



Cambodia Agricultural Value Chain Program

Six-Monthly Progress Report
January–June 2013

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
AFD	Agence Française de Développement
AIF	Agribusiness Innovation Fund
AQIP	Agricultural Quality Improvement Project
ATSA	Agriculture Technology Services Association
AusAID	Australian Agency for International Development
AWP	Annual Work Plan
BANTIC	Banteay Thleay Irrigation Community
BEE	Business Enabling Environment
CARDI	Cambodian Agricultural Research and Development Institute
CAVAC	Cambodia Agricultural Value Chain Program
CMAC	Cambodian Mine Action Centre
DAE	Department of Agricultural Extension
DCED	Donor Committee for Enterprise Development
DTL	Deputy Team Leader
EIA	Environmental Impact Assessment
EIC	Economic Institute of Cambodia
EMS	Environmental Management System
EMP	Environmental Management Plan
EU	European Union
FCRMA	Federation of Cambodian Rice Miller Associations
FLD	Farmer Livelihood Development
FWUC	Farmer Water User Community
FWUG	Farmer Water User Group
GDA	General Directorate of Agriculture
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPS	Global Positioning System
HARVEST	Helping Address Rural Vulnerabilities and Ecosystem Stability
HPC	Heng PichChhay
IEA	Initial Environmental Assessment
IDE	International Development Enterprise
IFC	the International Finance Corporation
IFDC	International Fertiliser Development Centre
IPM	Integrated Pest Management
IRL	Indochina Research Limited
ISC	Irrigation Service Centre
ISF	Irrigation Service Fee
IT	Information Technology
KAP	Knowledge, Attitude and Practice
MAFF	Ministry of Agriculture, Forestry and Fisheries
M4P	Making Markets Work for the Poor
MODE	Minority Organisation for Development of Economy

MOWRAM	Ministry of Water Resources and Meteorology
M&E	Monitoring and Evaluation
MTR	Mid-Term Review
NGO	Non-Governmental Organisation
NSC	National Steering Committee
O&M	Ownership & Management
PDA	Provincial Department of Agriculture
PDWRAM	Provincial Department of Water Resources and Meteorology
PLOVIC	Plov Touk Irrigation Community
R&D	Research and Development
RGC	Royal Government of Cambodia
RUA	Royal University of Agriculture
SC	Secondary Canal
SEATV	South East Asia TV
SIF	Supplementary Investment Fund
SPM	Srov Pouch Meas, Co., Ltd.
TAF	The Asia Foundation
TNA	Training Needs Assessment
ToR	Terms of Reference
TOT	Training of Trainers
US	United States
UXO	Unexploded Ordnance
VVOB	Flemish Association for Development Cooperation and Technical Assistance

1 INTRODUCTION

CAVAC continues to perform well during its fourth year of implementation. The Australian Agency for International Development (AusAID)'s Mid Term Review (MTR) conducted in March 2012 concluded that CAVAC was likely to meet or even exceed expectations set at the beginning of the program, but advised that there was still a long road ahead to ensure success. More than a year after the MTR, the CAVAC team is of the opinion that the progress made to date justifies the MTR conclusions. CAVAC's portfolio approach to implementation continues to be critical for success. For example, markets such as fertiliser and pesticide will likely to exceed MTR expectations, while in others, progress is less than what was expected a year ago. Overall CAVAC is confident that its final impact evaluation will reflect the MTR projections.

This confidence is partly based on the enthusiasm of private sector partners to take on improved business models that ultimately benefit smallholders in rice and vegetable farming. CAVAC expects that the more significant monitoring activities to capture the impact on farmers' productivity will start around December 2013. These monitoring activities were not undertaken earlier as CAVAC's *facilitate-rather-than-do* approach takes several years before increased productivity and systemic change can be accurately measured.

CAVAC has also become a much stronger organisation. CAVAC's *continuous learning* approach has been enthusiastically supported by staff. Activities and markets are regularly reviewed and critically examined; and appropriate adjustments are made when necessary based on this rigorous analysis. CAVAC continues to invest in its internal culture and the Monitoring and Evaluation (M&E) system, the results of which were recently recognised by an external (Donor Committee for Enterprise Development [DCED]) audit. The audit confirmed almost full compliance with international best practice. "CAVAC has a strong and institutionalised measurement system, with a particular focus on the learning elements. The learning culture has been carefully developed and nurtured so that staff can honestly accept mistakes, learn from them and improve implementation accordingly."

In the market development field there is growing recognition that continuous learning and adjustment is essential to success. This is particularly relevant in the Cambodian context where regular adjustments are critical given that agriculture is changing rapidly. This is evidenced by the fact that many parameters and assumptions on which CAVAC was designed have changed substantially. For example: labour has become increasingly expensive while supply is decreasing, which is forcing the agriculture sector to invest heavily in mechanisation. Moreover, the choice of varieties in wet season rice has progressed much faster than expected, and there are also growing opportunity costs on the attractiveness of vegetable and rice farming.

Irrigation continues to be an important focus and the 2013 Annual Work Plan (AWP) drew on lessons learnt from CAVAC's initial irrigation schemes. These lessons have been incorporated into the design of all 2013 irrigation activities improving their effectiveness and ongoing sustainability. Increased rural construction activities, partly initiated ahead of the national election, have put some pressure on progress in canal construction. This year CAVAC has also placed increased emphasis on the Operation and Maintenance (O&M) aspects of irrigation. CAVAC is planning to invest in further research which will inform the design of future O&M which bring together government, the private sector and community groups. It is hoped that this innovative way of working will provide a model for other programs to follow.

Within its Agribusiness and Information Systems Component, CAVAC's aim of working more widely than with individual support providers was a focus of work in 2012. Results are now being realised on a number of activities across the portfolio. The emphasis on activities which stimulate change to the enabling environment or wider system services and interactions are known as 'deepening' - which can be seen within the pesticide, media and vegetable markets. For example, CAVAC's work with the General Directorate of Agriculture (GDA) is supporting the development and distribution of a

government led guideline on the use of pesticides. It is predicted that this will stimulate private sector actors to make informed decisions within a clearer operating environment. CAVAC also supports media habit research to generate interest in developing and marketing information tracking the evolution of media consumption. The research will inform media companies and advertisers of the importance of rural populations in the hopes that information is circulated effectively to these populations - providing more up to date product knowledge. It is expected that activities which focus on changing the systemic aspects of the market will impact farmers well into the future.

CAVAC's relationship with the Royal Government of Cambodia (RGC) continues to improve. Three-monthly coordination meetings are held with the Ministry of Water Resources and Meteorology (MOWRAM) and its provincial departments to resolve any emerging issues, agree on priorities, and solve outstanding matters.

