terminal evaluation report, the project delivered impact assessment reports. Overall, monitoring reports provide good information, but have some room for improvement. Quarterly and yearly progress monitoring reports explained the activities that had been done and the partnerships that had been developed throughout the period, defined next steps and shared important strategic information for management purposes (including risks and lessons learned). However, there is room for improvement in the quality of reports submitted. As mentioned in Section 3.3.1 and detailed in **Error! Reference source not found.**, appropriate verification sources are not used, reporting is often based in information that is not relevant, and in some cases (C1.5) reporting is not consistent with the indicator. Back-to-Office Reports are not ROK-specific but rather describe what has been done on mission trips in relation to all of the CO´s ongoing projects, and in some cases, it is difficult to know which particular project they are referring to.

[59] GEF/C.39/9 and Decision GCF/B.19/43

[60] Cambodia had used 56% of its planned PMC funds; Myanmar, 16%; BRH, 44%.

3.4.5. Institutional arrangements (with relevant stakeholders) and stakeholder engagement

Throughout project implementation, the COs developed key institutional partnerships with different stakeholders at all levels, which has been key for the achievement of project´s results.

During the project´s design phase, according to the interviews, BRH engaged several stakeholders at different levels to develop the project, including UN experts. Experts form the Government of Korea, in particular from MAFRA and KRC, were also involved at this stage. The teams also worked with several national and subnational- levels stakeholders at this stage, by holding consultative processes with local actors, NGOs working in the field, staff from previous projects in both countries, and solar energy and ICT sector´ service providers, among others[61]. According to the interviews, it was a participatory process with inputs from national and subnational levels, as well as the BRH.

During implementation, the COs signed RPAs with NGOs (and in Myanmar, a local private company[62]) and engaged them as implementing partners of several activities of the project[63]. In Cambodia, the CO also signed a LoA with the NCDDS to coordinate activities with subnational stakeholders (including the provincial departments of environment, rural development, water resources, agriculture) and involved local authorities in different tasks during implementation. These partnerships were key for project delivery, as these actors brought to the project valuable (and sometimes essential) implementing-capacity, information, knowledge, networks and resources.

In addition, alliances and partnerships were also made with the private sector, such as ICT companies, SWP and agri-inputs providers and drillers, which were paramount to the project, particularly in scaling up solar energy. Through the Innovation Challenge and Innovation Fund, the project was able to engage solar energy and technology entrepreneurs to adapt their business models to make them more fit to the communities' needs and realities. This "grant" model allowed the project to get to test different technologies, promote innovation in these sectors and get the best "value for money".

Several specialized consultancies (both national and international) were also involved as stakeholders during project´s implementation, but rather in an indirect way. They were hired to conduct needs assessments and studies on aspects related to both outputs, whose findings were later used to inform the selection and target of beneficiaries, defining the technology to be used in the case of SWPs, or the content to be shared with beneficiaries in workshops.

The project also engaged with several stakeholders at the local level. Local authorities such as village chiefs and commune councils were deeply involved in identifying communities' needs, contacting local groups and cooperatives and even targeting the project´s beneficiaries. The

[61] In Myanmar, the CO has also worked closely and sought technical guidance from government bodies such as MoALI at this stage, as the project was designed before the military coup.
[62] Yangon Impact Hub
[63] In Cambodia, PRAs were signed with INGO Heifer International Cambodia and PIN. In Myanmar, with CESVI and Yangon Regional Hub.

project also worked with Agriculture Cooperatives, farmer´s groups (including self-aid groups), community water-groups and women-led MSME, although from the documents reviewed and the interviews, it seems that their engagement was more in a beneficiary/ recipient role rather than as active participants in the development of the project.

This wide stakeholder engagement, considering the broader institutional ecosystem, contributed not only significantly improved delivery, but also expanded the project´s impact and strengthened its sustainability.

3.4.6. Management/handling process

Overall, management was appropriate. Roles and responsibilities were clearly defined at all levels and the implementation strategy was flexible enough to allow it to be efficient and cost-effective.

The Project Board was the project´s main management body and the one responsible for making all the major decisions regarding project´s implementation and budget allocation, based on the inputs of BRH and, most importantly, the COs. It provided the strategic leadership required and managed well the challenge brough by the Myanmar coup. However, in terms of composition, a more diverse membership could have been helpful to better integrate the two country-level interventions.

UNDP BRH adequately provided overall oversight of the project. It was responsible for the consolidation of the project´s results and for reporting them to the donor on a regular basis, through Quarterly and Annual Progress Reports based on quarterly reports and updates provided by COs[64], which was done overall appropriately. BRH had monthly update- meetings with COs ad conducted several site visits to track the progress.

COs performed as executing partners inside the project and were the main responsible for ensuring the implementation of the project in each country, although more in a supervisory role. According to the interviews, COs performed well as executing partners and had a strong coordination with relevant regional and local stakeholders. They also made great efforts to ensure the effectiveness and efficiency of the project and that everyone was well informed, particularly implementing partners to whom they also accompanied and provided the necessary technical support. COs also conducted regular visits to the project´s sites[65] (when it was possible to do so) to supervise activities and meet with local stakeholders when necessary. During the military coup in Myanmar, CO´s staff visited several communities to inform them on the changes that were being implemented as a result due to the coup.

In Cambodia, NCDDS has helped with the coordination of activities and was the project´s focal point with relevant stakeholders at the subnational level. Although at the beginning of the project it was expected that it would also help with the implementation of some activities, it was later decided to change towards other stakeholders with more experience implementing similar activities in the

[64] According to PRODOC, it was also in charge of ensuring value-addition knowledge management experience sharing across participating countries and dissemination of lessons to other countries in the region.
[65] See Back-to-Office Reports.

field, as there was a risk that activities might not be delivered on time. However, NCDDS´s coordination role at the subnational level has been very important.

Implementing partners were responsible for implementing most of the activities in the ground, whether constructing market stores, coordinate the installation of SWPs and/or organizing workshops, meetings and trainings. Their role has been fundamental to the project, as overall they improved the efficiency and effectiveness of the project. They were in constant communication with the COs and delivered them reports on a continuous basis. Interviews mention however that the expenditure approval process were slow and did not allow a quick adjustment to changing local conditions.

Overall, however, both the management of the project and the handling of responsibilities have allowed it to execute the project in an efficient and timely manner, when context allowed.

3.4.7. Work planning

There were some delays, in 2021 due to COVID-19 and then in 2022 in Myanmar due to the military coup, which implied a change in the strategy and affected field work due to insecurity. However, and as already mentioned, the COs implemented a series of adaptive management strategies that allowed them to overcome these and other barriers, mainly by engaging implementing partners.

In both countries, most of the activities of outcome 2 were delivered on time. There were some delays in the installation of SWP, but they were minor considering the circumstances. The lack of implementation capacity on the part of NCDD delayed the installation of SWP, but it was overcome by engaging NGO Heifer International.

In Cambodia, although the installation of SWPs was completed and the project even overdelivered in this regard, there were some delays regarding the delivery of funds for some activities of this output (2). This was the case with the grants given as part of the Innovation Challenge, as the engagement process and legal/contract modality that was required by the new UNDP system made it very complex for the CO to engage with local competitors from the private sector.

In Myanmar, the installation of SWP and capacity-building training of Outcome 1 were delivered rather at the end than at the beginning of the project, mainly due to the military coup[66]. There have also been some issues regarding the management of funds by implementing parties, due to bank constraints and the restrictions that de facto authorities have put on the circulation of cash and the international transfer of funds

Overall, given the circumstances and some administrative restrictions, the project funds and activities have been delivered in a timely and efficient manner.

[66] Some activities of outcome 1 are still being delivered at the time of writing this report.

3.5. Sustainability

3.5.1. Did the project devise a sound sustainability strategy, did it include a specific exit strategy, and did it implement it?

The project document includes a section on sustainability (and scaling up). The section has a subsection for each of the countries, without providing an integrated, project-level sustainability strategy. However, in both countries, the exit strategy relies on the same factors: social ownership, enhanced capacity through trainings and awareness raising materials, and additional funding from government and development partners. Overall, the strategy was implemented, although teams were not always aware it existed.

3.5.2. To what extent are there economic/financial, institutional and governance, technical, socio-economic and/or environmental risks to sustain the project results in the long term?

Overall, the sustainability of project results is moderately likely. In general, the legal, regulatory and policy framework in both countries is conductive to sustainability, as discussed in Sections 3.1.3 and 3.3.3, although the project has not made any impact on that, and it would be convenient to further reflect the project's results in the legal, regulatory and policy framework both at the cross-sectoral and sectoral levels (agriculture, energy and water resources).

