Final Evaluation of Climate Smart Agriculture Roll-Out in Siem Reap and Oddar Meanchey implemented by ADDA, READA, SMUAC and CIDO

(Final Evaluation Report)

Report submitted by

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List of abbreviations

AC	Agricultural Cooperative
ADDA	Agricultural Development Denmark Asia
CSA	Climate Smart Agriculture
CIDO	Community based Integrated Development Organisation
CDP	Community Development Project
CIP	Commune Investment Planning
CISU	Civil Society in Development
CP	Community Professional
CSA	Climate Smart Agriculture
DF	District Facilitator
DACP	Department of Agricultural Cooperative Promotion
DIW	District Integration Workshop
EAC	Empowering Agricultural Cooperative and Civil Society in Siem Reap and Oddar Meanchey
FGDs	Focus Group Discussions:
GHG	Greenhouse Gas
MAFF	Ministry of Agriculture, Forestry and Fisheries
LNGOs	Local Non-Governmental Organization
OMC	Oddar Meanchey Province
OMCAUAC	Oddar Meanchey Akphiwat Union of Agriculture Cooperative
PACU	Provencal Agricultural Cooperative Union
PDoWA	Provincial Department of Woman Affair
PGC	Participatory Group Certificate
PDAFF	Provincial Department of Agriculture, Forestry and Fisheries
PDoWA	Provincial Department of Women Affair
RCEDO	Rural Community and Environmental Development Organisation
READA	Rural Economic and Agricultural Development Agent
SMUAC	Siem Reap Meanchey Union of Agricultural Cooperatives.
SR	Siem Reap province.

Executive Summary

This report evaluates the Climate Smart Agriculture (CSA) Roll-Out in Siem Reap and Oddar Meanchey implemented by ADDA, READA, SMUAC and CIDO**.** The objective of this evaluation is to assess implementation to date in identifying successes and challenges of the project management focusing on relevance, effectiveness, impact and sustainability in accordance with the ADDA Evaluation Guideline.

The evaluation employed quantitative and qualitative methods, derived from the relevant project documents, comments from a wide range of stakeholders including CSA staff, rice farmers, vegetable farmers, rice agricultural cooperative committees, vegetable agricultural cooperatives committees, SMUAC committees, PDAFF, PDoWA, PACU, CIDO, commune councils in the two project provinces (Siem Reap and Oddar Meanchey).

The summary results on the four key evaluation frameworks: relevance, effectiveness, impact and sustainability found that:

The CSA technique is highly relevant for rice, vegetable and cassava farmers. Its technical approach to the problems faced by farmers addressed was appropriate. The results have contributed to the achievement of the purpose and objectives of the farmers and the project. The design of the project in terms of land preparedness, seed use, crop spacing, water control, fertilizer use was technically sound. The policy dialog component is assessed relevant with impact.

Farmers within cooperatives and demonstration farms are widely adopting CSA strategies to enhance vegetable and rice yields, thereby increasing productivity and household income. The CSA Roll Out project has contributed to the agricultural development of rice and vegetable farmers in target groups in various forms including increasing productivity, adaptation to climate change, reducing the vulnerability to environmental risks, improving market linkages and CSA policy dialogues. All CSA project staff had a clear comprehension of the CSA concept and the objectives of the projects. The CSA protocol and training design were generally appropriate and effective for farmers. Local authorities collaborated well with project staff and recognized the importance of CSA to cope with the climate change

The strategy promoted by the CSA will most probably be adopted permanently by rice, cassava and vegetable farmers. Most AC demonstration farms and AC members have used CSA techniques and sustained directly through the project and there are some indirect effects to other non-AC farmers to use CSA.

The key findings of successes and challenges are summarized below:

The main project indicators achieved up to date (Dec 2023) is summarized as follows:

- By Dec. 2021, 27 ACs applied for CSA demonstrations (Achieved 135% against the target of 20 ACs) while 24 ACs successfully selected on their proposals. Achieved 88% against the targeted rate of 75%.
- 144 of 150 CSA demos conducted, 110 of which on rice, 30 on vegetable and 4 on Cassava. Achieved 96%

- 144 of 150 CSA demo accomplished (110 on rice, 30 on vegetable and 4 on Cassava)
  3,575 of total 3,600 farmers participated in 144 CSA field schools adopted CSA practice. Achieved 89% of farmers adopted. While the project implementation was delayed because of COVID-19 it is projected that the project will reach the stipulated CSA demonstrations in vegetables and pilot tests in Cassava, while the number of rice demonstrations will be slightly lower than projected. Totally 144 CSA equal to 96% demonstrations (of totally 150 CSA demonstrations) are expected before termination of the project. Consequently, a much higher number of farmers are expected to adopt CSA techniques before termination.
- Farmers practiced CSA on vegetable has increased yield 71% vs farmer practice (14.51 t/ha to 24.82 t/ha). Farmers practiced CSA on dry season has increased yield from 3.61 tons/ha to 4.77 tones/ha while wet season rice yield from 2.26 to 3.71tons/ha. The increased yield for vegetable and rice production using CSA techniques reduces 58% GHG emission per kg of product produced in rice wet season of medium rice variety of Phkarom Duol and 73% of modern rice varieties of Senkraub 01 and OM 5451 (IRRI and similar GHG modelling).
- CSA vegetable products sold at 25% higher price due to less use of pesticide.
- A Memorandum of Understanding (MoU) was signed in May 2022 between ADDA-READA and the Cambodian Agricultural Cooperative Alliance (CACA) to enhance strategic planning, lobbying for priority climate change requests, upgrading irrigation systems, and improving the quality and pricing of CSA agricultural products and inputs. This MoU is seen as a crucial instrument for integrating CSA into future investment strategies and programs. The integration of Climate-Smart Agriculture (CSA) into national, provincial, and local programs and investment plans necessitates a continuous and dedicated effort from rights holders.
- Two position papers have developed: 1. Accessible Irrigation System for Agricultural Cooperatives and their members.2. Better earmarking of funds for mitigation and adaptation measures mitigating climate change.
- 283 priorities of CSA have been integrated into CIP. 99 of which have been addressed; which is equal to 34 addressed%.

Top common use of CSA tool by farmers including:

(1) Timeliness in field operations, (2) Recognizing the importance of proper land leveling to ensure even water distribution, (3) Applying best practice seed broadcasting methods for efficient germination and seed conservation, (4) Procuring high-quality, climate-adapted seed varieties, (5) Using seeds with high germination rates, (6) Implementing two to three rounds of soil cultivation/ploughing, (7) Preparing levelled land for ideal growth conditions, (8) Understanding various weed control methods, (9) Applying minimal and safe herbicides for effective weed management (10) Using rice straw for mulching, (11) Determining the best harvest time for maximum yield and reduced post-harvest losses, (12) Practicing more efficient water management techniques.

The technical CSA staff, PACU and AC committees are skilful and knowledgeable; their tasks were properly defined and they are active in supporting the PACU, AC committees and AC farmers.

The project contributed to the agricultural development of rice, cassava and vegetable farmers in target groups in various forms including increased productivity, reduced vulnerability to environmental risks, improved market linkages and facilitated CSA policy dialogues. The CSA protocol and training design were generally appropriate and effective for farmers. Local authorities collaborated well with project staff and recognized the importance of CSA to cope with the climate change

Key challenges of CSA Intervention and Adaptions:
Farmers faced challenges in implementing the whole set of CSA protocol due to limited capital to purchase farm inputs and agricultural equipment such as drip irrigation land seed nursery.