Across all components, CAVAC will continue to use the successfully tested mechanisms of informed design, implementation and reflective learning to guide programmatic decisions. CAVAC's intervention planning has taken into account AusAID's decision to extend the program for an additional 1.5 years.

2 SUMMARY OF PROGRESS AGAINST OBJECTIVES

2.1 Agribusiness and Information Systems

In the first half of 2013, the Agribusiness and Information Systems Component was active in the following support markets: seed, fertiliser, pesticide, rice export, information for farmers, media and vegetables. Within the current portfolio of Agribusiness and Information Systems interventions, CAVAC has worked hard to ensure that the activities reflect a balance between those with a clearer link to maximising impact and those which look towards a wider market system change to ensure continuing innovation. This means working both on activities which work directly with service providers and therefore have a stronger connection between the resources allocated and expected results or impact to farmers, and other activities which are committed to analysing and stimulating innovation within the wider market system to generate a lasting and possibly greater impact for all those operating within the system.

This component also provides support to the Provincial Departments of Agriculture (PDAs) and the Ministry of Agriculture Fisheries and Forestry (MAFF) through the GDA to implement activities which align with their priority work areas.

In 2013, the component started with a redesign of its management structures due to increasing workload and increased competency among the Cambodian staff. Within Agribusiness and Information Systems there are now three units under the leadership of three Coordinators. The units currently are: the Input Unit working on rice seed, pesticides and fertiliser; the Vegetables and Rice Export Unit working on vegetables and rice export activities; and the Information Unit working on wider market interventions, media and model farmer training. The Coordinators currently focus on the division of workload among unit members and planning, however overtime greater management responsibilities will be shifted to the Coordinators as their capacity increases.

Below is a summary of work across each of the Units.

2.1.1 Input Unit

During the first six months of 2013, work on rice seed, fertiliser and pesticides progressed as planned. Potential interest from new companies has been significant while existing partners such as Ye Tak and Heng Pich Chhay (HPC) have signed new agreements. A highlight in the Input Unit was the training of information system staff from 12 fertiliser companies in February to March. A follow-up inventory has indicated that four to six of the companies trained are requesting further but more limited assistance from CAVAC to help roll out this training across their companies.

Continuous Learning

Reflecting the focus on continuous learning, the Agribusiness and Information Systems Team drew lessons from its activities with support providers and captured these lessons by adjusting market strategies. These lessons are predominantly based on experiences from working with support providers but also more generally by being present in the markets. As a general observation, almost all providers working with CAVAC are committed and serious. The nature of the initial engagement and cost-sharing arrangements have set the right expectations, that CAVAC helps but that providers need to be in the lead. As outlined in the section below, at times external factors have led to some providers being less eager to continue (an example of this is CAVAC's work with large seed producers, further information can be found at Annex One) and in other cases there has been a need to adjust the innovation to improve performance (examples of adjustments to innovations are explained below, in particular in the section on call centres and dry season model farmers). These analyses show that not every activity CAVAC implements works or works well the first time. Most, if not all, activities have room for improvement. Following analysis, this learning is reflected in the strategies guiding implementation. During the last six months, CAVAC has had to redesign some activities; however, on the whole only small adjustments have been required to improve performance. For other activities, CAVAC is also still searching for the right next steps. An example of this is the intervention on linking events, where further information gathering is being conducted to assist decision making on the value of moving forward with the activity (more information can be found at Annex One). These changes are not unexpected; it is unlikely that a program of this nature would ever have it right the first time or those changes would not be required over time as markets change.

Progress in the **pesticide market** remains steady but strong. An improved policy environment is critical for growth within this market. With this in mind, CAVAC is supporting the PDAs to conduct dissemination workshops on the new laws pertaining to agricultural inputs. The program is also supporting the GDA to produce a Pest Management Manual to be used by agricultural stakeholders, including the private sector and farmers. The manual will clarify the government's position on pesticides within the wider market and demonstrate the easing of the RGC's hesitation regarding the use pesticides by Cambodian farmers. It is hoped that this will develop a more effective operating environment within the pesticide market. Support to the pesticide market also includes new agreements being negotiated with Nokor Thom and SPK, which if successful will likely impact a

significant proportion of Cambodian farmers. In addition, CAVAC is working on a substantial agreement with An Giang, another pesticide company, on pesticide retailer training across 14 provinces.

2.1.2 Information Unit

CAVAC's work in wider market activities includes media and other information for farmers. The activities in **media** with Delight Cambodia are progressing as planned. The first pilot drama has been completed and will be presented to potential advertisers in August 2013. CAVAC also has contracts with two research companies, Indochina Research Limited (IRL) and Feedback Research, to work on commercial media consumption research (rural population). The lack of available media consumption research is a key constraint for developing the commercial media market for agricultural programs and sponsors. Both partners are currently in the design phase of their activities with initial fieldwork nearing completion for IRL and templates for the fieldwork nearing completion for Feedback Research.

In the area of providing effective information to farmers the team is in the process of developing a pest identifying tool that will support help desk and call centre activities. This tool will allow a much more user-friendly interface and enable call centre or help desk operators to supply information to clients with less interpretation of the information thereby improving the quality of information received by callers. CAVAC is planning to market the use of the new database to input companies, call centres, and relevant government institutions.

Through research on **model farmer training** CAVAC has learnt that while innovation has continued, the model farmer training needs to be redesigned to keep pace with current issues in agriculture. As such the focus of model farmer training has shifted from implementation back to redesigning the activity to incorporate the latest lessons learned. The training will become much more targeted and will differentiate between wet and dry season farmers. For wet season farmers, the training content will move towards pesticide use issues and away from fertiliser use. For dry season farmers, CAVAC will learn from the most innovative farmers to ensure that their messages are more effectively transmitted to the wider community.

2.1.3 Vegetables and Rice Export Unit

The Vegetable and Rice Export Unit is continuing to implement programs with the Federation of Cambodian Rice Miller Associations (FCRMA) to secure export contracts through exporter and buyer visits. New activities are expected in August and September in support of the coming wet season crop. Support to Baitong, to improve the quality of rice seed available, is entering into the final training season (wet). Baitong is currently seeking support from CAVAC for a new intervention on the purification of one or more traditional varieties. CAVAC is also in the process of developing new partnerships through a similar type of interventions. CAVAC is considering supporting Golden Daun Keo Rice Mill to produce seed for its paddy producers either through contract farming or on its own land.

Within the **vegetable market**, activities with East West Seed International and Pacific Seeds are now operational and initial assessments show considerable interest within the local community for the new seeds and associated technology packages. Additionally, CAVAC is working with Advanta, the parent company of Pacific Seeds, on an activity to introduce a franchise model into the input retailing business. Pacific Seeds has experienced some initial problems with their demonstration plots because

of a number of issues including miscommunication between management and field staff, poor outcomes due to the weather, and delays due to the registration process. Given this, Pacific Seeds has proposed to delay the start of its activity until the next growing season.