The institutional framework supports the sustainability of project's results in Cambodia, particularly through the NCDD and its linkages with provincial governments. In both countries, in any case, the project has strengthened institutional networks within communities and between communities, international and national NGOs and the private sector, and in Cambodia the government, increasing social capital, which contributes to the sustainability of project's results.

Political ownership is an enabling factor in Cambodia, where different levels of government are committed to support the sustainability of project's results, but is a risk in Myanmar, given political instability. In both countries, there is significant social ownership, especially on climate resilient agriculture, where the practices have proven economically beneficial. This is particularly the case in Myanmar, where the economic situation makes the cost-efficient measures promoted by the project especially relevant, and where the continued support on this front has achieved stronger adoption. Social ownership on SWP is more mixed, particularly when not everyone benefited, but overall, there is good ownership, especially as long as cost of diesel continue to be high. The fact that some farmers invested some funds in the infrastructures supported by the project contributes to their sustainability.

Technical resources seem to be available to sustain the results of the project on Output 1, including on bio-inputs, although they do not seem strong enough on chicken raising. In Myanmar, the online, interactive agri-advisory platform is well established and an important enabling factor – farmers are also able to make a call if Internet drops. In both countries, the historical and strong on the ground presence of NGOs and agreements with input providers will contribute to the

sustainability of project's results. There are some concerns regarding the internal capacity of WUGs, although training was provided and guidelines developed on operating, maintaining and fixing the SWP, but the project has ensured medium term support from service providers, with extended, longer than usual warranties both for the solar and the pumping technologies, which will contribute to the sustainability of project's results on Output 2. In this sense, solar energy providers were selected because they provide after installation services. Recently a storm destroyed some solar panels, and the companies fixed them in less than 72 hours.

From a financial point of view the sustainability of project's results seems likely. Development partners have showed interest in both countries. WB, ADB, ROK and GIZ seem to be interested in supporting Cambodia moving further on SWPs, especially now that the technology and the business model have been proved. In Myanmar, KOIKA and Norway have committed funding for further supporting this type of work, even if there is a constrained environment for development partners to join because the political and security situation. Both UNDP COs are making efforts to raise funds within broader programmes (in Myanmar within the rural resilience programme / community first programme). In Myanmar, the Enabling community resilience and recovery project (ENCORE project) will support sustainability. For Output 1, the promoted practices have increased income, which will help sustain project's results. In Myanmar, where imports became so expensive, there is a clear market for local produce. On Output 2, the commitment of the private sector and community/user group fee collection will bring financial resources to maintain and repair SWPs.

From an environmental and climatic angle, sustainability is moderately likely in the short term, but moderately unlikely in the medium term and unlikely in the long term. Although some water conservation and harvesting measures were promoted (e.g. drip irrigation, sprinkler irrigation, fertigation) and water use efficiency training was conducted (including information on crop water requirements), sound water availability studies were not conducted, and useful technologies (such as water meters) were not provided. More importantly, the target areas have particularly fragile ecosystem and there is significant water scarcity, so there is a risk of water over extraction / depletion of water resources, considering climate change projections. Although to a lesser extent, because here climate resilience was more soundly addressed, climate change also poses risks to the sustainability of project's results in Output 1, as there are limits to adaptation, especially in very fragile ecosystems.

4. CONCLUSIONS, LESSONS AND RECOMMENDATIONS

4.1. Conclusions

Relevance

The ROK project is in line with SDGs, contributing directly to SDGs 1 on *Poverty*, 2 on *Zero Hunger* and 7 on *Affordable and clean energy* and indirectly to SDG 6 on *Clean water and Sanitation*. The project is also consistent with UNDP's global, regional and national priorities: it is in tune with UNDP's Strategic Plans 2018-2021 and 2022-2025, UNDP's RPD for the Asia-Pacific Region 2022–2025, the CPD 2019-2023 in Cambodia and the CPD 2018-2022 and the UNCT´s

engagement principle and “Community First” programme developed after the military coup in Myanmar. The project is also aligned and contributed to the national strategies and priorities of both countries. In Cambodia, it supports the implementation of the *RGC’s Rectangular Strategy for Growth, Employment, Equity and Efficiency Phase-IV (RS4*) and contributes to priority #8 of the National Assembly´s Sixth Legislature. It also contributes to the country´s *National Strategic Plan for Rural Water Supply of the Ministry of Agriculture Water and Resources, Sanitation and Hygiene* and to the country´s intention to become Zero net carbon emitter by 2050 and its NDC. In Myanmar, the project is well aligned with its *Sustainable Development Plan 2018-2030,* its *2018 Agricultural Development Strategy* and its *Strategic Directions for the Agricultural Sector 2018-2023*. In addition, the objectives and activities of the project respond to the subnational needs of target areas in both countries.

The project was formulated mainly by the UNDP regional team with information provided by COs. Although there was some consultation with subnational stakeholders during design phase, it does not seem beneficiaries, and in particular women and persons with disabilities, were consulted during the design process. During implementation, COs involved different stakeholders. In Cambodia, UNDP signed a LoA with NCDDS and through RPAs, engaged two experienced NGOs with strong presence in the target areas, as implementing partners (Heifer International and PIN). In Myanmar, following the coup and the restriction to work with de facto authorities, the CO pivoted its partnerships towards CSOs and the private sector.

Coherence

Project design

The project document (ProDoc) did not include a Theory of Change linking the problem to be addressed and the strategy to be followed to solve or reduce the problem, presenting the assumptions and the risks. Moreover, the presentation of the strategy has significant room for improvement. The ProDoc does not explicitly formulate the project’s objective(s) and outcomes. Moreover, while the nature of the activities is mostly the same in both countries, they are presented in an inconsistent manner, which does not help viewing the project as an integrated whole. Also, some activities are duplicated. That said, overall, the activities contribute to the achievement of project outcomes.

Outputs were mostly feasible and realistic within the project's budget and time frame at the time of project design, but were affected by unpredictable external shocks (i.e. COVID-19 and the Myanmar coup) and procurement processes during implementation. Outcomes such as behavioural, institutional and market changes, require more than 3 years, especially if they involve testing technologies and business models. Project design and monitoring did not comprehensively take into account human rights and gender inequalities and differentiation. Although it was subject to social screening, the design was not informed by a gender analysis and action plan, and the PRF only addressed this partially.

Linkage and complementarity

The ProDoc identified four past and ongoing projects and established lessons from or synergies with them. To a certain extent, ROK was a follow- up to some of them. The project governance structure was not particularly conductive for coordination with a wide range of stakeholders. This included a project board, which was integrated by the BRH’ manager, members of Cambodia and

Myanmar COs and representatives of the Government of Korea, but did not involve a broader stakeholder engagement structure, either a project board per country or a technical committee either at the regional or national levels. At the country level, however, the project coordinated through the UNDP COs and the engagement of national and subnational governments (when relevant), as well as international and national NGOs with strong presence in the target areas. The project also coordinated with existing community groups and cooperatives, building on their knowledge, resources and networks for greater impact and sustainability. These coordination efforts helped the ROK project avoid duplications and create synergies with complementary projects, in line and beyond which was planned in the ProDoc.

Effectiveness

Achievement of objectives, outcomes and outputs

The structure of the project's results framework (PRF) is not adequate to assess the effectiveness of the project. It does not provide aggregate indicators and is organized as if the project were two projects instead of one. Moreover, the PRF does not appropriately articulate the objective, outcome and output levels, with no indicators at the objective level. Furthermore, none of the indicators is SMART: some indicators are not specific, some do not provide a clear measurement unit, and in general baselines and sources of verification tend to inadequate. There is also room for improvement in reporting.

That said, the achievement of targets was moderately satisfactory. In Cambodia, it is possible to assess progress against targets for 8 of the 9 indicators included in the PRF. As of 30 September 2023, the project had exceeded 3 or 37.5% of final targets and not met 5 or 62.5%. In this country, the project had exceeded targets on productivity, income and agreements between SWP companies and business groups, and had not met target on satisfaction with service delivery, agreements between famers and input suppliers, increased access to water, women-led community groups' managed SWP, and satisfaction with after-installation services. In Myanmar, it is possible to assess progress against targets only for 3 of the 12 indicators in the PRF. As of 30 September 2023, the project had exceeded these 3 final targets, on satisfaction on project delivery (M1.1), increased access to water (M2.1) and satisfaction with after-installation services (M2.4).