Net house for vegetable nursery was expensive for some farmers, however, simple net vegetable houses using local material was very beneficial, as it protected the seedlings from pests, diseases and extreme weather conditions, and improved the quality and quantity of vegetable seedings and production.

There were challenges in some of CSA demonstrations regarding insect and disease controls. Flush flood destroyed the site in the middle of few demonstrations. Other difficulties included limited water availability in dry season and excessive rainfall in rainy season, which limited the farmers' ability to grow vegetables.

There were some challenges regarding how to market the CSA products, because farmers need to compete with imported products from Thailand and Vietnam.

The project had some implementation difficulties during COVID-19 resulting in delays of some trainings and field demonstrations, but the schedule was readjusted, field activities were intensified after lifting of the most severe COVID-19 restrictions and the project implemented with only minor delays.

Recommendations

Recommendations are given in consideration of the limitations imposed by the prevailing administration context, production, advocacy and market linkages challenges of the project. Key recommendations made by the evaluation team include:

Improving Sustainability CSA Technical Supports: To ensure effective demonstration and adoption of CSA practices, EDRO project continues dealing with AC capacity building and market linkage, while the CSA project mainly uses ACs as a vehicle for wide spreading of CSA techniques. The integration of Climate-Smart Agriculture (CSA) into national, provincial, and local programs and investment plans necessitates a continuous and dedicated effort from rights holders. External investments are necessary which is be promoted by policy dialogs/advocacy in short as well as a longer-term perspective.

Application of IPM principles: It is recommended that CSA trainers and farmers continually refine their understanding and application of IPM principles. Regular updates to CSA guidelines can provide the latest best practices for IPM, ensuring farmers stay abreast of the most effective pest control methods. This continual

learning and adaptation will enhance the overall effectiveness of the CSA approach, leading to healthier crops and higher yields.

Establishing Participatory Group Certificate (PGC) for CSA Products: To enhance the market access and income of small producers, it is recommended to establish PGC, in which PACU playing a leading role in facilitating the process with the ACs and their members. PGC should promote standardised production and sustainability of agricultural products. Responsible PCG and AC committee members should play an active role in market facilitation, and represent the interests of the AC members. All decision making must be made by group members and every member should respect their regulation.

Capacity Development for PGC: Further support should be provided to PGC by focusing on marketing and financial literacy by providing more trainings to the committee and members. Also training in other areas including strengthening leadership and planning skills for committee members of ACs should be given.

Considering Contract Farming: Contract farming would be a good mechanism for connecting AC members to lower input costs and secure market prices. Uniform product standards, farmers continuous supply of products according to agreements, competitive pricing are prerequisites for successful contract agreements.

1. INTRODUCTION

ADDA is a Danish NGO established in 1996 which core qualification lies within rural development, development of and support to local civil society structures, advocacy and development of the primary agricultural sector: cultivation, selection of products, organic farming and marketing strategies. Its main purpose is to encourage rural development and improved living conditions for the poorest sectors through support to the establishment of sustainable agriculture and establishment/support of local civil societies.

The project: “Climate Smart Agriculture Roll-Out (CSA) in Siem Reap and Oddar Meanchey (CSA)” is implemented by ADDA, READA, SMUAC and CIDO from 2021 to 2023. The project uses Best Climate Smart Agricultural practices to demonstrate on farmers’ fields under the responsibility of their own democratic rural organisation: The Agricultural Cooperatives. This is to secure (i) CSA ownership by the poor farming community and sustainability, (ii) a hands-on approach, (iii) linkage to CSA input supply and markets, (iv) microcredit schemes and last - but not least – (v) a voice mainstreaming appropriate CSA practices into programs and investments plans of duty bearers. ACs are responsible for all practical implementation aspects & training elements at field level under overall supervision of LNGO Subject Matter Specialists and other resource persons of the Action.

The purpose of the project intervention is to support small farmers by increasing their resilience to climate change and environmental shocks through the theory of change by supporting PACUs and ACs delivering appropriate CSA services to their members in terms of CSA input supply, CSA market linkage, CSA agricultural and technical training.

The overall project objective is resilience of poor farmers to climate change strengthened by adoption of and institutional support to Climate Smart Agricultural (CSA) production. The project consists of three immediate objectives: (i). Improve productivity and reduce the vulnerability to environmental risks from small producers through Climate Change adaptation technologies (Climate Smart Farming). (ii) Improve linkage to markets for Climate Smart Agricultural products of small holders which increases income from Climate Smart Agricultural production. (iii) Dialogue and mainstreaming of CSA roll-out in to programs and investment plans at national and provincial levels in Cambodia.

The key indicators of the project implementation as followings:

i. Enable farmers to adopt CSA farming, thereby enhancing productivity and minimising climate change risks.
   - December 2021; At least 20 ACs have applied to become CSA demonstration host; 75% have successfully outlined and defended their proposal and were approved for support.
   - December 2023; 120 CSA best practice on rice production (or cassava in OMC) and 30 CSA best practice demonstrations on vegetable have been conducted on farmers’ field by ACs

- December 2023, at least 3600 Farmers have adopted main Climate Smart Agricultural practices, which has improved productivity by 30 %

ii. Small producers have improved linkage to markets for CSA products

- By May 2022, 100 tons of cereals and 50 tons of vegetables is produced according to best CSA practice and sold at a higher price.
- December 2023, 30 % of at least 12.000 targeted beneficiaries have increased their income 30% from Climate Smart Agricultural production.

iii. Dialogue and mainstreaming of CSA roll-out

- December 2022, documents and arguments for a better earmarking of national funds for Climate-Smart Agriculture in Cambodia is developed.
- A strong position paper for climate smart agriculture in Cambodia developed.
- December 2023, 200 CSA priorities of farmers have been integrated into CIP and 50% have been addressed.
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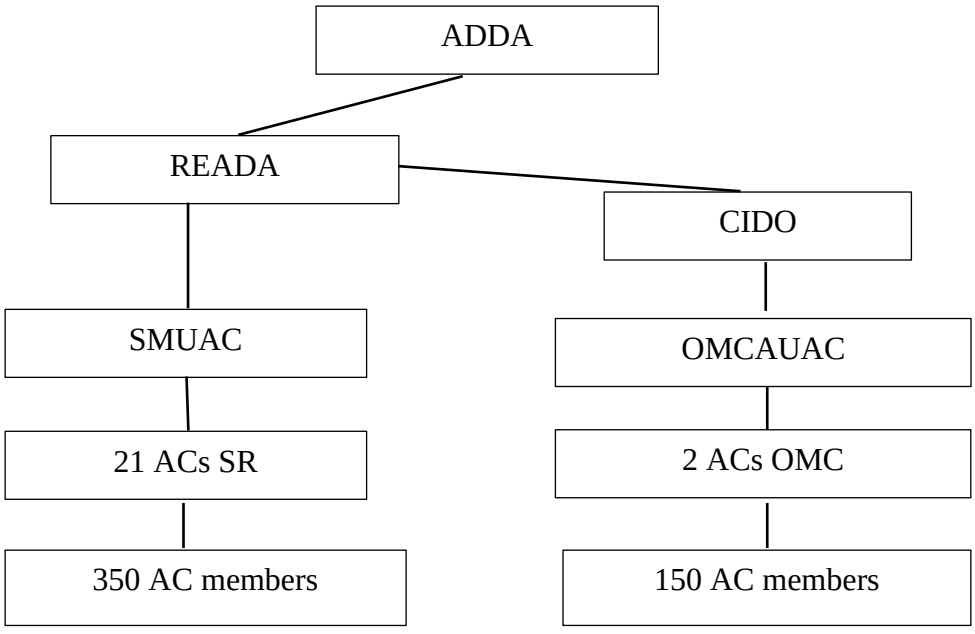
The CSA roll-out is based on a competitive approach, where ACs are invited to apply for support to implement demonstrations on “Best Climate Smart Agricultural practices” on farmer fields interlinked with a series of training sessions during the growing season, CSA input and markets linkage and advocacy for CSA. Any AC in SR and OMC is invited to apply for CSA supports.