Table 1 below provides a list of CAVAC's non-government partners across Agribusiness and Information Systems.

Table 1: List of companies / partners CAVAC has worked with as at 30 June 2013

Company / Partner	Market / Support System
Srov Pouch Meas, Co. Ltd. (Mr. Iv Vanna)	Rice seed
Mr. Sokunthea (Medium Seed Producer)	Rice seed
Four Rice Seed Production Associations (Champey, Kvek Meanrith, Boeung Nimul and Po Samroang)	Rice seed
Small seed producers	Rice seed
Nokor Thom	Pesticide
SPK	Pesticide
An Giang	Pesticide
Pesticide retailer training with PDAs	Pesticide
Heng Pich Chhay	Fertiliser
Ye Tak	Fertiliser
Bayon Heritage	Fertiliser
Capacity building for Fertiliser Company Trainers (12 companies committed so far: Ye Tak Group, Papaya, Hoang Long, My Agro Business, Heng Pich Chhay, Phkay Pram, Doung Chhive Agricultural Development, Ung Suy Kimly, Anachak Fertiliser Company, CARIS, and Davanphumi)	CAVAC is currently working on further agreements with Ye Tak, Heng Pich Chhay and six others of the 12 companies
Papaya (Negotiating)	Fertiliser
Malysan Group (Negotiating)	Fertiliser
Phkay Pram (Negotiating)	Fertiliser
Davanphumi (Negotiating)	Fertiliser
Ung Suy Kimly (Negotiating)	Fertiliser
Anachak (Negotiating)	Fertiliser
Baitong Kampuchea, Plc.	Rice export
Federation of Cambodian Rice Miller Associations (FCRMA)	Rice export
Golden Daun Keo	Rice export
East West Seed International	Vegetable
Pacific Seeds	Vegetable
Advanta / Pacific Seeds	Vegetable
Vegetable seed retailers	Vegetable
Delight Cambodia	Media
Indochina Research Limited	Media
Feedback Research	Media
Asia Master	Media (wider market)
Website development for the Cambodian Agricultural Research and Development Institute (CARDI)	Media (wider Market)
Helpdesks with the three PDAs	Media (Wider market)

The 2013 AWP also includes support to the three target PDAs and MAFF through a contract with the GDA. Within the past six months, CAVAC has continued to monitor remaining contracts with PDAs from the 2012 AWP allocation and has signed 13 new contracts with the three PDAs on their priority work areas for 2013. CAVAC has continued to work with the PDAs and GDA on fostering an effective and productive relationship. One of the central elements of this approach has been the move to output-based contracts, which were implemented in 2012. The implementation and management of this form of working together have proved to be pivotal in bringing CAVAC and government counterparts together in a more collaborative way. The clarity this has created was clearly reflected in the ease of consultations with government counterparts to develop the 2013 AWP. Specific activities and activity budgets were agreed upon and included in the 2013 AWP, with both PDAs and CAVAC now aware and operating within expectations regarding the process from both sides.

Learning from the previous year of implementation, PDAs now know more clearly which of their priority areas aligned with CAVAC's work and are proactively engaging with the CAVAC team on both the contracting and monitoring aspects of this work. CAVAC has conducted several meetings with the PDAs over the reporting period to ensure consistent understanding of the processes involved and for feedback on how the system is working.

While CAVAC and GDA have agreed and signed a contract which covers implementation of eight activities in the area of rice production, implementation of activities has, to date, been slow. It is hoped that some of the planned workshops work will start after the national election with implementation to continue into the next AWP period.

Please refer to Table 2 below for the list of contracts signed with the PDAs and GDA within this reporting period and Annex 2 for quantitative progress.

Table 2: List of contracts signed with the three PDAs and GDA based on their priority areas within the January–June 2013 period

Signed Contracts	PDA and GDA
Agricultural Cooperative Establishment	Kampong Thom PDA
Rice Demonstrations	Kampong Thom PDA
Laser Land Leveling	Kampong Thom PDA
Rice Seed Production Group Establishment	Kampong Thom PDA
Rice Seed Production Demonstrations	Kampong Thom PDA
Early Rice Demonstrations	Takeo PDA
Agricultural Cooperative Establishment	Takeo PDA
Medium Mature Rice Demonstrations	Takeo PDA
Late Mature Rice Demonstrations	Takeo PDA
Laser Land Leveling	Takeo PDA
Rice Demonstrations	Kampot PDA
Agricultural Cooperative Establishment	Kampot PDA
Laser Land Leveling	Kampot PDA
Rice value chain improvement	GDA – Department of Rice Crop

2.2 Research

In this reporting period, CAVAC initiated two research funds: Pesticide Management Action Research Fund; and the Gender and Agricultural Development Research Fund

The **Pesticide Management Action Research Fund** aims to encourage studies to find practical solutions for farmers to manage pests more effectively. After a call for proposals, CAVAC received seven proposals and awarded four agreements. Each research activity has been scheduled to start in July 2013 and finish in December 2013 whereby a research seminar will be organised for the researchers to present their findings to relevant stakeholders. The topics of the four proposals include:

1. Effect of organic and inorganic fertiliser on insect pest of rice growth and yield;
2. Farmer's technology on vegetable pest control;
3. Examining the negative impacts and financial barriers in pest management among farmers and retailers; and
4. Pest damage simulation: the effects of flag leaf damage on rice yield of different rice varieties.

Detail on the **Gender and Agricultural Development Research Fund** is included in Section 5: Gender Equality.

2.3 Irrigation

2.3.1 Introduction

During this reporting period, CAVAC began construction of seven new schemes; continued construction of canals started in 2012; conducted capacity building of the Farmer Water User Communities (FWUCs) at completed schemes; established FWUCs at new schemes; designed further improvements on schemes completed in previous years; and implemented Supplementary Investment Fund (SIF) activities.

2.3.2 Survey and design

Construction and preparation for construction have started for six of the eight schemes approved in the 2013 AWP. Two schemes in Takeo, Canal 11 and Canal 87, had to be cancelled due to land loss issues. For each of the other schemes a detailed topographical survey of the whole command area and designs of the main and secondary irrigation canals have been completed.

Within these last six months, CAVAC and the Provincial Departments of Water Resources and Meteorology (PDWRAMs) continued improvements to schemes initiated in previous years including O'Kak, Tumnub Lok, Thnoat Chum and Angko. Some have been completed and some are still a work in progress. CAVAC and the PDWRAM in Kampong Thom also conducted surveys and designs for new schemes recently added to the approved 2013 AWP list, including Secondary Canal 1 of the 6 January Canal and Boeung Leas. The surveys and designs of these two new schemes are nearing completion. Boeung Leas will be constructed in 2014.