Unexpected results

The main unexpected results were the significant use of digital technology for knowledge sharing, which picked up and spread beyond COVID-19, the SWP Accelerator Lab implemented in Cambodia, and the provision of energy for non-water pumping related purposes (dry seeds, street lights, hospital). Also, the project covered three (3) non-planned locations and more farmers.

Progress towards intended impacts

The project helped overcome the barriers for a productive and climate resilient agriculture sector that uses SWP in three fronts. First, by enhancing small-holder´s farmers knowledge of efficient agricultural practices and increasing their access to inputs and markets, contributing to a transition from traditional subsistence farming to modern commercial agriculture and, overall, the development of a consolidated agricultural value chain. Second, by fostering a resilient agricultural sector, and enhancing the climate resilience of small-holder farmers and livestock holders. Third, by enhancing the adoption of SWP technology in the agriculture sector in both countries.

The project has directly contributed to improve the situation of several vulnerable groups, including smallholder farmers organized in ACs, UGs, FWUGs, the communities where the project´s activities were implemented and women entrepreneurs and women-led MSMEs. Disabled people do not seem to have benefited. Activities implemented under Output 1 have had significant positive impacts on the income and productivity of organized smallholder farmers and improved the local economies of targeted communities, reducing farmer´s expenses and increasing their productivity and income. Activities conducted under output 2 have also positively impacted several vulnerable groups, including FWUG, and the communities were large-system SWPs were installed (including school-age children), by improving their access to water and electricity, while reducing their expenses related to the use of diesel-powered pumps. Furthermore, by implementing some gender- affirmative specific actions, as in the case of the training given to agri-based women-led MSMEs the project has contributed to the promotion of gender equality and the empowerment of women, and has also had positive impacts on youth empowerment.

External factors

The two main external factors that negatively affected the delivery of project´s activities and the achievement of its outputs and outcomes were COVID-19 in both countries and the military coup and subsequent political and social unrest and economic crisis in Myanmar. However, both COVID-19 and the coup promoted SWPs and the adoption of the production of organic fertilizers and pesticides, as the costs of alternatives increased.

Efficiency

Risk management

Overall, risks were adequately monitored, managed and mitigated as they occurred. The project was implemented in extremely difficult times due to COVID-19 and, in the case of Myanmar, the military coup. However, the project was able to deal with these and other emerging risks thanks to relatively good information systems and the implementation of risk-mitigation strategies when needed. The ProDoc identified and briefly described risks that could negatively affect the delivery of the expected results in both countries, considering multiple categories, and each country developed its own Risk Log, containing information on the cause of the risk, impact(s), likelihood, risk level, timeframe, owner and treatment. To deal with emerging risks, project teams developed and followed a series of risk-coping and mitigation strategies that varied in type and scale, allowing them to cope with them and mitigate their impact effectively.

Adaptive management

The project showed good adaptive management. The project teams (including Cos, the PMU in BRH and the Project Board) were able to circumnavigate the difficult challenges faced by COVID-19 and the military coup by showing a high degree of responsiveness and adaptability to contextual changes and making adjustments when they were most needed. The project team also made good efforts to document lessons learned and adaptive management processes on a continual basis, internalize them and share them with other relevant stakeholders, and to keep them informed and updated on the project´s development and emerging issues.

Financing

As of 31 October 2023, the project had spent 64% of the actual cash contribution. The rate of expenditure had been greater in output 1 (75% of planned funds) than in output 2 (68% of planned funds). Per country, the rate of expenditure was way better in Cambodia (84% of planned funds) than in Myanmar (56% of planned funds). The rate of expenditure was particularly low (37% of planned funds) in 2021, improved in 2022 (77%) and decreased in 2023 (63%). Cash cofinancing was raised from farmers and the private sector in Cambodia.

Accounting and financial systems

The accounting and financial systems established for the management of the project were adequate. ROK expenditures were presented trough Annual Certified Financial Reports (CFR), Annual Work Plans (AWPs) were presented as annexes in the Annual progress reports and the project presented signed-Combined Delivery Reports (CDRs). UNDP COs hired external accountant firms through TORs to conduct Spot Check analysis on implementing partners, but quarterly reports did not include financial information nor expenditures.

Use of resources

The project was not particularly efficient. Project Management Costs (PMC) represented 22% of the total planned budget, which is a high percentage if compared to the percentage approved by GEF and the GCF for a project this size (10% for GEF and 5% for GCF). The actual PMC represented 13% of all actual project expenditures, which, although still above the ceiling established by other funds, it is more reasonable. The budget allocated PMC related resources to the two countries and the regional level. The percentage of PMC over the total budget in the country was high (14%) in Cambodia and more reasonable (8%) in Myanmar[67]. PMC at the regional level represented 8% of total project expenditure.

M&E system

The ProDoc did not include a robust M&E system, but rather a plan enlisting seven monitoring activities, their purpose, frequency, expected actions and costs. However, it did not establish who was responsible for delivering them, and only assigned budget to two of them. Moreover, the PRF was not adequate to monitor and assess progress. Monitoring activities were conducted during project implementation and monitoring reports were delivered on time, including quarterly and yearly progress monitoring reports and Back-to-Office Reports. Beyond this independent terminal evaluation report, the project delivered impact assessment reports. Overall, monitoring reports provide good information, but have some room for improvement.

Institutional arrangements and stakeholder involvement

Throughout project implementation, the COs developed key institutional partnerships with different stakeholders at all levels. COs signed RPAs with NGOs and a LoA with NCDDS and alliances and partnerships were also made with the private sector, such as ICT companies, SWP and agri-inputs providers and drillers. Through the Innovation Challenge and Innovation Fund, the project was able to engage solar energy and technology entrepreneurs. The project also engaged with several stakeholders at the local level. This wide stakeholder engagement, considering the broader

[67] Cambodia had used 56% of its planned PMC funds; Myanmar, 16%; BRH, 44%.

institutional ecosystem, contributed not only significantly improved delivery, but also expanded the project´s impact and strengthened its sustainability.

Management/ Handling process

Overall, management was appropriate. Roles and responsibilities were clearly defined at all levels and the implementation strategy was flexible enough to allow it to be efficient and cost-effective. Both the management of the project and the handling of responsibilities have allowed the project to be executed in an efficient and timely manner, when context allowed.

Work planning

There were some delays, in 2021 due to COVID-19 and then in 2022 in Myanmar due to the military coup, which implied a change in the strategy and affected field work due to insecurity. In both countries, most of the activities of outcome 2 were delivered on time. Overall, given the circumstances and some administrative restrictions, the project funds and activities have been delivered in a timely and efficient manner.

Sustainability

The ProDoc includes a section on sustainability, which includes a subsection for each of the countries. An integrated, project-level sustainability strategy is not provided. The strategy was implemented, although teams were not always aware it existed.

The sustainability of project results is moderately likely. The legal, regulatory and policy framework in both countries is conductive to sustainability, although it would be convenient to further reflect the project's results in the legal, regulatory and policy framework. The institutional framework supports the sustainability of results in Cambodia, and to a lesser extent in Myanmar, where social capital has increased, but political instability is a risk. In both countries, there is significant social ownership, especially on climate resilient agriculture, where the practices have proven economically beneficial. Social ownership on SWP is more mixed, particularly when not everyone benefited. The fact that some farmers invested some funds in the infrastructures supported by the project contributes to their sustainability. Technical resources seem to be available to sustain the results of the project on Outputs 1 and 2, thanks to training, linkages with extensionists, NGOs and input and service providers, and extended warranties. From a financial point of view the sustainability of project's results seems likely, as development partners have showed interest in both countries, activities on output 1 are profitable and there is a market, SWPs are cost-efficient, fee collection mechanisms are in place and private sector is committed. From an environmental and climatic angle, sustainability is moderately likely in the short term, but moderately unlikely in the medium term and unlikely in the long term, given the fragility of target ecosystems and climate change projections, particularly regarding water scarcity.