ACs receive CSA techniques and financial supports from the project to (i) Demonstrate profitable CSA at farmers field, (ii) Improve linkage to markets for CSA production, and (iii) Facilitate CSA farm inputs and credit facilities.

Key actors in this project delivery process and their interaction in the project implementation as show in figure 1.

Figure 1. Key actors and their interaction of the project implementation



The main roles of ADDA in implementing the project are: i. implement overall financial management and responsibility towards donor; ii. carry out specific CSA training activities and capacity development of LNGOs and PACUs to ensure CSA accountability; iii. conduct Steering Committee Meetings and project learning workshops involving all partners and other relevant actors; iv. M & E and project dialog in accordance with guidelines and agreements and facilitate Memorandum of Understanding with the Government of Cambodia & partners

READA is lead implementing LNGO. READA is capacitating/assisting SMUAC in Siem Reap, whereas CSA is implemented in close collaboration between READA and CIDO in OMC to capacitate the PACU and ACs in OMC on Climate Smart Farming. READA is assisting SMUAC in Siem Reap to capacitate ACs, build further capacity of SMUAC itself and transferring knowledge from SR to CIDO as well as associated LNGOs in OMC especially RCEDO building CSA capacity and advocacy skills of the LNGOs, ACs and the PACU.

The objective of this evaluation as described in the ToR is to assess implementation to date in identifying successes and challenges of the project management unit against its project implementation objectives and indicators above and provide recommendations how to achieve the project objectives.

2. EVALUATION METHODOLOGY

The key approach of this evaluation employed an objective-based evaluation and based upon the various stakeholders who involvement with the project. The evaluation is based on quantitative and qualitative information derived from the relevant project documents, informed comments from a wide range of stakeholders including CSA staff, rice farmers, vegetable farmers, rice agricultural cooperative committees, vegetable agricultural cooperatives committees, SMUAC committees, PDAFF, PDoWA, PACU, commune committees. Impact tracing mapping framework and quotes of the respondents will be used throughout the report.

Structure of the Evaluation

The structure of the evaluation focusing on four key evaluation frameworks: relevance, effectiveness, impact and sustainability and key questioned are shown below:

i. **To assess the relevance**: Relevance is whether the design of the project is sound with regard to targeting the real needs and problems of the project beneficiaries. It is concerned with the extent to which actual outcomes match the needs and priorities as perceived by the beneficiaries.
ii. **To assess the effectiveness:** This is the extent to which project outcomes achieve stated objectives and the extent to which actual outcomes match planned outcomes. It also assesses the extent to which the crosscutting issues of poverty, gender and advocacy issues are being addressed
iii. **To assess impact:** Achievements in relation to the planned objectives, results and indicators.
iv. **To assess the sustainability**: This is the extent to which any changes produced by the project can continue in the target population after the project has ended.

The project Documentation Review:

The following secondary documents reviewed during the assignment include:

- Climate smart agricultural roll out
- CSA baseline survey report
- CSA Midterm report
- CSA monitoring report
- Case study reports
- Internal Impact assessment
- CSA training guideline
- Other relevant materials

Selection of evaluation respondents

The evaluation is based on qualitative information derived from informed comments from a wide range of stakeholders. Purposive and snowball samplings is used for the evaluation and respondents' selections.

Purposive Sampling for evaluation audiences:

- Using ACs typology defined by the project to select small, medium and large size of ACs and farmers. Then use snowball sample.
- List of ACs and farmers

Snowball Sampling:

- Explore in-depth cases and issues (relevance, effectiveness, what work and not work)
- Key informants recommended by project official and FGD groups
- In-depth and insightful community knowledge and experiences
- Building on resources of existing networks

List of key evaluation questions and respondents is on annexes.

Data collection methods

Interviews/Meetings: The Team will hold interviews with the CSA staff, SMUAC committees, PDAFF, PDoWA, PACU and commune committees involved witch the project.

Focus Group Discussions: FGDs will be conducted for each of the selected rice farmers, vegetable farmers, agricultural cooperative committees, vegetable agricultural cooperatives committees focusing on successes, challenges and lessons learned in implementing the project.

Interviews with Key Informants. Field visits to the project areas of implementation in both SR and OMC province which focus more sample in SR. Key informant interviews will be conducted to obtain qualitative (and if available, quantitative) information on the evaluation issues. These interviews will provide in–depth information on successes and challenges that will allow the Evaluation Team to address the project's relevance, effectiveness, impact and sustainability.

Use of Short Case Studies: Two case studies of AC and farmer in the project areas to establish the case history of field demonstration and the beneficiary to get more information on the success and challenges and how she/he thinks the future of CSA is going to be.

3. How project objectives have been achieved

This section presents research findings of the study. Section 3.1 gives an overview of the CSA Roll-Out through result mapping approach. Section 3.2 assesses CSA approach relevant. Section 3.3 assess the extent of achievement and focus on: i. Enable farmers to adopt CSA farming, thereby enhancing productivity and minimising climate change risks; ii. Markets linkage for CSA products and iii. Policy dialogue and factors affecting mainstreaming of CSA roll-out and 3.4 assess CSA sustainability.

3.1 Result mapping

This section provides an overview of the CSA Roll-Out in Siem Reap and Oddar Meanchey through result mapping approach. The logical flow of the mapping is from ***Inputs*** (cash, staff, in-kind expenditures for rice and vegetable demonstrations) to **Activities** of mechanisms of achievement (what the project does in terms of CSA trainings, farm demonstration, on farm supports, monitors by using those inputs) ***Outputs*** (What the project produces as a result of the undertaken activities) and ***Outcomes*** of the projects (changes in CSA practices or policy that result from adoption of the outputs by farmers).

The source of funding of the project is from The Civil Society in Development (CISU), who in turn granted support to the CSA proposal by the partners under the overall responsibility of ADDA. The fund was used to cover costs of staff, various expendable supplies, and farm inputs for CSA rice and vegetable demonstrations. The project uses staff and labours from ADDA, READA, CIDO, SMUAC, ACs, provincial agriculture officers, commune council members and farmers. Expendable supplies consist of, for example, seeds, fertilizers, and other farm demonstration materials. The project provides CSA training and CSA demonstrations for rice, cassava, and vegetables in both provinces, but mainly in Siem Reap as main roll-out province, while Oddar Meanchey is addressed as a pilot.

The review of project documents and information from key informant interviews has revealed that the project undertook many activities to achieve their stated objectives including on supporting follow-up activities to make sure that CSA demonstrations and farmers fully follows the CSA guidelines. The project has improved productivity of rice, cassava and vegetable and reduced the vulnerability to climate change in terms of better resilience to for instance, drought. It increases farmer income by access to markets. The project also has published and used three position papers for policy dialogues and mainstreaming of CSA into programs and investment plans at national and provincial levels in Cambodia. However due to Covid 19, some CSA demonstrations were delayed but cached up after lifting of the Covid 19 restrictions.