In addition, the surveys and designs of secondary canals of completed schemes were carried out during the reporting period. These schemes will be further developed based on the surveys and

designs of distribution systems and drainage together with the FWUCs and private water sellers that have invested in the schemes.

Because of capacity constraints at the PDWRAMs, some external help was brought in to assist with the survey and design process. Throughout the whole process the engineers of CAVAC and the PDWRAMs have worked closely together to ensure the quality of designs.

2.3.3 Construction

CAVAC is currently working on completing construction of a number of schemes in the three target provinces. Stoppages due to the onset of the wet season in 2012 meant that construction of incomplete schemes resumed in February 2013. This includes canals at So Hang and Tumnub Lok in Takeo, and O'Kak and Spean Touch in Kampot. The completion of the two schemes in Takeo and Spean Touch in Kampot is expected early in the next reporting period with O'Kak reaching completion in early 2014 as early rain disrupted the work planned for 2013.

During the reporting period work also started on four new schemes with contracts awarded in either January or February. These schemes included: Hay Saun in Kampot; Rokar Chhouk in Takeo; and Secondary Canal 2 (SC2) and Secondary Canal 3 (SC3) of the 6 January Canal in Kampong Thom. Of the 2013 schemes approved in the AWP 2013 two canals in Takeo, Canal 11 and Canal 87, were cancelled due to some farmers not agreeing to the land loss required for construction.

Design processes have been ongoing for a number of schemes expected to start the contracting process in early August 2013. Detailed surveys, designs and environmental impact assessments are being completed for Chamlong Chrey pumping scheme in Kampot and 6 January Secondary Canal 1 (SC1) in Kampong Thom. The completion of the design process for Reservoir 77 in Kampot was delayed due to clearance of UXOs at the site, however the Cambodian Mine Action Centre (CMAC) has conducted a survey and clearance for the planned construction site during the reporting period with construction expected to start early in the second half of 2013.

Two FWUCs in Takeo (Banteay Thleay Irrigation Community [BANTIC] and Plov Touk Irrigation Community [PLOVIC]) requested CAVAC to provide assistance in the maintenance and improvements of their schemes using the SIF grants process. In May, CAVAC signed agreements with both FWUCs to dredge the main canals and train them in supervision of construction. Completion of this work is expected early in the second half of 2013.

2.3.4 Operation and Maintenance (O&M)

During the reporting period, CAVAC has continued its work on the O&M of irrigation schemes. CAVAC supported the PDWRAMs of CAVAC's three target provinces in the establishment and training of FWUCs. Continued support to the O&M staff at the PDWRAMs was provided in all aspects of FWUC establishment and training. The CAVAC O&M staff also provided on-the job training to FWUCs and facilitated scheme development before, during and after construction activities.

CAVAC's O&M team also prepared for expected 2014 construction program. Meetings were held with farmers and local authorities to discuss conceptual designs, the expectation of farmers and issues related to land loss. However, these activities were put on hold for the two months prior the national election on 28 July 2013.

In Takeo, the CAVAC team analysed the functioning of private water sellers related to the O&M of a number of schemes at the secondary and tertiary levels. The conclusions were that the situation was different from one area to another and therefore different rules and regulations applied. CAVAC will investigate this in more detail and is in the process of drafting a Terms of Reference (ToR) for a thorough investigation of private sector involvement in irrigation O&M in the target provinces. This study will analyse best practices and provide a set of guidelines on successful development of public private partnerships in the sector.

In Kampot, CAVAC concentrated O&M activities on scheme improvement through established FWUCs and water sellers as available. Much time was also spent on consultations with the future beneficiaries of Chamlong Chrey – a pumping scheme with a network of primary, secondary and tertiary canals. Canal alignments were discussed and agreements reached on the provision of land for construction.

In Kampong Thom, activities were concentrated on the development of the two 2013 schemes that started in February, SC2 and SC3 of the 6 January Canal. These two schemes will cover a total area of roughly 1,200 hectares. The designs include the development of secondary and tertiary canals. In addition, improvements to schemes constructed in 2011 and 2012 were assessed through a large number of meetings to decide the best options, exact canal alignments, and agreement on involvement of private water sellers taking place.

2.3.5 Selection of schemes for 2014

The selection of schemes for next year, which will be the last year for construction of new schemes under the current CAVAC Program, has been conducted in consultation with the three PDWRAMs. Consensus was reached on a number of schemes to be selected for further investigation.

In Kampong Thom, CAVAC has almost completed this process and in the two other provinces this work will be continued after the election period. In Kampot, the selected schemes are mostly pumping schemes, where due to the smaller amount of land required for construction, land loss issues are considered to be less of a problem therefore it is expected that the schemes will all be accepted by all farmers. Based on the results of feasibility studies, including environmental assessments, two or three of the proposed schemes in Kampot will be selected for surveys and detailed designs. In Takeo, CAVAC is still investigating alternative conceptual design options for a number of schemes before making final scheme selection.

Table 3: Status of CAVAC Schemes as of 30 June 2013

Name of the Scheme	Status of canal construction (Contract-based)
2010	
Krapum Chhuk – Takeo	Completed
Prey Tonle – Kampot	Completed
2011	
Krapum Chhuk Extension (1.5 km) – Takeo	Completed
Tumhub Lok – Takeo	Completed. Additional work 80% completed. Final completion by August 2013
Kveng Tayi – Takeo	Completed
Thnoat Chum – Kampong Thom	Completed. Additional work to be done during next semester

Name of the Scheme	Status of canal construction (Contract-based)
Angko and its extension – Kampong Thom	Completed. Additional work to be done during next semester
Thnoat – Kampot	Completed but additional work on distribution canals needed
Sbov Andeth – Kampot	Completed but additional work on distribution canals needed
O'Kak – Kampot	Completed but additional work still to be completed; delayed due to change of design, early rain and poor performance of contractor
2012	
So Hang – Takeo	90% complete; final completion expected by August 2013
Prey Rumdeng – Takeo	Completed
Prey Leu – Kampot	Completed
Spean Touch – Kampot	90% complete; final completion expected by August 2013
Banteay Thleay – Takeo (Building a secondary canal)	Completed
Plov Touk – Takeo (Building a secondary canal)	Completed
2013	
Rokar Chhuk – Takeo	50% complete; final completion expected by end 2013
Canal 11 – Takeo	Cancelled due to land loss issues
Canal 87 – Takeo	Cancelled due to land loss issues
Hay Saun – Kampot	50% complete; final completion expected by end 2013
Reservoir 77 – Kampot	Delayed start in July due to UXO clearance and delays in design
Chamlong Chrey – Kampot	Delayed start in July due to delays in design
Canal 6 January (Secondary Canal 2) – Kampong Thom	65% complete; final completion expected by September 2013
Canal 6 January (Secondary Canal 3) – Kampong Thom	60% complete; final completion expected by September 2013
Canal 6 January (Secondary Canal 1) – Kampong Thom	Design completed; tender to be awarded in September 2013
Banteay Thleay – Takeo (Dredging the main canal)	40% complete
Plov Touk – Takeo (Dredging the main canal)	70% complete

2.4 Business Enabling Environment (BEE)

Improving the dialogue between the public and private sector stakeholders is the focus of CAVAC's activities within the BEE component. Currently, CAVAC is still at an experimental stage for the design of activities within this component, continuing learning to determine what is possible. Further activities and resources active within this component will be confirmed with the Australian Agency for International Development (AusAID) to ensure there is no duplication across the AusAID program within Cambodia.