Based on the findings the following ratings are given:

Table 4. Scorecard

Criteria	Rating
Relevance	Satisfactory

Effectiveness	Moderately Satisfactory
Efficiency	Satisfactory
M&E	Moderately Satisfactory
Implementation/Oversight	Satisfactory
Execution	Satisfactory
Sustainability	Moderately likely

4.2. Lessons

1. It is important to draw linkages and seek synergies between projects within a portfolio (in this case, synergies between projects within the regional programme)
2. Similarly, it is important that regional projects are not developed as an aggregation of stand-alone, independent country projects. It is indeed key that common challenges and interventions are identified and synergies between country interventions sought, including exchanges between projects.
3. Project design should be based on the development of a proper Theory of Change, including objectives, outcomes, outputs and activities, integrating them, linking the strategy to the problem to be addressed, including its underlying causes, and identifying risks and assumptions.
4. During implementation, it is important to ensure synergies between the different types of interventions/outputs.
5. Projects should include a sound RF, with SMART indicators at objective, outcome and output level, containing adequate baselines and robust methods and sources of verification.
6. Adaptive management is key for all development projects, but especially for those implemented in unstable countries. It is crucial that project boards remain flexible. Sometimes political or social crisis may require putting project implementation into a pause until there is more clarity on the situation, and a better, more strategic way forward can be defined. Where the economic context is very volatile, contingency funds can be convenient.
7. When feasible, it is crucial to engage national and provincial governments, signing an LoA or an MoU, establishing areas of collaboration and support. Counterpart ministries need to be well identified during project design.
8. Partnerships with specialized international and national NGOs with on ground presence and with existing groups and cooperatives can significantly improve delivery, expand impact and

strengthen sustainability. In this sense, it is fundamental to integrate interventions into the wider institutional ecosystem.

9. The private sector has a key role to play in the scaling up of solar energy, but engaging them requires proper planning, including considering lengthy procurement processes. When engaging them, development partners need to identify when to move from a grant model to test technologies and business models to an investment model for scaling them up.

10. Leaving no one behind and promoting gender equality requires intentional efforts. Often it may be useful to create synergies with projects focusing on those topics.

11. Trainings, especially in-person trainings requiring travel, need to be planned well in advance considering the availability of beneficiaries, who have other duties and cannot always commit to training sessions that run multiple days.

12. Achieving a paradigm shift is a long term process that requires sustained support during several years. This is especially the case if this requires testing of technologies and business models. In this regard, innovative projects should test technologies before rigidly defining which ones will be procured. In this sense, mobile and large scale water pumping systems seem to be the most convenient, if adequate support is delivered by the service providers.

13. In a climate change context, the promotion of SWPs, especially of large-scale SWPs, needs to be informed by medium and long-term surface and underground water availability assessments and paired with water conservation and harvesting infrastructure (e.g. water storage tanks, reservoirs) and technologies (e.g. water meters) and training on water use efficiency measures, to avoid overextraction and the rapid depletion of water resources. This has implications in terms of institutional arrangements, as water management authorities need to be involved in the design and implementation of SWP-related projects.

14. Solar energy can have multiple uses beyond those originally prioritized (in this case, water pumping). It is important to plan those uses from the design, seeking synergies. In this sense, these other uses should not be unexpected benefits, but planned co-benefits. Solar solutions can be applied in agriculture (e.g. solar driers) and non-agriculture activities.

15. Digital extension service mechanisms and platforms have a key role to play in promoting resilient agriculture, particularly, but not only, when working with remote or insecure areas, as they allow cost-efficient large scale dissemination of information (e.g. weather and market information) and good practices.

4.3. Recommendations

1. In the next six months, ROK/MAFRA should consider providing further financial support for another phase of the evaluated project, given the promising context in Cambodia and the needs in Myanmar

2. In the next six months, but especially in the next three months, UNDP BRH and Cambodia and Myanmar COs should continue to try to mobilize complementary funds from other development partners for potential new ideas/proposals/projects, considering the nexus between water, food

and energy as discussed in a related report published by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)[68]

3. In the short, medium and long term, when designing new proposals/projects, and more broadly in future programming and pipeline development, UNDP should:

- Draw linkages and seek synergies between projects within a portfolio (in this case, further integrate the potential next phase of ROK within the regional programme)
- Further integrate the country interventions at outcome and output levels, identifying common challenges and solutions, using similar formulations, while acknowledging the specific country circumstances, and continuing exchanges between countries
- Develop a robust ToC for the regional project and ToCs for country interventions, including objectives, outcomes, outputs and activities, integrating them, linking the strategy to the problem to be addressed, including its underlying causes, and identifying risks and assumptions
- Prepare a sound PRF, with SMART indicators at objective, outcome and output level, containing adequate baselines and robust methods and sources of verification. It should also prepare an adequate M&E plan, properly budgeted, with clear roles and responsibilities and regular on the ground monitoring.

4. In the next six months, when designing potential new ideas/proposals/projects, UNDP BRH should

- Propose continuing working with national and subnational partners, both governmental and non-governmental, such as international and national NGOs and the private sector, in order to integrate the project into the wider institutional ecosystem
- More intentionally address gender equality and human rights, to begin with by developing a gender analysis and action plan

5. In the next six months, when developing a project similar to ROK Solar project, UNDP BRH and Cambodia and Myanmar COs should

- Better integrate in-country interventions, creating synergies between outputs, potentially focusing in a more limited number of areas to concentrate investments and achieve economies of scale.
- Conduct medium and long-term surface and underground water availability assessments where the installation of SWPs, especially large-scale SWPs, is considered and pair the promotion of SWPs with water conservation and harvesting infrastructures and technologies and training on water use efficiency measures.

[68] https://www.unescap.org/kp/2023/delivering-sustainable-development-goals-through-solutions-energy-food-and-finance-nexus

- Plan the complementary uses of solar energy beyond water pumping, including on agriculture and non-agriculture related uses, including residential water supply. Assess which green and solar solutions can be applied in each country.
- Continue to promote online extension service mechanisms, and plan in person trainings in advance considering the availability of trainees
- Consider a contingency fund, particularly, but not only, for activities in Myanmar, given the volatile situation, with high inflation and severe devaluation, and in both countries remain flexible during implementation

6. In the next six months, when designing the potential next phase of the ROK project being evaluated, UNDP BRH and UNDP Cambodia should consider that in Cambodia it should be a different type of project: a large-scale investment project, with private sector partners and where there are returns, rather than a pilot, grant project. It should mostly focus on operationalising the identified business model, and on large-scale SWP. This could include blended finance, with the private sector making financial contributions. In any case, mobile SWP should also be considered, given their impact on poverty reduction.

7. In the next six months, when designing the potential next phase of the ROK project being evaluated, UNDP BRH and UNDP Myanmar should further test technologies before making significant commitments in specific technologies, to ensure most resources are invested in the technologies that prove more beneficial during the testing face. Also further strengthen market linkages, and further support bio-inputs and livestock disease prevention and cure.

5. ANNEXES

5.1. Evaluation matrix[69]

Table 5. Evaluation matrix

Evaluation criteria	Questions	Indicators	Sources	Method
1. Relevance and Coherence: To what extent was the project consistent with SDGs, the strategic objectives of UNDP and local, regional and national priorities?				
.1.1. Is the project consistent with SDGs?	• To what extent was the project aligned with and contributed[70] to the Sustainable Development Goals (SDGs)?	• Existence of a clear link between project objectives and SDGs	• ProDoc • Quarterly and annual reports • SDGs • Interviews with UNDP BRH	• Document analysis • Interviews
.1.2. Are the project objectives aligned with UNDP's strategic	• To what extent was the project in line with and contributed[71] to the UNDP	• Existence of a clear link between project objectives and UNDP global, regional and national priorities. /	• Project document • UNDP Strategic Plan	• Document analysis • Interviews

[69] The matrix includes all the evaluation questions included in section 3 the ToR (pp. 4-6). Some questions, however, are not evaluation questions, but areas that recommendations need to cover, and will thus be covered in the recommendations section and not in the findings section. In particular this is the case of How can the project build on or expand its greatest achievements? How can or could constraining factors be overcomes? What could be done to strengthen exit strategies and sustainability in order to support female and male project beneficiaries as well as marginalized groups?

[70] For the sake of a better narrative flow, it is better to integrate the relevance and effectiveness questions in this case.