The project has enhanced capacity of the involved local NGOs, ACs and farmers on CSA techniques. It has contributed to dialogue and knowledge sharing in the forms of position papers and lessons learned from the project.

The following section, therefore, assesses the CSA approach and relevance.

3.2 Assessing CSA approach and relevance

The CSA technique is highly relevant for rice, vegetable and cassava farmers. Its technical approach to the problems faced by farmers addressed was appropriate. The results have contributed to the achievement of the purpose and objectives of the farmers and the project. The design of the CSA guidelines and demonstration project in terms of focus on land preparedness, use of better seed and varieties, crop spacing, water control, fertilizer and pesticide use was technically sound. Some examples of effective strategies include adequate straining, supporting CSA demonstrations, supporting follow-up activities and linkage to market. It has envisaged interesting and effective approaches to improve vegetable and cassava production. However, the implementation of the CSA revealed some limitation to deal with insect and diseases, indicating that efficacy can be further improved with better pest control.

The program's Integrated Pest Management (IPM) strives to prevent pests or damage using various strategies, including biological, chemical, physical, and crop-specific methods to cultivate healthy crops with minimal pesticide use. Hence, CSA trainers, and farmers are advised to continually refine their understanding and application of IPM principles, using regularly updated CSA guidelines for best IPM practices. The provincial agricultural department and local NGOs has embraced CSA approaches as important techniques to improve agriculture production as well as to address with climate change. CSA also including linkage to markets, which is very important for farmers to sell their produces, because farmers often face market issue especially when more products are on the market and compete with cheap import product.

The following section assesses the achievement of stated objectives of the project.

3.3 Assessing achievement of the project objectives

This session assesses the extent of achievement and focus on: i. Enable farmers to adopt CSA farming, thereby enhancing productivity and minimising climate change risks; ii. Markets linkage for CSA products and iii. policy dialogue and factors affecting mainstreaming of CSA roll-out

The objectives of the project were classified by the three mechanisms of achievement and status of achievement. The classification was done after thorough review of existing project documents and information from key informant interviews. Totally, the project has three main objectives consisting of 9 indicators.

A coding system was developed to assess the level of accomplishment of each indicator of the objectives. The indictor was labelled “fully achieved” if the available evidence revealed that obtained outputs corresponded to the stated indicator and that there was no room for further attainment of the outputs. On the other hand, the label “not fully achieved” was used when the available evidence suggested that the outputs could have been further enhanced. In case of no output at all, the objective would be labelled “not achieved” at the time of evaluation which was 8 months before project termination.

a. Enable farmers to adopt CSA farming, thereby enhancing productivity and minimising climate change risks

Reviewing the project key indicators and the results, Table 3.1 shows almost all key indicators "Fully Achieved" as plan excepted Indicators: Farmers have adopted main Climate Smart Agricultural practices is "Not fully achieved" 3.1 See details for the project achievement up to date 31 December 2023.

Table 3.1 Project objectives, Indicators and Status of Achievement (Up to date: 31 Dec 2023)

Objectives	Indicators	Results Achieved up to date: 31 July 2023.	Status of achievements
1.Improve productivity and reduce the vulnerability to environmental risks from small producers through Climate Change adaptation technologies	-December 2021; At least 20 ACs have applied to become CSA demonstration host; 75% have successfully outlined and defended their proposal and were approved for support.	- 27 ACs have applied to CSA demo - 26 ACs have successfully on their proposals	Fully Achieved Fully Achieved
	-December 2023; 120 CSA best practice on rice production (or cassava in ODM) and 30 CSA best practice demonstrations on vegetable have been conducted on farmers' field by ACs	- 144 of 150 CSA demos have been conducting and accomplished (110 on rice, 30 on vegetable and 4 on Cassava)	*Not fully achieved due to Covid 19.*
	-December 2023, at least 3600 Farmers have adopted main Climate Smart Agricultural practices, which has improved productivity by 30 %	- 3,575 of total 3,600 farmers participated in 144 CSA field schools have adopted CSA practice. *(Average 89% improved productivities)* - Farmers practiced CSA on rice in both wet and dry season has increased yield 46% vs farmer practice (2.84 t/ha to 4.16 t/ha). - Rice in wet season on Phka Ramduol variety has increased yield 64% from 2.26tons/ha to 3.71tons/ha and using CSA techniques reduces 58% GHG emission per kg of product produced - Rice in dry season on OM 5451 and Senkraob01 have increased	*Not fully achieved due to Covid 19.* Fully Achieved Fully Achieved Fully Achieved Fully Achieved

		yield 32% from 3.61tons/ha to 4.77tons/ha and reduces 73% GHG emission per kg of product produced. - Farmers practiced CSA on vegetable has increased yield 71% vs farmer practice (14.51t/ha to 24.82 t/ha)	Fully Achieved
(ii) Improve linkage to markets for Climate Smart Agricultural products of small holders which increases income from Climate Smart Agricultural production	-By May 2022, 100 tons of cereals and 50 tons of vegetables is produced according to best CSA practice and sold at a higher price.	- 162 tons of CSA rice is produced within 39.51 ha - 106 tons of CSA vegetable is produced within 4.25 ha. - CSA products sold at 25% higher price vs farmers practice.	Fully Achieved Fully Achieved Fully Achieved
	-December 2023, 30 % of at least 12.000 targeted beneficiaries have increased their income 30% from Climate Smart Agricultural production	In average, the yield of CSA practice is increased 66% and sold at higher price of 25%	Fully Achieved
(iii) Dialogue and mainstreaming of CSA roll-out in to programs and investment plans at national and provincial levels in Cambodia.	-December 2022, documents and arguments for a better earmarking of national funds for Climate-Smart Agriculture in Cambodia is developed.	2 position papers have developed: Accessible Irrigation System for Agricultural Cooperatives and their members. Better earmarking of funds for mitigation and adaptation measures mitigating climate change.	Fully Achieved
	-A strong position paper for climate smart agriculture in Cambodia developed.	A position paper on Accessible Irrigation System for Agricultural Cooperatives and their members has developed and accepted at the national level through CACA	Fully Achieved
	-December 2023, 200 CSA priorities of farmers have been integrated into CIP and 50% have been addressed.	283 priorities of CSA have been integrated into CIP. 99 priorities of CSA have been addressed; which is equal to 34%.	Fully Achieved

Farmers within cooperatives and demonstration farms are widely adopting Climate-Smart Agriculture (CSA) strategies to enhance vegetable and rice yields, thereby increasing productivity and household income. The most commonly employed CSA methods include:

- Understanding importance of proper land levelling improving even access to water etc.,
- Using best broadcasting methods for efficient germination and seed saving,

- Sourcing higher quality seeds adapted to climate change from safe and reliable sources,
- Utilizing seeds with high germination rates,
- Implementing two to three rounds ploughing/mechanical cultivation and land levelling for optimal growth conditions,
- Understanding various optimized weed control methods,
- Safe and minimal application of herbicides for effective weed control,
- Using rice straw for mulching
- Knowing the right time to harvest for maximum yield and lower post-harvest losses,
- Practicing efficient water management.