Based on the lessons learned from the pilot public-private dialogues within the three target provinces over the last year, CAVAC and The Asia Foundation (TAF) have designed a new set of follow-up activities. The proposal for the second phase of the partnership has now been finalised and the project has been scheduled to start in August 2013 after the national election.

The main objective of this new phase is to create a culture of dialogue between the private and public sectors at the provincial level. This will include increasing and strengthening linkages and relationships

between the two sectors, creating a sustainable network between them and building a better understanding of the issues faced by key stakeholders.

In other activities, despite useful findings from Kampong Thom PDA's assessment of the cassava sector last year, limited progress was made within the past six months. Kampong Thom PDA has requested to delay the final workshop, which aims to share the final results of the assessment, to October 2013.

3 CAVAC'S APPROACH TO EFFECTIVENESS, EFFICIENCY AND SUSTAINABILITY

CAVAC has been designed to include many elements of the Making Markets Work for the Poor (M4P) approach. This is an approach where effectiveness, efficiency and sustainability are the three key elements linked to achieving impact. A sustainability criterion as defined by the program is a pre-condition for all activities, with effectiveness and efficiency combined ensuring maximum impact. For CAVAC, the likelihood of effectiveness is largely determined by addressing the right issues with the right tools, and for efficiency it is related to the capacity of the program to address these issues through quality partners.

3.1 Effectiveness

CAVAC's definition of effectiveness is achieving change at the farmer level, meaning that farmers change their practices to get higher yields and income. However, effectiveness is realised in stages. It takes some time for the effects of an intervention or activity to reach farmers. At the current stage of the program, change at the support provider level has continued to grow. CAVAC makes sure that each outcome is captured through its M&E tools, and for most interventions it is not yet time to check and measure outcomes at the farmer level or in some cases at the support provider level.

An example of an intervention whose change at the support provider level has been assessed is the capacity building intervention with Nokor Thom. In late 2011, CAVAC was working with Nokor Thom to build the capacity of its information system staff. In assessing changes to the company's practices due to this intervention, CAVAC has found the following:

- In 2012, the company started developing new information system materials to be pest-based rather than product-based. These new materials have been used and widely distributed by Nokor Thom to farmers and retailers. Starting in late 2012, Nokor Thom has used on average 4,000 copies (2,500 copies for rice production and 1,500 copies for vegetable production) of these materials per month.
- On the basis of the success of the intervention, Nokor Thom recruited nine more staff in 2012, partly to achieve its sales ambitions but also to continue the information system activities on a wide scale across the company. A number of these new staff members were trained on pest control to provide information services to farmers and retailers.
- Nokor Thom has set up nine telephone lines to give advice to its customers. If the company's staff member cannot answer a farmer's questions via the phone, Nokor Thom will assign a

staff member to visit and discuss the problem at the farmer's field. If there is a pest outbreak in the field, Nokor Thom usually organises training for farmers on the issue.

- The company has improved its product packaging by switching from glass bottles to plastic bottles to better maintain the product quality and to reduce breakages. They have also improved instructions on the product label to make it clearer for users and are printing labels directly on the packages (rather than sticking instructions to the packaging to ensure longevity).
- Nokor Thom has continued searching for better products for Cambodian farmers. The company recently registered 11 more products imported from India. Nokor Thom is also considering importing products from China and packaging them in Cambodia. Even though Nokor Thom's main goal is for the growth of the company, farmers will also benefit from better products at more competitive prices.

Nokor Thom's change contributes to the market change. Nokor Thom is stimulating the pesticide market in Cambodia with better products along with better information services. This contributes to greater competitiveness within the market and the end-users, farmers, will receive the benefits.

Another example is the intervention with East West Seed International. Through this intervention, CAVAC is supporting the company in conducting vegetable farm demonstrations with more than 200 farmers. Starting in March, East West has initiated 56 demonstration plots. And even though it is at the very beginning of the intervention and too early to be captured through CAVAC's M&E system, change at the support provider level has already been observed. With each selected farmer, East West works on a 500-square meter vegetable farm demonstration and provides the farmer with context specific techniques. More importantly, CAVAC has observed that some of the 56 farmers East West had started with have used the techniques learned from East West on their land to a greater extent than the required standard.

In addition, even though there is limited data available at this stage, CAVAC's effectiveness can also be seen through its ability to learn and adjust. As a learning organisation (as outlined in the 2013 AWP), CAVAC has continually conducted analyses, studies, research activities and surveys to collect data to inform decisions on interventions, both existing and new. The data collected as well as CAVAC's culture of stimulating critical thinking within the team have led to CAVAC continually shaping interventions to ensure activities have the best chance of achieving outcomes, and ultimately impact. Below are some examples of interventions and their underlying issues and progress over the past six months:

In the information unit, the intervention with Asia Master produced marginal results but has led CAVAC to a new opportunity which may open several more doors within this market. The call centre developed for Asia Master could not be accessed easily and therefore it could not function effectively. Through many discussions and analysis, CAVAC is working to acquire resources to develop a tool to identify pests to create a much more user-friendly database. CAVAC hopes that this database will allow call centre agents to process questions from callers more easily. After this tool is developed, CAVAC will also check with various input companies, call centres, and relevant government institutions to see if they are interested in adopting the tool.

With model farmer training, CAVAC recently conducted a study to collect information to redefine the strategy for this intervention. The study indicated that there were two types of model farmers; curious model farmers, so called super model farmers; and problem responsive model farmers, so called normal model farmers. The super model farmers continue to seek new ways to farm and are always eager to try new things. The normal model farmers tend to seek solutions only when they face problems. Based on the results of this study CAVAC is planning to develop different sets of activities for the two identified groups of model farmers. With super model farmers CAVAC will collect their successful innovation stories to share with others, while with problem responsive model farmers CAVAC will continue its training with further improvements to the training materials and curriculum.