[71] Ibidem.

	priorities at the global, regional and national levels?	priorities at the global, regional and national levels?	level of contribution to the theory of change for the relevant country and regional programme outcomes	• UNDP Regional programme for Asia • UNDP CPDs in Cambodia and Myanmar • Interviews with UNDP at the regional and national levels (BRH and COs)	
.1.3.	To what extent is the project consistent with national strategies and priorities?	• To what extent was the project aligned with and contributed to[72] the countries' strategies and priorities? • What was the level of national stakeholder involvement in the design and implementation of the project?[73]	• Level of alignment between the project's objectives and the priorities, policies and strategies of Cambodia and Myanmar • Perception of the level of country ownership of the project • Perception of the level of national stakeholder participation in project design and implementation	• Project documents • National policies and strategies • Interviews with UNDP COs, NCDDs (Cambodia) and NGOs and CSOs (Myanmar)	• Document analysis • Interviews
.1.4.	Is the project consistent with the needs and plans in the project intervention areas?	• To what extent does the project respond to subnational needs in the project intervention area? • Have all relevant regional and municipal stakeholders	• Level of alignment between project objectives and the needs of relevant stakeholders at regional and municipal levels, in terms of alignment with provincial and municipal development plans.	• ProDoc • Quarterly and annual reports • Regional and municipal development plans • Interviews with Provincial Governments (Cambodia) and NGOs and CSOs	• Document analysis • Interviews/FGDs • Direct observation

[72] Ibid.

[73] This includes "To what extent were perspectives of men and women who could affect the outcomes, and those who could contribute information or other resources to the attainment of stated results, taken into account during project design processes?"

	been included during project implementation?[74]	• Perception of the level of involvement of local stakeholders (women and men, and vulnerable groups, including persons with disability) in the implementation of the project	(Myanmar), and beneficiaries.	
.1.5. Quality of project design	• How clear and well-integrated were the project's objectives, outcomes, outputs and activities?[75] • How feasible and realistic were the project objectives, outcomes and outputs within the available budget and time frame?[76] • To what extent did the project design and monitoring take into account human rights, as well as gender inequalities and differentiation?[77]	• Consistency between the objective, outcomes, outputs and activities of the project • Strategic adequacy of objectives, outcomes and outputs • Feasibility of objectives, outcomes and outputs within the project's budget and time fr • Existence of analysis and action plans, or specific measures, on gender, human rights and disability	• ProDOC and its annexes • Quarterly and annual reports • Interviews with UNDP BRH and COs, NCDDs (Cambodia) and NGOs and CSOs (Myanmar)	• Document analysis • Interviews
1.6. Linkage and complementarity of the	• Were other interventions within the sector clearly	• Other interventions in the sector duly described and their	• ProDoc	• Document analysis

[74] This includes "To what extent were perspectives of men and women who could affect the outcomes, and those who could contribute information or other resources to the attainment of stated results, taken into account during project design processes?" Were persons with disabilities consulted and meaningfully involved in programme planning and implementation?

[75] Are the project objectives and outputs clear? What, if any, alternative strategies would have been more effective in achieving the project objectives?

[76] Are the project objectives and outputs practical and feasible within its frame?

[77] To what extent have gender equality and the empowerment of women (and human rights and disability) been addressed in the design, implementation and monitoring of the project?

project with other interventions in the sector	identified in the project document? • Has the intervention been coordinated with other donors to seek complementarities and synergies? • To what extent does the project support (and not duplicate) activities and objectives not addressed by other projects or programmes?	possible synergies with the project analysed • Adequacy of coordination mechanisms / Efforts made to optimize synergies with other initiatives and avoid duplication of effort during project implementation • Synergies or overlap between the project and other existing initiatives during project implementation. •	• Quarterly and annual report • Interviews with UNDP BRH and COs, NCDDs and provincial governments (Cambodia), NGOs and CSOs (Myanmar), and beneficiaries.	• Interviews/FGDs • Direct observation
3. Effectiveness: To what extent have the project's expected results and objectives been achieved?				
3.1. Has the project been effective in achieving its objectives, outcomes and outputs?[78]	• To what extent did the project achieve its intended objectives? • To what extent did the project achieve the expected outcomes? • What was the quality of the outcomes achieved? • To what extent did the project achieve the planned outputs? • What has been the quality of the products provided?	• Level of achievement of targets with respect to objectives • Level of achievement of targets with respect to outcomes • Level of achievement of output targets • Quality of outcomes • Quality of outputs	• ProDoc • Progress and monitoring reports • Impact assessments • Interviews with UNDP BRH and COs, NCDDs (Cambodia) and NGOs and CSOs (Myanmar).	• Document analysis • Interviews • Direct observation

[78] This will include answering the questions on greatest and fewest achievements.

3.2. Have unexpected results been achieved beyond what was planned?	• Have unexpected results been achieved beyond what was planned?	• Existence of unintended results during project implementation	• Project documents • Progress and monitoring reports • Impact assessments • Interviews with UNDP BRH and COs, NCDDs and provincial governments (Cambodia), NGOs and CSOs (Myanmar),.	• Document analysis • Interviews • Direct observation
To what extent has the project made progress towards the intended impacts?	• To what extent has the project helped overcome the barriers for a production and climate resilient agriculture sectors that uses PWS? • To what extent has the project improved the situation of vulnerable groups? [79]	• Evidence of barriers removed • Evidence of improvements in the situation of vulnerable groups	• Project documents • Progress and monitoring reports • Impact assessments • Interviews with UNDP BRH and COs, NCDDs and provincial governments (Cambodia), NGOs and CSOs (Myanmar), and beneficiaries.	• Document analysis • Interviews/FGDs • Direct observation
What external factors have contributed to achieving, or not, intended country/regional programme outputs and outcomes? What external factors contributed	• What external factors have contributed to achieving, or not, intended	• Number, nature and extent of external factors	• Project documents • Progress and monitoring reports • Impact assessments	• Document analysis • Interviews

[79] This covers To what extent have poor, indigenous and physically challenged (disabled), women, men and other disadvantaged and marginalized groups benefited from the project? To what extent has the project promoted positive changes in gender equality and the empowerment of women? Did any unintended effects emerge for women, men or vulnerable groups? To what extent will targeted men, women and vulnerable people benefit from the project interventions in the long-term? Although the latter is presented in the ToR under sustainability it is actually an impact question, which is better integrated with effectiveness questions.

to effectiveness or ineffectiveness? [80]	country/regional programme outputs and outcomes? [81]		• Interviews with UNDP BRH and COs, NCDDs (Cambodia), NGOs and CSOs (Myanmar),	
4. Efficiency: Was the project implemented efficiently, in accordance with international and national norms and standards?				
4.1. How were risks and managed and mitigated?[82]	• How well were risks managed? • What was the quality of the risk mitigation strategies developed and were they sufficient?	• Quality of existing information systems to identify emerging risks and other issues (project context factors) • Quality of the risk mitigation strategies developed and followed	• Project documents • Progress and monitoring reports • Interviews with UNDP BRH and COs, NCDDs and provincial governments (Cambodia), NGOs and CSOs (Myanmar), and beneficiaries.	• Document analysis • Interviews/FGDs • Direct observation
4.2. Adaptive management (changes in project design and project results during project implementation)	• Did the project undergo significant changes as a result of changes in context and /or recommendations from workshops, the steering committee or other review procedures?[83]	• Responsiveness of implementing and executing agencies to changes in context and/or recommendations made through the review process (PPR and mid-term evaluation) • Examples of changes in project strategy/approach as a direct	• Progress reports and monitoring • Minutes of workshops and meetings of the Steering Committee • Interviews with UNDP BRH and COs, NCDDs	• Document analysis • Interviews

[80] Kindly note that the focus here is on external factors, since the efficiency criterion focuses on internal factors (e.g. institutional arrangements, implementing and executing capacity and performance).
[81] This includes: what have been the supporting factors? What have been the constraining factors and why?
[82] Corresponding to evaluation questions 7 and 8 in the ToR.
[83] To what extent has the project been appropriately responsive to political, legal, economic, institutional, etc., changes in the countries?

	• What follow-up actions (if any) and/or adaptive management measures have been taken in response to progress reports (PPRs)? • How were lessons from the adaptive management process documented, shared with and internalised by key partners?[84]	result of recommendations made • Proportion of adaptive management processes documented and shared with partners	(Cambodia), NGOs and CSOs (Myanmar).	
4.3. Financing and co-financing	• Is there a difference between planned and actual expenditure, and why? • Was any cofinancing raised? • Were the accounting and financial systems established for the management of the project and the production of accurate and timely financial information adequate? • Have financial resources been used efficiently, and could financial resources have been used more efficiently?	• Level of discrepancy between planned and executed budget • Leveraged co-financing • Availability and quality of financial reports • Level of management expenditure and discrepancy with forecasts	• Project planning documents • Progress reports • Financial reporting • Cost-benefit estimates of the project or similar projects • Interviews with BRH	• Document analysis • Interviews

[84] This covers To what extent are lessons learned documented by the project team on a continual basis and shared with appropriate parties who could learn from the project?, Which is more a efficiency than a sustainability question.