Adding to these, the farmers also ensure timeliness in all field operations, which is crucial for maximizing productivity. Furthermore, they incorporate learnings and best practices from CSA demonstrations into their climate change adaptation strategies.

There were challenges in fully implementing the CSA protocols. Farmers faced challenges in implementing the whole set of CSA protocol due to lack of capital to purchase agricultural equipment such as drip irrigation, land for seed nursery preparation.

There were some difficulties in CSA demonstrations regarding to Integrated Pest Management to control insects and diseases controls. Certain field demonstrations didn't achieve optimal results due to challenges in controlling pests and diseases using Integrated Pest Management (IPM). This is largely due to the need to strike a balance between sufficient pest control and minimizing environmental impact. In addition, flush flood destroyed one site in the middle of demonstration. Other difficulties included water availability in dry season and excessive rainfall in rainy season as well as limited the farmers' ability to grow vegetables. Strengthening CSA policy dialogue and advocacy can help to improve water management including drainage for vegetable production.

Net house for vegetable nursery was expensive for some farmers, however, simple net vegetable houses using local material was very beneficial, as it protected the seedlings from pests, diseases and extreme weather conditions, and improved the quality and quantity of vegetable seedings and production.

Table 3.2 shows CSA techniques by vegetable farmers for dry season. All survey respondents used varieties tolerant to climate and short maturing varieties. Adopting climate-resilient crops varieties such as drought and flood-resistant rice varieties, is a key adaptation strategy and these crops varieties can withstand extreme weather conditions and ensure successful harvests.

Between 70 to 80 percent of AC farmers used “Plastic mulch”, “Rice straw for mulching”, “Digging and Renovated the pond” to save water and improve soil futility for vegetable. However only about 30 percent of farmers have adequate water system and fair management during dry season.

Table: 3.2 Adopted the CSA technical guideline after the training for Vegetable production in dry season

No	CSA techniques	Dry Season		
		Mean(m^2)	% Farmer	%Land
1	Short maturing varieties	2,775	100%	95%
2	Used varieties to tolerant to climate	2,775	100%	95%
3	High seed beds	2,777	97%	93%
4	Improve drainage	2,640	82%	74%
5	Used plastic mulch	2,626	82%	73%
6	Used rice straw for mulching	2,598	74%	66%
7	Digging and renovated the pond	3,306	71%	81%
8	Seedling house	2,435	61%	51%
9	Used shade net	3,318	45%	51%
10	Water gate	2,808	32%	30%
11	Water station	2,992	32%	32%
12	Bio-diversity	2,777	29%	28%
13	Net house for planting	3,177	29%	32%
14	Water reservoir	3,209	29%	32%
15	Fair water management	1,763	21%	13%

Source: Survey data

Adapting CSA technique, AC farmers can grow vegetable in the dry season. Table 3.3 shows 89 percent of use High seed beds technique while 74 percent use Draining which are very important techniques to deal which flooding during raining season, where farmers are short of suitable land to grow vegetables during wet season.

Table: 3.3 Adopted the CSA technical guideline after the training for Vegetable production in Wet season

No	CSA techniques	Wet Season		
		(m^2)	%Farmer	%Land
1	Used varieties to tolerant to climate	2,014	95%	86%
2	Short maturing varieties	2,117	92%	88%
3	High raising seed bed	2,024	89%	82%
4	Improve drainage	2,146	74%	71%
5	Used plastic mulch	2,130	74%	71%
6	Digging and renovated the pond	2,502	68%	77%
7	Used rice straw for mulching	2,174	61%	59%
8	Seedling house	2,097	50%	47%

9	Used shade net	2,747	39%	49%
10	Water gate	1,941	29%	25%
11	Water reservoir	2,073	29%	27%
12	Water station	2,073	29%	27%
13	Net house for planting	2,205	26%	26%
14	Bio-diversity	2,689	24%	29%
15	Fair water management	1,425	16%	10%

Source: Survey data

Yield for vegetable production has significantly improved when applying CSA techniques for both dry season and wet season. Practiced CSA during the wet season has increased yield from 1.2 kg/m2 to 1.9 Kg/m2 while dry season vegetable yield increased from 1.49 Kg/m2 to 2.22 Kg/m2 (Table 3.4).

Table: 3.4 Vegetable yield before and after adapting CSA

Rice production		**Average Land (m2)**	**Average yield (Kg/m2)**
Wet season	Before CSA	1,394	1.20
	CSA	2180	1.90
	Change (%)	56	58
Dry season	Before CSA	1,932	1.49
	CSA	2,664	2.22
	Change (%)	37	49

Source: Survey data

Practicing CSA is not only improving productivity, but is also income and net return. Table 3.5, 3.6 and 3.7 shows substantial financial increased for some vegetable production like yard long bean, tomato and chilly. Among that crops tomato was the most profitable which 274 % profit following by chili and yard long bean which profit 33% and 31% respectfully.

Table: 3.5 Financial analysis of tomato farm by land size

	Description	Land size (m2)		
		240	100	500
		Price $		
A	Fixed costs	322	134	672
B	Fixed costs per crop cycle	41	17	86
C	Variable costs	104	43	216
D	Total costs per crop cycle (B+C)	129	54	269
E	Total income	483	201	1006
F	Gross Margin (E-C)	379	158	790
G	**Profit or loss (E-D)**	**354**	**147**	**737**
H	Return on investment (G/D*100)	274%		
I	**Return on own labour**	**53**	**22**	**109**

	Profit plus income from own labour (G+I)	***406***	***169***	***847***

Table: 3.6 Financial analysis of chili farm by land size

	Description	Land size (m2)		
		252	100	500
		Price $		
A	Fixed costs	232	92	461
B	Fixed costs per crop cycle	40	16	79
C	Variable costs	218	86	432
D	Total costs per crop cycle (B+C)	235	93	466
E	Total income	313	124	620
F	Gross Margin (E-C)	95	38	188
G	**Profit or loss (E-D)**	**78**	**31**	**154**
H	Return on investment (G/D*100)	33%		
I	**Return on own labour**	**156**	**62**	**310**
	Profit plus income from own labour (G+I)	***234***	***93***	***464***

Table: 3.7 Financial analysis of yard long bean farm by land size

	Description	Land size (m2)		
		206	100	500
		Price $		
A	Fixed costs	210	98	490
B	Fixed costs per crop cycle	49	24	119
C	Variable costs	127	162	811
D	Total costs per crop cycle (B+C)	176	28	139
E	Total income	330	160	801
F	Gross Margin (E-C)	154	75	374
G	**Profit or loss (E-D)**	**55**	**27**	**134**
H	Return on investments (G/D*100)	31%		
I	**Return on own labour**	**94**	**46**	**228**
	Profit plus income from own labour (G+I)	***149***	***72***	***361***

Table 3.8 showed majority of farmers adopted CSA techniques including Raising levee, Improve drainage, short and tolerant varieties to climate change while only 5% of farmers applied Cover crop.

Table 3.8 Adopted the CSA technical guideline after the training for rice production

No	Indicator	Mean(ha)	% Farmer	Land
1	Raising levee	1	99%	31%
2	Improve drainage	2.6	86%	68%
3	Eliminating invasive varieties	2	84%	52%
4	Used short maturing varieties	2.5	84%	64%
5	Used varieties tolerant to climate change	3.6	79%	87%
6	Fair water management	2.7	63%	52%
7	Bio-diversity	3.2	43%	42%
8	Water reservoir	2.7	43%	35%
9	Water gate	3.8	37%	43%
10	Mark Pond	3.5	31%	32%
11	Water station	4.5	22%	31%
12	Cover crops	5.1	5%	7%

Source: Survey data

Rice production also increased when adopting CSA. A significant improvement of yield was recorded when applying CSA techniques for both dry season and wet season. Table 3.9 shows farmers practiced CSA on dry season has increased yield from 3.44 tons/ha before CSA to 4.64 tones/ha after using CSA while wet season rice yield from 2.44 to 3.74 tons/ha.