In the media market, CAVAC has been working to increase advertisers' interest in sponsoring agricultural TV programs. In 2012, CAVAC supported Delight Cambodia to produce a pilot drama episode on agriculture. Delight Cambodia had been approaching various TV stations to air the episode but has not been able to find a station with good coverage willing to collaborate with them. Through various discussions and analyses CAVAC decided to have the episode evaluated by an external consultant to get an independent opinion on the quality of the episode. CAVAC will further support Delight Cambodia to conduct a workshop to show the episode along with the evaluation report from the independent consultant to advertisers to stimulate their interest and generate sponsorship. If the sponsorship is generated from interested advertisers is sufficient for the company to break even or to make a profit, that is by itself a significant sign of effectiveness realised through this intervention. In addition a workshop will also be conducted for script writers at Delight Cambodia to meet with agricultural experts to get a deeper understanding of agriculture with an aim to produce better agricultural programs in the future.

In the irrigation sector, CAVAC has also learned significantly from past experiences and has continued to incorporate lessons in its daily implementation. Within the O&M work CAVAC has continued to follow up with all the FWUCs, both established and establishing, to strengthen their capacity. Regular follow up visits have enabled CAVAC to observe problems particular to each FWUC and to work with the FWUC, relevant local authorities and the community to find specific solutions. For example, CAVAC's continued support and follow-up have led CAVAC to reform the Prey Tonle FWUC committee. Some important members of the Prey Tonle FWUC committee were found to be not very committed, with others showing strong commitment. On the basis of this CAVAC worked with Kampot PDWRAM's FWUC specialists to reform committee membership. Another example is that the continued follow up has shown the FWUCs' lack of financial management skills which has led CAVAC to plan on developing a financial management training manual especially for FWUC committee members.

3.2 Efficiency

Efforts have been put into improving the efficiency within program implementation, and one of the efforts is shown through its continuous learning. The MTR in 2012 provided recommendations on where CAVAC should steer its focus towards and where not. As CAVAC continued to learn within the past year more information has been accumulated to give an even clearer signal for CAVAC staff to better allocate its resources in terms of which interventions to be prioritised, which not, and what should be the next steps for the prioritised interventions. CAVAC will continue to foster its learning

culture to make sure that resources are efficiently and effectively used towards reaching the program goal.

CAVAC's new structure within the Agribusiness and Information Systems team has also brought more efficient work flow management, enabling more effective planning and resource allocation within the program. Since February 2013, Agriculture Advisers at CAVAC have been grouped into three units: the Input Unit, the Information Unit, and the Vegetables and Rice Export Unit. Each unit has a coordinator to lead the team. This arrangement has meant that staff have more time to meet together as a team: to focus more on their support markets and interventions; to become more knowledgeable about their particular markets and work progress; and to build closer relationships with their partners. It also helps to build the capacity of more senior Agriculture Advisers selected to be Unit Coordinators in management and leadership and frees up time for Agribusiness and Information Systems Sector Manager to focus more on higher level work, such as work at the strategy level.

Within the irrigation sector, the team arrangement, task assignment, and external support have become even more structured which has also generated efficiency. CAVAC has continued to strengthen the structure of having one focal engineer and one organisational expert in each target province which was set up in late 2012. This structure has continued to improve the quality of work as well as the relationships with counterparts from the provincial level to the community level. The focal engineers and organisational experts are only required to travel to the province they are responsible for which means that they have a greater handle on the progress and issues within their respective provinces. Information flows from staff to the sector manager have also greatly improved. Furthermore, realising the large workload within each province, especially during construction, in 2013 CAVAC has acquired more external support to assist in areas such as design and construction supervision. CAVAC has hired three external site supervisors to be based in the three target provinces. This means that the construction work at all schemes in each province is closely monitored ensuring that CAVAC's investment is safe and efficient and provides value for money.

In addition to team rearrangement, roles and responsibility matrixes in the pre-contracting period, contracting period, and post-contracting period in major work areas across sectors, such as land issues, irrigation feasibility studies, irrigation construction work, Agribusiness Innovation Fund (AIF) grants, consultants, and partner agreements have been developed and formalised. The formalisation of these roles and responsibilities further strengthens the efficiency in contract-related work. Roles and responsibilities in these major work areas are now clear and concise for all CAVAC staff. When roles and responsibilities are clear and specific time allotment is known to all involved, sufficient time is made available for things to be handled from one stage to the next. Hence, it eliminates duplication of activities across sectors, minimises things that may fall through the cracks, ensures new staff are able to adapt to the work process and procedures at CAVAC quickly and especially strengthens the quality of contract-related work within CAVAC as a whole.

The trend in partner contribution from both the private and public sectors has become more collaborative. The relationships between CAVAC and most private and public partners have matured. Thus the trust between CAVAC and partners has also increased, allowing each party to focus more on getting the work done and improving the quality of work rather than spending time nurturing the relationships. With regards to financial contribution partners who have come to the second phase of collaboration have increased their contribution towards the total intervention costs. For example in

CAVAC's interventions with Ye Tak and Heng Pich Chhay, their contribution has increased from below 30% in their previous contracts to almost 50% in their current contracts.

Efficiency gains have also been achieved through CAVAC's ability to find more than one partner in each market to implement similar interventions to address similar market constraints at the same point in time. This provides value for money because CAVAC can save significantly on intervention costs while managing to realise market change. For example, in the rice seed market, four partners (one medium seed producer in Kampong Thom and three rice seed production associations within the three target provinces) required rice seed market strategies. Given the requirements CAVAC only hired one consultant to develop the strategies for each partner. While in the fertiliser market, CAVAC was able to bring 12 fertiliser companies together at one time to attend group fertiliser training.

CAVAC staff capacity has continued to grow, leading to improved efficiency within the program. All staff, including support staff, have continued to receive internal and external training. Four of the technical staff were sent on an exchange visit to another AusAID program in Timor Leste to conduct value chain studies in tourism and agribusiness. This provided a great development opportunity for staff whilst also supporting another program in its infancy and demonstrating efficiency across the AusAID portfolio.

3.3 Sustainability

Sustainability has been a priority focus for CAVAC since program inception, as it is one of the critical elements of the M4P approach. Sustainability is seen as the continued access to key goods and services for farmers both now and into the future. In CAVAC's definition of sustainability, markets worked in by CAVAC must have the capacity to continuously improve the goods and services that farmers need.

Sustainability in irrigation is closely linked to the ability of local communities to raise enough funds for the maintenance of their irrigation schemes. CAVAC has been working hard with the three target PDWRAMs to establish and train the FWUCs for all its schemes. After the establishment of a FWUC continued follow-up support is provided to ensure the FWUC will function effectively and sustainably. The O&M work is known to be challenging. If CAVAC succeeds in making its FWUCs functional and this change is lasting, CAVAC is hoping that lessons learned can be used as a successful O&M model for Cambodia or even for the region.