4.4. Monitoring and Evaluation (M&E) System	• Did the project have a robust M&E system to measure the achievement of results? • Did it have sufficient financial resources? • Was the logical framework used during implementation as a management and monitoring tool? • Did the project meet the requirements/timeframe for progress reporting? • Were progress reports fully and adequately completed (in compliance with the guidelines and providing the necessary strategic information)?	• Robustness of the M&E system • Financing the M&E system • Level of use of the M&E system • Relevance and quality of monitoring and progress reports	• ProDoc • Progress reports and monitoring • Interviews with UNDP BRH and COs, NCDDs (Cambodia), NGOs and CSOs (Myanmar).	• Document analysis • Interviews
4.5. Institutional arrangements (with relevant stakeholders) and stakeholder engagement	• To what extent were effective partnerships for project implementation established with relevant stakeholders at different levels? • To what extent were relevant stakeholders involved in the design, implementation and monitoring of the project	• Number and types of partnerships established between the project and local bodies/organisations • Number, type and quality of mechanisms implemented to promote stakeholder participation at each stage of project design, implementation and monitoring • Number and level of participation in workshops •	• Project documents • Minutes of meetings/workshops • Interviews with UNDP BRH and COs, NCDDs (Cambodia), NGOs and CSOs (Myanmar)..	• Document analysis • Interviews • Direct observation

	(through information sharing and consultation)?[85] • Did national stakeholders have an active role in project decision-making that guide implementation? •			
4.6. Management/handling process [86]	• Have the implementing and executing agencies, respectively, provided sufficient resources to achieve the project results? • What is the quality of project implementation by the implementing and executing agencies?	• Evidence that clear roles and responsibilities are in place • Level of discrepancy between the actual and planned amount of budget and staff time spent on the project • Difference between actual and planned project implementation schedule • Quality of supervision of implementing and executing agencies, respectively.	• Progress reports • AWP's and budgets • Interviews with UNDP BRH and COs, NCDDs and provincial governments (Cambodia), NGOs and CSOs (Myanmar), and beneficiaries.	• Document analysis • Interviews • Direct observation
4.7 Work planning	• To what extent have project funds and activities been delivered in a timely manner?	• Number of activities programmed/accomplished according to AWPs • Number, extent and causes of delays	• Project documents Progress and monitoring reports • Interviews with UNDP BRH and COs, NCDDs	• Document analysis • Interviews • Direct observation

[85] This covers To what extent was the project management structure as outlined in the project document efficient in generating the expected results? , and To what extent have different stakeholders been involved in project implementation?

[86] This covers To what extent have the UNDP project implementation strategy and execution been efficient and cost-effective? To what extent has there been an economical use of financial and human resources? Have resources (funds, male and female staff, time, expertise, etc.) been allocated strategically to achieve outcomes? To what extent have resources been used efficiently? Have activities supporting the strategy been cost-effective?

			(Cambodia), NGOs and CSOs (Myanmar)..	
5. Sustainability: To what extent are there financial, institutional, socio-economic and/or environmental risks to sustain the project results in the long term?				
5.1. To what extent are there economic/financial, institutional and governance, technical, socio-economic and/or environmental risks to sustain the project results in the long term?[87]	• Did the project devise a sound sustainability strategy, did it include a specific exit strategy, and did it implement it?[88] • What factors can enable or hinder the achievement of sustainable results?	• Existence and strength of a sustainability and exit strategy • Extent of obstacles and/or risks to the sustainability of project results[89]: Coherence with the legal, regulatory and public policy framework Consistency with institutional and governance framework Level of initiative and commitment shown by national counterparts in project activities and results Level of technical and technological capacities displayed by national counterparts in accordance with the levels required to sustain project results and benefits.	• Project documents Progress and monitoring reports Impact assessments • Interviews with UNDP BRH and COs, NCDDs and provincial governments (Cambodia), NGOs and CSOs (Myanmar), and beneficiaries. •	• Document analysis • Interviews/FGDs • Direct observation

[87] Corresponding to evaluation questions 15, 16, 17, 18 and 19 of the ToR.

[88] This covers To what extent do UNDP interventions have well-designed and well-planned exit strategies which include a gender dimension?

[89] This covers Are there any social or political risks that may jeopardize sustainability of project outputs and the project contributions to country programme outputs and outcomes? And Do the legal frameworks, policies and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits?

		Existence of socio-political risks affecting the sustainability of project results and benefits. Financial requirements to sustain project benefits Level of expected financial resources available to support the maintenance of project benefits Potential of additional financial resources to support the maintenance of project benefits Existence of environmental risks affecting the sustainability of project results and benefits.		

5.2. List of reviewed documents

The documentation listed in Annex B of the ToR will be reviewed in detail. This list will be supplemented as the evaluation is carried out.

1. The contract and its extensions and amendments;
2. The project document (ProDoc) with all its annexes, including the Theory of Change, the results framework and UNDP SESP and associated management plans;
3. Annual Workplans (AWP);
4. Project Progress reports (quarterly and annual[90]),
5. Monitoring reports - oversight missions reports (Back-to-office reports and Spot-checks[91]);
6. Minutes of Project Board Meetings and of other meetings (i.e. Project Appraisal Committee meetings);
7. Financial data, including actual expenditures by project outcome, including management costs, and including documentation of any significant budget revisions;
8. Combined Delivery Reports (CFR);
9. Certified Financial Reports (CFR);
10. Electronic copies of project outputs (booklets, manuals, technical reports, articles, etc.);
11. Sample of project communications materials (videos);
12. Project deliverables that provide documentary evidence of achievement towards project outcomes;
13. Relevant socio-economic monitoring data, such as average incomes / employment levels of stakeholders in the target area, change in revenue related to project activities;
14. UNDP CPDs for Cambodia and Myanmar.
15. UNDP Regional Program Documents for the Asia Pacific Region.
16. Rectangular Strategy for Growth, Employment, Equity and Efficiency phase IV of the Royal Government of Cambodia
17. The impact and needs assessments conducted in Cambodia and Myanmar by other consultants.

[90] The 2023 Annual Project Progress Report was not shared for revision.
[91] Two Spot-check reports on implementing partners PIN and NCDD were reviewed.

5.3. List of interviewees

Table 6. List of interviewes

Organization	Interview	Interview mode	Interviewer	Position	Gender
BRH	1	Remote	IC	Regional Technical Advisor	Male
				Project manager	Female
UNDP Cambodia	2	Remote	IC	Technical Support	Female
				Programme Analyst	Male
				Project Officer	Female
UNDP Myanmar	3	Remote	IC	Deputy Resident Representative	Male
	4	Remote	IC	Project Manager	Female
				National Technical Advisor	Male
				Water Harvesting Specialist	Male
NCDDD	5	Hybrid	IC, NC	Deputy Program Director	Male
				Project Officer	Female
				Chief of Overall Technical Service Support Office	Male
People in Need	6	Remote	IC	Country Director	Male
CESVI Foundation	7	Remote	IC	Project manager	Female
				Agricultural Consultant	Female
Impact Hub Yangon	8	Remote	IC	1 Representative	Female
Beneficiaries (FGD)					
Cambodia	13 FGDs	In-person	NC Cambodia		
Myanmar	9 FGDs, 8 Interviews	In-person	NC Myanmar		

5.4. Mission agendas

Table 7 Cambodia Mission Agenda

Day	Time	Travel Route		Location	Type of activity	Number	Beneficary Group / Stream of work
		From	**To**				
Day 1 (Oct 30)	7:30-9:00	Phnom Penh	Tangkork		Travel		
	9:00-10:00			Tangkork Farmer Store	FGD	FGD 1	Tangkork Farmer Store
	10:00-10:30			Tangkok Site	Site visit	Site visit 1	
	10:30-11:15	Tangkok	Barray		Travel		
	10:30-11:30			Barray District Hall	FGD	FGD 2	Users of SWP Type 1 (Su Sokkean) SWP Type 3 (Seng Chhay)
	11:30-12:00			Barray Site	Site visit	Site visit 2	
	12:00-14:00	Barray	Steung Sen		Travel and lunch		
	14:00-15:30			Kampong Thom Provincial Office	FGD	FGD 3	Users of SWP Type 4(A), SWP Type 1, SWP **Type**
	15:30-16:00			Steung Sen Site	Site visit	Site visit 3	
Day 2 (Oct 31)	8:00-8:30	Steung Sen	Orkunthor		Travel		
	8:00-9:00			Orkunthor Site	FGD	FGD 4	Large-scale SWP users of Orkunthor and Kampong Kor
	9:00-9:30			Orkunthor Site	Site visit	Site visit 4	
	9:30-10:30	Orkunthor	Prasat Ballangk		Travel		
	10:30-11:30			Sammekki Commune Hall	FGD	FGD 5	Users of SWP Type 5
	11:30-12:00			Prasat Ballangk Site	Site visit	Site visit 5	
	12:00-14:00	Prasat Ballangk	Stoung		Travel and lunch		
	14:00-15:00			Stoung Farmer Market	FGD	FGD 6	Stoung Farmer Store
	15:00-15:30			Stoun Site	Site visit	Site visit 6	
	15:30-17:30	Stoung	Siem Reap City		Travel		
Day 3 (Nov 1)	8:00-8:30	Siem Reap City	Prasat Bakong		Travel		