Table: 3.9 Rice yield before and after adapting CSA

Rice production		Average Land (Ha)	Average yield (T/Ha)
Wet season	Before CSA	2.51	2.44
	CSA	2.54	3.74
	Change (%)		47
Dry season	Before CSA	2.42	3.44
	CSA	2.07	4.64
	Change (%)		25

Source: Survey data

Adopting CSA to reduce vulnerability to climate change risks: Climate effects productivity of rice and vegetable, using CSA technique can improve rice and vegetable productivities through better management of land, water, fertilizer, and pest control. Using Integrated Pest Management (IPM) is a good strategy that involves managing pests in a way that minimizes damage to crops, and contributes to make the balance in the crop agroecosystem and the environment.

During field visits, it was observed that farmers practiced intercropping two or more crops together in the same field and it boosted productivities and enhanced resilience to climate shocks. Additionally, growing cash crops provides an alternative income source for farmers and can help them diversify their risk. Given the potential for climate change to increase pest populations, IPM can be a crucial part of farmers' adaptation strategies.

Good water management can help farmer to save water by using drip irrigation and plastic cover to save water. The plastic cover is not only to help ferment to save water but for weed control to save fertilisers for crop as well.

Expected Benefits: Evidence from the interviews indicated that farmers would adopt CSA when they could foresee benefits of adoption. The benefits could be in terms of higher productivity, improved quality of produces, reduced risks, and increased market demand.

Farmers' Involvement in CSA trainings and CSA demonstrations: The project aimed at bringing greater productivity and increase farmers income. Involving farmers in meetings, trainings and CSA demonstrations were seen as an effective approach to inform farmers about CSA technique and equip them with necessary technical skills to adopt on their farms. The project engaged farmers in the experiment through training, on-farm demonstration of rice and vegetables under a protocol represented by the CSA guidelines. After joining training and demonstration farmers would grow rice and vegetable using CSA technique.

Dissemination of CSA techniques through Agriculture Cooperative: In addition to farm demonstration, effective and extensive dissemination of CSA through ACs is another factor influencing farmers' adoption. Interviews with farmers revealed that Demonstration hosts decided to participate in the on-farm demonstrations because they were given seeds and trained on production skills. Numerous (3204 farmers) non-host farmers have adopted the use CSA technique by covering costs of their own seeds and inputs, because of their strong desire to reach better income and climate change resilience by using CSA.

Farmers' Production Resources: Some farmers who were not selected as demonstration hosts faced difficulties in adopting the full CSA guideline due to their limited production resources. For example, vegetable farmers could not build seed nursery or drum seeding although they know it is very important to save seed or producing good seedling. Similarly, some demonstration farmers in the project also could not expand their farms due lack of money to install irrigation system. However, ACs are expected to facilitate inputs and credit to farmers who earn more money from CSA methods. Agricultural Cooperatives (ACs) are anticipated to assist with inputs and credit for those farmers profiting from CSA techniques. Therefore, future programs should prioritize key CSA techniques that yield returns despite farmers' low investment capabilities, or ensure that credit facilities are available through ACs.

The project was successful in identifying the most efficient seed method, which is drum seeder. However, the adoption was restrained by the high cost of drum seeders for rice production using CSA techniques. The tool needed two people to operate: one to pull the tool and another one to put the seeds. The tools could be invented to be pulled

by machine, but this would add more cost to the tool. The price of drum seeder was US$85, which was complained as too high for many farmers as it uses for small land and only one or two times per year. Therefore, it might be beneficial for Agricultural Cooperatives (ACs) to invest in drum seeders, which could then be rented out to farmers on a cost-sharing basis. However, such investments should be grounded in a robust business plan and investment decision by the AC

Effects of CSA on GHG emissions: The increased yield for vegetable and rice production using CSA techniques reduces 58% GHG emission per kg of product produced in rice wet season of medium rice variety of Phkarom Duol and 73% of modern rice varieties of Senkraub 01 and OM 5451 (IRRI and similar GHG modelling).

b. Markets linkage for CSA products

Market linkage for CSA products is important. AC farmers often produce excess in relation to demand so they need markets to sell their surplus. Vegetable produces are easily perishable and distance also affects transportation costs. The project helped addressing market linkage by organizing marketing groups to buy vegetables from AC members at a reasonable price and then selling it to traders, retailers, restaurants. The project also trained ACs members to link to market outlets by reaching to vegetable traders to come to communities sell in bulk.

The good successes of the CSA products are marketing, pricing and increasing the number of vegetable producers in the community. AC members growing better quality of vegetable products using CSA technique sold at 25% higher price compared to non-CSA produce due to less use of pesticide and chemical fertilizer.

There were some challenges regarding to how to market the CSA products because farmers need to compete with imported and products which lower price from Thailand and Vietnam.

The ACs are currently seeking extra markets for its members' vegetables, especially restaurants and other markets where demand for vegetables is higher and prices are better.

c. Lessons learned and advocacy by Partners and CACA for the integration of CSA into programs and investment plans.

A Memorandum of Understanding (MoU) was signed in May 2022 between ADDA-READA and the Cambodian Agricultural Cooperative Alliance (CACA) to enhance strategic planning, lobbying for priority climate change requests, upgrading irrigation systems, and improving the quality and pricing of CSA agricultural products and inputs. This MoU is seen as a crucial instrument for integrating CSA into future investment strategies and programs.

The integration of Climate-Smart Agriculture into national, provincial, and local programs and investment plans necessitates a continuous and dedicated effort from rights holders. CSA partners have developed position papers for better national CSA fund allocation and have actively participated in strategic workshops and policy dialogs

at local, provincial, and national levels where prioritised needs and main content of position papers were discussed.

Policy dialogs and advocacy have integrated 283 CSA priorities of rural poor into Commune Investment Plans (CIP). Duty bearers have addressed 99 priorities, which has benefitted 10.128 people. Significant progress and tangible investment results have been achieved from policy dialogs, in terms of e.g.: (i) **High-impact water infrastructure:** Two strategically located water pump station, funded by MAFF for USD 400,000 now provides essential irrigation to app. 100 vegetable producers of two ACs in SR, (ii) **Advanced agricultural technology**: 10 cutting-edge net houses were established in 5 AC in SR enhancing agricultural productivity for AC members. Net houses are crucial for climate-resilient vegetable seed crop production. (iii) **Extensive water management systems:** Construction of 23.5 km canal network, funded by the Provincial Department of Water and Rural Development, aids over 1,000 farmers in OMC, which has significantly improved rice production infrastructure and (iv) **Revitalized irrigation assets:** Renovation of four dams in OMC, has secured the irrigation needs for rice fields and supporting farmers' resilience against climate variability (summary for the PPCSA application)

3.4 CSA Sustainability

The strategy promoted by the CSA will most probably be adopted permanently by rice, cassava and vegetable farmers. Consultation with stakeholders revealed that all stakeholders fully recognise and support the important CSA techniques. The result showing an increase in crop productivity and farmer profit indicates that farmers would continue to adopt CSA when they can foresee such benefits of adoption.