Some of the FWUCs that CAVAC has established are now functioning with continued support from CAVAC. At these FWUCs, members are committed and active, and fees have been collected. Some have used their collected fees to fix collapsed embankments at their schemes. Examples include FWUCs at Tumnub Lok in Takeo and Angko in Kampong Thom. Some FWUCs have been using the collected fees to rehabilitate the main canal, for example the FWUCs at Krapum Chhuk and Kveng Tayi in Takeo. Some have been encouraging farmers to build secondary canals to increase the irrigated area of their schemes. A specific example is Sbov Andeth where 58 secondary canals have been built. CAVAC has also observed that some schemes have increasing involvement from the private sector through private water sellers. At this point in time, some have remaining budgets of a few thousands of US dollars. All this data shows an initial positive sign of sustainability within this sector.

Observing that private sector (including private water sellers and the Irrigation Service Centre [ISC]) involvement in the O&M of irrigation schemes, CAVAC will further investigate their roles to understand if and how their potential can be enhanced for the sustainability of irrigation schemes. CAVAC hopes that this study will document how private water sellers are currently functioning, what works best and the recommendations to improve the current functioning. This knowledge will then be shared with the FWUCs as well as any other interested stakeholders. In addition, CAVAC is also considering testing a new model by working with the ISC in Kampong Thom, an external service provider, to provide capacity building to the FWUCs in Kampong Thom. CAVAC hopes that much can be learned from working with this external service provider to improve FWUC capacity building activities in other provinces.

Due to the challenging nature of the O&M work, CAVAC understands that the efforts that CAVAC has been making in this area will at minimum contribute knowledge towards the sector and leave increased awareness of the O&M issue within the community.

Within the Agribusiness area, CAVAC is striving through continuous learning to achieve sustainability. Each team has continued collecting information through their research, studies, and surveys and analyses to decide what to focus on, what are likely to be sustainable, and what to do next in some interventions to enhance sustainability. For example, within the fertiliser market, after conducting fertiliser training with the 12 companies, the team has continued to follow up with a number of those companies to bring the intervention to the next level to increase the likelihood of sustainability. Now that company staff have been trained, CAVAC will support the companies to share that knowledge with retailers who will further spread the information to farmers. CAVAC is currently discussing options with six out of the 12 companies to conduct retailer training.

As economic sustainability cannot be separated from environmental sustainability, CAVAC has continued to pay much attention to environmental work. A new national Environmental Adviser started in January 2013, has learned quickly, and is able to keep CAVAC's work within this area on track. Some of the tasks completed within the past six months include:

- All new interventions were assessed, and where necessary, appropriate action was taken to mitigate the potential negative impact on the environment. Interventions in all the other components besides the irrigation component did not require further action beyond the Initial Environmental Assessments (IEAs).
- Environmental work on irrigation schemes is a long process. After conducting a feasibility study on an irrigation schemes, CAVAC conducts an IEA, which is followed by the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP). Based on the EMP, the monitoring activities will continue throughout from the design phase to the construction phase and on to the operation phase. For any scheme that specific action needs to be taken on a monitoring schedule and plan will be developed for that scheme. For example, the Spean Touch Canal in Kampot was found to be associated with Anlong Pring Wildlife Sanctuary. To mitigate any potential impact an end-tail water gate was constructed.
- A database known as the Environmental Management System (EMS) has been developed. It stores all environmental documentation for CAVAC's intervention activities across all the components and where relevant ongoing monitoring activities. This database has eased the

monitoring process, as it shows the information from each EMP in a summary form along with monitoring dates. At this stage, all the existing data has been stored, and new data will be continuously uploaded into the system.

4 MONITORING AND EVALUATION (M&E)

The implementation of CAVAC's activities is on track, and the changes in the support markets give confidence that the predictions made during the MTR are realistic. There are in some cases indications that the outreach and impact may be higher than expected (fertiliser and pesticide), and in other cases the MTR assessment may be too optimistic (model farmer training in the dry season). As expected, the actual impact on the farmers is still limited at this stage of the program, and does not yet justify large surveys to be conducted to capture these small initial impacts. Taking all this into account, CAVAC advises to continue to use the overall predicted outreach and impact from the MTR and to wait for the next six-monthly report for an updated assessment.

In this reporting period, CAVAC reported again on headline indicators of tAusAID. This reporting was complex as definitions are still open for interpretation. The impact is complex and capturing it in simple numbers may be necessary for portfolio management at AusAID, however numbers are only telling a very small part of the story.

In May 2013, CAVAC commissioned an external audit by an accredited auditor from the DCED. The results confirmed that CAVAC's M&E system complied with best international practice and that its implementation was on track. The report can be found on CAVAC's website (www.cavackh.org).

CAVAC is equally pleased with the progress of the M&E system in helping CAVAC to become a flexible and reflective learning organisation, one where the information from the field is well analysed and used to adjust the portfolio and the activities when the changing reality or initial signs of effectiveness require this.

CAVAC further developed and tested an important indicator in increased yields due to better fertiliser practices. The first impact surveys that will use this indicator are expected to happen towards the end of 2013. CAVAC has also started to develop the final major indicator that will capture the relationship between training on pesticide use and increased yields. This indicator is not expected to be needed before 2014.

Dynamic changes in the vegetable market, probably caused by the large labour demand, have made it difficult to develop a clear theory of change. As such, relying only on impact logics may make it hard to capture the impact in a few years' time. As an exception, CAVAC has therefore decided to add a large package of baseline data additional to the impact logic information.

5 GENDER EQUALITY

CAVAC has continued screening all new interventions to ensure activities are cognisant of the impacts of gender and disability in full participation of activities. Necessary recommendations were made to ensure that the distinctive roles of men and women were not overlooked in new interventions which could jeopardise their effectiveness. Within existing interventions, gender monitoring indicators have

been incorporated, and most monitoring activities have been scheduled to happen in the next half of 2013.

CAVAC conducted several gender studies in 2012 and in this reporting period CAVAC incorporated the results of those studies into intervention activities. In the group fertiliser training conducted in early 2013, information on the role that women play as retailers in the input markets led to changes in the curriculum of one of the training modules and training participants were asked to discuss differences in approaches to retailers given the gender dimension. CAVAC hopes that through this training, women's role as retailers was brought to the attention of fertiliser companies and that ideas about what fertiliser companies need to do for female retailers were discussed with their staff. In the pesticide retailer training with the PDAs, CAVAC staff met with the PDA teams to ensure that women's role as retailers was made known to them so that the training needs assessments (TNAs) and future training will be tailored to the needs of women.