	8:00-9:00		Prasat Bakong	Bakong Farmer Market	FGD	FGD 7	Bakong Farmer Market
	9:00-9:30				Site visit	Site visit 7	
	9:30-9:45	Prasat Bakong	Trapaeng Thom		Travel		
	9:45-10:45			Trapaeng Thom Commune Hall	FGD	FGD 8	Users of SWP Type 5 from Trapaeng Thom
	10:45-11:15			Trapaeng Thom Site	Site visit	Site visit 8	
	11:15-12:00	Trapaeng Thom	Rolous		Travel and lunch		
	12:30-13:30			Rolous Commune	FGD	FGD 9	Users of SWP Type 5 and Type 4B
	13:30-14:00			Rolous Site	Site visit	Site visit 9	
	14:00-15:00	Rolous	Pouk		Travel		
	15:00-16:00			Pouk Farmer Store	FGD	FGD 10	Pouk Farmer Store
	16:00-16:30			Pouk Site	Site visit	Site visit 10	
	16:30-17:00	Pouk	Siem Reap City		Travel		
Day 4 (Nov 2)	7:30-8:30	Siem Reap City	Kralanh		Travel		
	8:30-9:30			Ou Kralanh Commune Hall	FGD	FGD 11	Users of SWP Type 4(B)
	9:30-10:00			Kralanh Site	Site visit	Site visit 11	
	10:00-10:30	Kralanh	Srey Snom		Travel		
	12:00-13:00			Srey Snom District Hall	FGD	FGD 12	Users of SWP Type 2 and Type 4(A)
	13:00-13:30			Srey Snom Site	Site visit	Site visit 12	
	13:30-16:30	Srey Snom	Battambang		Travel and lunch		
Day 5 (Nov 3)	7:30-8:00	Battambang	Prek Norin		Travel		
	8:30-9:30			Prek Norin Site	FGD	FGD 13	Users of Large-Scale SWP
	9:30-10:00			Prek Norin Site	Site visit	Site visit 13	
	10:00-14:30	Battambang	Phnom Penh		Travel		

Table 8. Myanmar Mission agenda

Date	Activity	Village Point	Participating Villages
31. 10 2023	1. Meet with the Farmers (Agriculture)	Hta Naung Win Village, Nyaung U	Hta Naung Win, THa Put Su, Pan Pin Kone, Hin Khwet Aing, Mon Taing, Kyun Khin Gyi and Yar Taw G
	2. Meet with livestock farmers	Hta Naung Win Village, Nyaung U	Yar Taw Gyi, Mone Taing, Hta Naung Win
	3. Meet with MSME participants	Hta Naung Win Village, Nyaung U	Nga Paing, Hta Naung Win
	4. Meet with MSME	Chaung Shay Village NyaungU	Chaung Shay
1. 11.2023	1.Meet with 5KW Solar Users Group	Phone Interview	Ba Lon Village, Myingyan
	2.Meet with 5KW Solar Users Group	Phone Interview	Chaung Lal Village, Myingyan
	3.Meet with 3KW Solar Users Group	Training hall, Nyaung U	Tha Nyit Kan Village, Myin Gyan
2.11.2023	1.Meet with 3KW Solar Users Group	Gant Gar Village, Nyaung U	Gant Gar Village, Nyaung U
	2.Meet with 5KW Solar Users Group	Kya Oh Ywa Thit, Nyaung U	Kya Oh Ywa Thit, Nyaung U
	3.Meet with 5KW Solar Users Group	Yay Twin Gyi, Nyaung U	Yay Twin Gyi, Nyaung U
	4.Meet with 3KW Solar Users Group	Yay Twin Gyi, Nyaung U	Yay Twin Gyi, Nyaung U
	5.Meet with 5KW Solar Users Group	Mee Laung Phyar, Nyaung U	Mee Laung Phyar, Nyaung U
3.11.2023	1. Meet with MSME participants	Kan Ni Gyi, Nyaung U	Kan Ni Gyi, Nyaung U
	2.Meet with the farmers (Agriculture)	Myay Ne' Gyi Village, Nyaung U	Myay Ne' Gyi, Byu Gyi

	3. Meet with 10KW Solar Users Group	Myay Ne' Gyi Village, Nyaung U	Myay Ne' Gyi
4.11.2023	1.Meet with 3KW Solar Users Group(Surface water)	Myay Ne' Lay Village, Nyaung U	Myay Ne' Lay
	2.Join the Value addition training and meet with Impact Hub	Trainng Room, Nyaung U	Nyaung U
	3.Meet with Value Addition participant	Thant Sin Kyal Village, Nyaung U	Thant Sin Kyal
	4.Meet with Value Addition participant	Pyun Village, Nyaun U	Pyun
	5.Meet with Livestock SLAW group	Nyaung Pin Kan , Nyaung U	Nyaung Pin Kan
	6. Meet with Cesvi field office staff	Nyaung U,	Nyaung U

5.5. Interview protocols

The table below provides an overview of the questions that will be asked during the interviews and focus group discussions and to whom they will be asked. Prior to conducting the interviews/focus group discussions, they will be separated into specific interview protocols by type of stakeholder. Some questions may be rephrased to suit the type of stakeholder being interviewed.

Table 9. Interview protocols

Questions	UNDP BRH	UNDP COs	NCDDS, National NGOs	Provincial governments, CSOs	Other development	Beneficiaries
Introduction						
What is your position?	X	X	X	X	X	X
How long and how have you been involved with the project?	X	X	X	X	X	X
1. Relevance						
1.1 To what extent was the project aligned with and contributed to SDGs?	X	x			X	
1.2 To what extent was the project in line with and contributed to the UNDP priorities at the global, regional and national levels?	X	X				
1.3.1 To what extent was the project aligned with and contributed to the countries' strategies and priorities?		X	X		X	
1.3.2 To what extent have national stakeholder been involvement in the design and implementation of the project?		X	X			
1.4.1 To what extent does the project respond to subnational needs in the project intervention area?			X	X		X
1.4.2 To what extent have relevant regional and municipal stakeholders been included during project implementation? Were women, persons with disabilities and vulnerable groups involved?			X	X		X
1.5.1 How clear and well-integrated were the project's objectives, outcomes, outputs and activities?	X	X	X			

Questions	UNDP BRH	UNDP COs	NCDDS, National NGOs	Provincial governments, CSOs	Other development	Beneficiaries
1.5.2 How feasible and realistic were the project objectives, outcomes and outputs within the available budget and time frame?	X	X	X			
1.5.3 To what extent did the project design take into account human rights, as well as gender inequalities and differentiation?	X	X	X			
1.6. 1 To what extent has the intervention been coordinated with other donors to seek complementarities and synergies?	X	X	X	X	X	
1.6.2 Have there been any Synergies or overlap between the project and other existing initiatives during project implementation?	X	X	X	X	X	X
3. Effectiveness						
3.1.1 To what extent did the project achieve its intended objectives?	x	X	x	X		
3.1.2 To what extent did the project achieve the expected outcomes?	X	X	X	X		
3.1.3 What was the quality of the outcomes achieved?	X	X				
3.1.4 To what extent did the project achieve the planned outputs?	X	X				
3.1.5 What has been the quality of the products provided/ activities developed?			X	X	X	
3.2 Have unexpected results been achieved beyond what was planned? Kindly describe them	X	X	X	X		X
3.3.1 To what extent has the project helped overcome the barriers for a production and climate resilient agriculture sectors that uses PWS?	X	X	X	X	X	X