As a result of the assessment, improvement is seen in productivity, linked to market and household income generation and easy to adopt CSA technologies. Most CSA demonstrations and AC members have continued to use CSA techniques and sustained directly through the project. Furthermore, spin off to other non-AC farmers also using CSA methods is recognised.

4. Conclusions and Recommendations

This report presents the result of assessment for Final Evaluation Climate Smart Agriculture Roll-Out in Siem Reap and Oddar Meanchey implemented by ADDA, READA and CIDO. The main objective of the assessment was to assess implementation to date in identifying successes and challenges of the project management focusing on relevance, effectiveness, impact, and sustainability. Below are some conclusions drawn from the analysis.

The first project objective: Improve productivity and reduce the vulnerability to environmental risks from small producers through Climate Change adaptation technologies: Almost all key indicators under this objective were fully achieved excepted total number of farmers adopted CSA were not fully achieved but in progress to achieve 95 % - due to impact of Covid 19, while two other objectives are fully achieved as planned.

The CSA technique is highly relevant for rice, cassava and vegetable farmers. Its technical approach to the problems faced by farmers addressed was broadly appropriate while the strategy promoted by the CSA will most probably be adopted permanently by rice, cassava, and vegetable farmers, ACs, NGOs, local authority and provincial agricultural department. The project contributed to CSA skills and adaptation to climate change of rice and vegetable farmers in the target groups in various forms i.e. increased productivity, reduced the vulnerability to environmental risks, improved market linkages and CSA policy dialogues. The CSA protocol and training design were generally appropriate and effective for farmers. Local authorities collaborated well with project staff and recognized the importance of CSA to cope with the climate change

There were challenges in fully implementing CSA protocol due to AC farmers lack of capital to purchase agricultural equipment such as drip irrigation land seed nursery preparation. The project strategy to prioritise needs of the farmers and advocate for support to production input, investments and a voice of smallholders has created results and is assessed to continuously attract investments, which will benefit the rural farming communities.

There were some difficulties in CSA demonstrations regarding to insect and disease controls. There were also some challenges regarding to how to market the CSA products because farmers need to compete with imported products from Thailand and Vietnam. There was also a communication gap between project staff and LNGOs and PDAFF in Oddar Meanchey, with regard to the project implementation.

With these conclusions, the report outlines some recommendations for ADDA on how to strengthen success of CSA roll-out as followings:

Recommendations are given in consideration of the limitations imposed by the prevailing administration context, production, advocacy and market linkages challenges of the project. Key recommendations made by the evaluation team include:

Improving Sustainability CSA Technical Supports: To ensure effective demonstration and adoption of CSA practices, EDRO project continues dealing with AC capacity building and market linkage, while the CSA project mainly uses ACs as a vehicle for wide spreading of CSA techniques. The integration of Climate-Smart Agriculture (CSA) into national, provincial, and local programs and investment plans necessitates a continuous and dedicated effort from rights holders. External investments are necessary which may be promoted by policy dialogs/advocacy in a longer-term perspective.

Application of IPM principles: It is recommended that CSA trainers and farmers continually refine their understanding and application of IPM principles. Regular updates to CSA guidelines can provide the latest best practices for IPM, ensuring farmers stay abreast of the most effective pest control methods. This continual learning and adaptation will enhance the overall effectiveness of the CSA approach, leading to healthier crops and higher yields.

Establishing Participatory Group Certificate (PGC) for CSA Products: To enhance the market access and income of small producers, it is recommended to establish PGC, in which PACU playing a leading role in facilitating the process with the ACs and their members. PGC should promote standardised production and sustainability of agricultural products. Responsible PCG and AC committee members should play an active role in market facilitation, and represent the interests of the AC members. All decision making must be made by group members and every member should respect their regulation.

Capacity Development for PGC: Further support provided to PGC by focusing on marketing and financial literacy by providing more trainings to the committee and members. Also training in other areas including strengthening leadership and planning skills for committee members of ACs should be given.

Considering Contract Farming: Contract farming would be a good mechanism for connecting AC members to lower input costs and secure market prices. Uniform product standards, farmers continuous supply of products according to agreements, competitive pricing are prerequisites for successful contract agreements.

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Annex 1: References

CISU Development Intervention Proposal (2020) Climate Smart Agriculture roll-out (CSA): UNDER THE OVERALL GUIDANCE AND RESPONSIBILITY OF Agricultural Development Denmark Asia (ADDA)

CSA Baseline Survey Report (2021)

Progress Report (January 2021 until end Dec 2023) Climate Smart Agriculture roll-out in Siem Reap and Oddar Meanchey Province (CSA) Project

Rune Vinter Pedersen & Maria Graversen (2022) Report on CISU monitoring visit to READA Cambodia: Climate Smart Agriculture roll-out (CSA) and Empowering Agricultural Cooperatives and Civil Society in Siem Reap and Odder Meanchey

CSA impact assessment report. July 2023.

Tech Ratana (2023) Climate Smart Agriculture Roll Out (CSA Project) The 2nd CSA Project Steering Committee Meeting

Annex 2: List of Persons Met

No.	Name	Sex	Position/Institution/Place
1	Ny Phannat	M	Farmer/vegetables/AC Kantreng, Prasat Bakong/SR
2	Chhun Samon	F	Farmer/vegetables/AC Kantreng, Prasat Bakong/SR
3	Chheun Kimshot	F	Farmer/vegetables/AC Kantreng/Prasat Bakong /SR
4	Chheun Kimsib	F	Board Director/AC Kantreng/Rice /Prasat Bakong/SR
5	Phang Phol	M	Farmer/water station/AC Kantreng /Prasat Bakong /SR
6	Phav Phy	M	Board Director /AC&farmer/Rice /AC Kasekor Sammaki/Sort Nikum/SR
7	Phy Sreyleak	F	Farmer/Rice /AC Kasekor Sammaki/ Sort Nikum/SR
8	Vanh Vun	M	Farmer/Rice /AC Chansor/ Sort Nikum/SR
9	Long Leap	F	Deputy board director, AC Kok Thlok Krom /Chikreng /SR
10	Sa Kemsith	F	Farmer/rice/AC Kasekor Sammaki/Sort Nikum/SR
11	Chhut Chhorn	M	Commune council/AC Kasekor Sammaki /Vegetable/Sort Nikum/SR
12	Om Leap	F	Farmer/vegetables/AC Kasekor Sammaki/Sort Nikum/SR
13	Ry Pisey	F	Farmer/vegetables/AC Chansor/Sort Nikum/SR
14	Choy Phai	M	Farmer/vegetables/AC Chansor/Sort Nikum/SR
16	Phong Saret	M	Bord Director /AC Knat /Pouk /SR
17	Nhean Phoeurn	F	Committee/AC Knat/Pouk /SR
18	Phol Sophea	F	Rice Famer /AC Knat /Pouk/SR
19	Penh Pum	M	Rice Famer /AC Knat /Pouk /SR
20	Prak Yat	F	Vegetable Famer/AC Knat / SR
21	Suot Moum	F	Vegetable Famer/AC Knat SR/