Questions	UNDP BRH	UNDP COs	NCDDS, National NGOs	Provincial governments, CSOs	Other development	Beneficiaries
3.3.2 To what extent has the project improved the situation of women, people with disabilities and other vulnerable groups?	X	X	X	X	X	X
3.4 What external factors have contributed to achieving, or not, intended country/regional programme outputs and outcomes?	X	X				
4. Efficiency						
3.1 Risk management						
How were risks identified and monitored?	X	X	X			
What was the quality of the risk mitigation strategies developed and were they sufficient?	X	X	X	X		X
3.2 Adaptative management						
3.2.1 Did the project undergo significant changes as a result of changes in context and /or recommendations from workshops, the steering committee or other review procedures	X	X	X			
3.2.2. What follow-up actions (if any) and/or adaptive management measures have been taken in response to progress reports (PPRs)?	X	x				
3.2.3 How were lessons from the adaptive management process documented, shared with and internalised by key partners?	X	X	X	X	X	
3.3 Financing y cofinancing						
3.3.1 Is there a difference between planned and actual expenditure, and why?	X	x				
3.3.2 Was any cofinancing raised?	X	X	X	X		
3.3.3 Were the accounting and financial systems established for the management of the project and the production of accurate and timely financial information adequate?	X	x	X			
4.2.4 Have financial resources been used efficiently? How? If not, why? How could financial resources have been used more efficiently?	X	X	X		X	

Questions	UNDP BRH	UNDP COs	NCDDS, National NGOs	Provincial governments, CSOs	Other development	Beneficiaries
3.4 M&E system						
3.4.1 How is the M&E system used? Is it effective?	X	X	X			
3.4.1 To what extent did project monitoring take into account human rights and disability, as well as gender inequalities and differentiation?	X	X	X			
3.4.2 How was the logical framework used during implementation?	X	x				
3.5 Institutional arrangements						
3.5.1. To what extent were effective partnerships for project implementation established with relevant stakeholders at different levels?	X	X	X	X	X	
3.5.2 To what extent were relevant stakeholders involved in the implementation and monitoring of the project (through information sharing and consultation)?[92] Were women and vulnerable groups involved in implementation?	X	X	X	X	X	
3.5.3 Did you have an active role in project decision-making that guide implementation?			X	X	X	X
3.6 Management processes						
3.6.1 Were roles and responsibilities clearly defined?		X	x	X	X	X
3.6.2 What is the quality of project implementation?		X	X	X		
3.6.3 What is the quality of project execution?	X			X		X
3.7. Work planning						
3.7.1 Have there been delays in execution? How many, in which areas and why?	X	X	X	X		

[92] This covers To what extent was the project management structure as outlined in the project document efficient in generating the expected results? , and To what extent have different stakeholders been involved in project implementation?

Questions	UNDP BRH	UNDP COs	NCDDS, National NGOs	Provincial governments, CSOs	Other development	Beneficiaries
4. Sustainability						
5.1.1 Did the project devise a sound sustainability strategy, did it include a specific exit strategy, and did it implement it	X	X	X			
5.1.2 Which legal, policy and regulatory frameworks and governance frameworks could affect the sustainability of project results? How?	X	X	X	X	X	
5.1.3 Which social and political conditions could affect the sustainability of projects results? How? Is there enough ownership?	X	X	X	X	X	X
5.1.3 Which technical conditions could affect the sustainability of projects results? How? Is there enough technical and technological capacity?	X	X	X	X	X	
5.1.4 Are financial resources enough to sustain the projects results?	X	X	X	X	X	X
5.1.6 Are there biophysical risks to the sustainability of the project results?	X	X	X	X	X	X
General						
What lessons can be learned from the design and implementation of this project?	X	X	X	X	X	X
Do you have any recommendations?	X	X	X	X	X	X

5.6. Direct observation fiche

Date of visit:

Location:

Name of intervention:

Type of intervention:

Year of intervention:

Partners:

Cost/Amount mobilized:

Relevance of the intervention:

Type of benefits provided:

Contribution to gender equality, human rights and disability[93]:

Economic performance/impact:

Complementary services provided:

Likely sustainability and enhancing and hindering factors:

Any other issues:

[93] Involvement of women, persons with disabilities and other vulnerable groups in project activities and project related decision-making bodies; evidence of the project addressing underlaying causes of inequality and discrimination.

5.7. ROK Project results framework

Table 10. ROK project results framework

I. RESULTS FRAMEWORK1

	Intended Outcome as stated in the UNDAF/Country [or Global/Regional] Programme Results and Resource Framework: **Outcome 1:** Advance poverty eradication in all its forms and dimensions **Outcome 2:** Accelerate structural transformations for sustainable development
	Outcome indicators as stated in the Country Programme [or Global/Regional] Results and Resources Framework, including baseline and targets: **Outcome Indicator 1.3** Number of country-led measures accelerated to advance women's economic autonomy and independent livelihoods. (SDG 5) **Baseline 0 Target: 6** **Outcome indicator 2.2** Number of countries that have communicated the establishment or operationalization of an integrated policy/ strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low green gas emissions development in a manner that does not threaten food production. (Strategic Plan 2.5, SDG 13.2.1) **Baseline: 0 Targets: 8**
	Applicable Output(s) from the UNDP Strategic Plan: 1.4.1. Solutions scaled up for sustainable management of natural resources, including sustainable commodities and green and inclusive value chains
	Project title and Atlas Project Number: Promoting the use of solar technologies for agricultural and rural development in Cambodia and Myanmar

EXPECTED OUTPUTS	OUTPUT INDICATORS[1]	DATA SOURCE	BASELINE		TARGETS													DATA COLLECTION METHODS & RISKS
			Value	Year	*Year 1*				*Year 2*				*Year 3*					
					Q1	*Q2*	*Q3*	*Q4*	*Q1*	*Q2*	*Q3*	*Q4*	*Q1*	*Q2*	*Q3*	*Q4*		
Output 1: Increased smallholder farm productivity through adoption of innovative agricultural technology and an improved value chain.	% of farmers who confirm they received services and products in a timely manner	*Survey*	0	2020	0	0	0	0	10	10	30	0	50	65	75	75	75	Survey
							15	10		10	20	20		10	15		80	
	# of agreements/MOU between farmers and agriculture/livestock businesses and input suppliers	*Monitoring data*	0	2020	0	0	0	0	0	0	5	10	15	20	20	20	20	*Monitoring data, partnership agreements*
							1			2				2			5	
	% increase in productivity of small hold farmers	*Survey*	*TBD*	*2020*	0	0	0	0	0	0	5	10	15	20	20	20	20	*Online Survey*
								10				20				20	20	
	% increase in income of small-hold farmers	*Survey*	*TBD*	*2020*	0	0	0	0	0	0	5	10	15	20	20	20	20	*Survey*
								5				10			10		10	
	# of farmers and entrepreneurs accessing financial services, start-up capital and insurance of whom 50% are women (MMR only)	*Survey Monitoring data*	*0*	*2020*														*Survey Monitoring data*
												30			*30*		*60%*	
	% increase in the use of mobile money of which 50% are women (MMR only)	*Survey Monitoring data*	*TBD*															*Survey Monitoring data*
									5			10			15		15	
	Number of micro, small and medium-sized enterprises utilizing supplier development platforms for inclusive and sustainable value chains (SP IRRF indicator 1.4.1)	*Survey*	*0*	*2020*	0	0	0	0	0	5	0	10	20	30	30	30	30	*Survey*
											20				30		50	
		Survey	*TBD*	*2020*	0	0	0	0	10	10	30	30	50	65	75	75	75	

Output 2: Increased adoption and utilization of solar water pumping in the agriculture sector.	% of farmers who confirm increased and timely access to water											10			15		25	*Survey*
	Number of SWPs managed by women-led community groups (% of total)	*Monitoring data*	*0*	*2020*	0	0	0	0	0	10	10	20	20	30	30	50	50	*Monitoring data*
											20			20			40	
	# of agreements/MOU/partnerships developed between SWP companies and business groups	*Monitoring data*	*0*	*2020*	0	0	0	0	0	0	5	10	15	20			20	*Monitoring Data*
												1		1			2	
	Satisfaction level of water user group on the quality of after installation services	Survey	*TBD*	*2020*	0	0	0	0	0	10	30	0	50	65	75	75	75	Survey
												50		80			80	
	% cost reduction from alternative water storage technologies (MMR)	Survey	*TBD*	*2020*														Survey
												20			30		30	

5.8. Pledge of ethical conduct in evaluation signed by evaluators