22	Thorn Sophon	F	Committee/AC Kuok Thlok Krom/ Vegetable /Chikreng/SR
23	Pheav Lom	F	Vegetable Famer/AC Kuok Thlok Krom /Chikreng/ SR
24	So Saor	F	Rice Farmer/AC Kuok Thlok Krom /Chikreng /SR
25	Chhuon SoKhon	F	Rice Farmer/AC Kuok Thlok Krom / Chikreng / SR
26	Phong Saret	M	Bord director/PACU/SR
27	San Samnang	M	Vice bord director/PACU/SR
28	Set Hach	F	Supervisory bord/PACU/SR
29	Touk Chin	M	Member bord/PACU/SR
30	Chhaim bunchorn	M	Member bord/PACU/SR
31	Phay Samrach	M	Member bord/PACU/SR
32	Tu Thida	F	Staff PACU/SR
33	Sang Kimhoeun	M	Member bord/PACU/SR
34	Ao Kimloun	F	Vice supervisory /PACU/SR
35	Blong Sar	M	Rice farmer/AC Kok Khpose/Srash Srong Village/OMC
36	Nay Noth	M	Rice farmer/AC Kok Khpose/Srash Srong Village/OMC
37	Khev Heom	M	Committee/AC Kok Khpose/Srash Srong Village/OMC
38	Houk Ratana	M	Committee/AC Kok Khpose/Srash Srong Village/OMC
39	Ring Reuth	M	Vegetable farmer/AC Kok Khpose /Brey Village//OMC
40	Chhun Moeurn	M	Vegetable farmer/AC Kok Khpose/Brey Village/OMC
41	Van Pek	M	Chief of Kok Khpos Commence/Banteay Ampil District/OMC
42	Sot Sisokheang	M	Director of PDAFF-OMC
43	Sam Sereywathana	M	ED of RCEDO, at CIDO Office/OMC
44	Oeurn Ratana	M	ED of CIDO, CIDO Office/OMC
45	Pon Sarann	F	Business Development Advisor, at CIDO Office/OMC
46	Nhek Phally	M	District Facilitator, CIDO Office/OMC
47	Pann Rady	M	Project Coordinator, CIDO Office/OMC
48	Den Lida	F	DF, CIDO Office, CIDO office
49	Vong Sopheap	F	Board director of PACU-OMC, at CIDO Office.
50	Khoth Khoae	M	Admin and Finance Officer of PACU-OMC, at CIDO Office.

Annex 3: Field Work Interview Guides for ADDA, REDA, SMUAC committees, PDAFF, PDoWA, PACU

Interviewer's name: ……
Interviewee's name:……
Location:……
Date: ……

My name is Nou Keosothea/Pen Bun Theun and I am undertaking the assessment of project evaluation "Climate Smart Agriculture Roll-Out in Siem Reap and Oddar Meanchey" implemented by ADDA and READA. The overall project objective is resilience of poor

farmers to climate change strengthened by adoption of and institutional support to Climate Smart Agricultural (CSA) production.

The objectives of the assessment are to:

- identifying successes and challenges of the project management unit against its project implementation objectives.
- assess the relevance, effectiveness, impact and sustainability of the project.

As part of my assessment, I will interview a wide range of stakeholders involved in this project. All responses provided to me will be kept confidential and only a summary of responses across all respondents or unattributable responses from individuals will be reported.

I understand that you were involved in the CSA roll out project. Is that so? If yes, could you please response to the following questions?

1. Please can you describe role and responsivity for the project?
2. How is the ACs and their members selected for the project?
3. What underline participation of ACs and their members?
4. The project has introduced CSA to ACs and their members, please tell me about:
   - CSA training (duration, contents, benefit, challenges)
   - CSA input supply
   - Production, yield, income
   - Profitable CSA at farmers field
   - CSA market linkage: Small producers have improved linkage to markets for CSA products
   - CSA reduce and adapt to vulnerability to climate change risks.
5. What would you think about dialogue and mainstreaming of CSA roll-out?

6. What significant changes have occurred in the beneficiaries? I would like you to reflect on characteristics of project best practice that you think most help the project contribute to ACs and their members development. You may like to consider your role in the project design, training and monitoring. Please describe?
7. Is the project using the most relevant ways to achieve its outcomes?
8. To what extent is the crosscutting issues of poverty, gender and advocacy issues are being addressed?
9. To what extent has the project met each of its planned objectives, results and indicators.
10. What are the main challenges of the project implementation? What should be done to improve it?
11. In regarding to sustainably of the project. Are the changes which have been achieved likely to be sustained? What are the mechanisms that make the project more be sustained?
12. Is anything would you like to add?

Annex: 4: Field Work Interview Guides for AC and Famers

Interviewer's name: ……
Interviewee's name:……
Location:……
Date: ……

My name is Nou Keosothea/Pen Bun Theun and I am undertaking the assessment of project evaluation "Climate Smart Agriculture Roll-Out in Siem Reap and Oddar Meanchey" implemented by ADDA and READA. The overall project objective is resilience of poor farmers to climate change strengthened by adoption of and institutional support to Climate Smart Agricultural (CSA) production.

The objectives of the assessment are to:

- identifying successes and challenges of the project management unit against its project implementation objectives.
- assess the relevance, effectiveness, impact and sustainability of the project.

As part of my assessment, I will interview a wide range of stakeholders involved in this project. All responses provided to me will be kept confidential and only a summary of responses across all respondents or unattributable responses from individuals will be reported.

I understand that you were involved in the CSA roll out project. Is that so? If yes, could you please response to the following questions?

1. Please can you describe your involvement which the project?
2. How was your selected for the project?
3. What underline your participation in project?
4. The project has introduced CSA to ACs and their members, please tell me about:
   - CSA training (duration, contents, benefit, challenges)
   - CSA input supply
   - Production, yield, farm income
   - Profitable CSA at farmers field
   - CSA market linkage: Small producers have improved linkage to markets for CSA products
5. What are the benefits applying CSA technotes? Please describe?
6. Are there any issue applying CSA? If you have what are the best way to address it?
7. How CSA reduce and adapt to vulnerability to climate change risks.
8. What would you use income from CSA farm income? Please describe?
9. In the future, will you continue to apply CSA? And why?
10. Is anything would you like to add?

Annex 5: Result mapping guide

Objectives	Key Indicators	Results Achieved up to date: 31 December 2023.
1.Improve productivity and reduce the vulnerability to environmental risks from small producers through Climate Change adaptation technologies	-December 2021; At least 20 ACs have applied to become CSA demonstration host; 75% have successfully outlined and defended their proposal and were approved for support.	
	-December 2023; 120 CSA best practice on rice production (or cassava in ODM) and 30 CSA best practice demonstrations on vegetable have been conducted on farmers' field by ACs	
	-December 2023, at least 3600 Farmers have adopted main Climate Smart Agricultural practices, which has improved productivity by 30 %	
(ii) Improve linkage to markets for Climate Smart Agricultural products of small holders which increases income from Climate Smart Agricultural production	-By May 2022, 100 tons of cereals and 50 tons of vegetables is produced according to best CSA practice and sold at a higher price.	
	-December 2023, 30 % of at least 12.000 targeted beneficiaries have increased their income 30% from Climate Smart Agricultural production	
(iii) Dialogue and mainstreaming of CSA roll-out in to programs and investment plans at national and provincial levels in Cambodia.	-December 2022, documents and arguments for a better earmarking of national funds for Climate-Smart Agriculture in Cambodia is developed.	
	-A strong position paper for climate smart agriculture in Cambodia developed.	
	-December 2023, 200 CSA priorities of farmers have been integrated into CIP and 50% have been addressed.	