In Irrigation and Water Management, the main objectives of gender mainstreaming are to have: better representation of women and their full participation in FWUC committees; and equitable benefits for female and male water users. These objectives have been communicated to FWUC specialists and the gender focal person in each PDWRAM. CAVAC has been working with these teams to ensure that men and women are equally considered in all aspects of irrigation and water management work. At this point in time, women constitute 16% (67) of 409 elected FWUC members across 13 irrigation schemes. Six irrigation schemes have one woman each who serves as a member at the committee level, the highest level of the FWUC structure. This data indicates that there is still limited female representation in decision making positions. CAVAC has continued to work with PDWRAMs to provide support to strengthen women's role on FWUC committees. In addition, two meetings have been organised in Takeo and Kampot to build networks among female FWUC members, to understand their challenges in their current roles and to provide necessary support.

CAVAC, in consultation with FWUC specialists of the three target PDWRAMs, has developed visual aid materials to be used in FWUC establishment and capacity building. The materials depict the important roles of women in the water user community in leadership positions and participation from female farmers in daily O&M of irrigation schemes.

In February 2013, CAVAC started the **Gender and Agricultural Development Research' Fund**. The purpose of this fund is to have a better understanding of gender issues in the fast-changing rural and agricultural sector of Cambodia as well as to stimulate the integration of aspects of gender into agriculture studies. The call for proposals attracted 19 proposals and of those, six were awarded. The topics of those six proposals include:

1. Agricultural income and gender;
2. Comparative study of gender constraints in hi-input and sustainable vegetable farming;
3. Gender role of indigenous rice farmers in Mondulkiri;
4. Livestock and gender in rural Cambodian households;
5. Social and economic impact on gender in mechanised agriculture; and
6. Understanding the Knowledge, Attitude, and Practice (KAP) of gender equality in youth education and work in rural areas.

These studies are expected to deliver results by December 2013 whereby CAVAC will organise a seminar for the researchers to present the results to related stakeholders as per their research topics.

CAVAC has worked to ensure that people with disabilities in its three target provinces have not been excluded from CAVAC's activities. In 2012, with the lists of people with a disability in each of the three target provinces from the Cambodian Disabled People's Organisation, CAVAC's trainers, especially in Kampot where there is a high population of disabled people, conducted training (using model farmer training curriculum) for the disabled people and their households. In March 2013, CAVAC's Gender and Disability Adviser met and interviewed 16 of the 210 disabled people in Kampot who had been trained by CAVAC to assess their knowledge, practice, and related barriers pertaining to their disabilities. The assessment found that most of those trained were rural poor wet season rice farmers whose decisions on fertiliser applications depended largely on their limited budget and the water conditions in rainy seasons. A few better-off farmers claimed that the training made them more knowledgeable about the use of fertiliser.

6 RISK MANAGEMENT

The inherent risks of working within the current program context have led to a well-developed, systematic approach to risk management within CAVAC. During the reporting period the impact of previous changes to policies or processes has come to fruition with continual monitoring programs in place and staff training and restructuring to ensure processes and policies are widely understood and followed.

One of the most challenging risks for the program is the relationship CAVAC has with RGC counterparts both in the provinces and at the national level. An added dimension to this relationship during the reporting period was the lead up to the national election to be held at the end of July 2013. Whilst CAVAC continues to build relationships with focal points within the two program counterpart agencies and within the three target provinces, the impact of the election and the resulting movement of staff post-election remains an area of concern with possible implications on the current progress made in this area.

Processes and policies which include risk mitigation strategies have evolved with the needs of the program and are well understood by staff. In the last six months there has been a focus on ensuring systems including the financial management, procurement, administration, environment and safety compliance monitoring reflect the current needs of the program. The CAVAC management team has worked to update program policies, restructured teams to ensure efficiency, clarified roles and responsibilities, conducted audits on financial, procurement and administrative systems and provided staff training on key program policies.

6.1 Operational risks

CAVAC continues to monitor and adjust program planning to reflect operational risks. As highlighted previously in this report, risks related to issues such as the rural labour situation in Cambodia, for example, have been, and will continue to be, taken into consideration by the CAVAC team with adjustments made accordingly to minimise the risks identified. Risks which remain a focus for the program at this stage of implementation include: risks related to the irrigation component such as

provision of land for schemes, the establishment of O&M systems and construction risks; operational and security risks related to the national election and effective environmental management and personnel management.

The irrigation component remains a high risk area of the program's work. Re-structuring the irrigation program with focus on a specific provincial area for each engineering and O&M team has enabled team members to foster strong relationships with local communities, FWUCs and provincial counterparts. These relationships make it easier for communication on issues around ownership of canals, consent for canal construction and areas of risk such as UXOs. Moreover, these relationships have generated greater information sharing on possible areas of risks such as construction safety and drowning.

Risks during the construction process are particularly high especially, in regards to ensuring continued understanding of land loss requirements, the safety of construction sites and the quality of timeliness of work completed by the contractor. To compliment regular monitoring visits by the risk management focal point and irrigation component staff, CAVAC has appointed an independent site supervisor located in each target province. Trained by CAVAC to identify possible risks, the supervisor visits the sites in their province daily and reports back to CAVAC to ensure timely responses to possible issues. CAVAC continues to experience delays in canal construction. Whilst this was expected during the lead up to the national election, CAVAC aims to increase the effectiveness of construction agreements in dealing with these issues in new and innovative ways during the next round of contracts for the 2013 / 2014 infrastructure activities.

A number of incidents have occurred during the reporting period which has shown the strengths of the current risk management systems especially in regards to the irrigation component activities. Continual monitoring of CAVAC construction sites by the risk management focal point has led to the identification of a number of potential safety risks. Two pits in separate locations in Kampong Thom were fenced to limit access by the local community and at the end of the last reporting period 12 off-take structures at Prey Rumdeng canal were filled and the design was modified to limit safety concerns.

UXOs have been found at one CAVAC construction site and one possible site (preparation for construction work at the site is to be commenced shortly). Contractors uncovered an unexploded bomb at Hay Saun Canal and during the scoping process community members alerted the CAVAC team to possible UXOs in the area of Reservoir 77. In all cases, the area was immediately vacated and work halted. CMAC was then contacted to complete an urgent survey of both sites and then commissioned to clear the area. The possible presence of UXOs at CAVAC construction sites is checked during the design phase through conversations with the community and provincial authorities and during the environmental assessment where the site is cross-checked with RGC mapping of potential UXO sites.

CAVAC's environmental management system continues to be strengthened with the national Environmental Adviser engaged at the end of the last reporting period. The Environmental Adviser conducts regular monitoring visits to check compliance with recommendations of the international Environmental Adviser and manages content updates for the EMS database. While work remains in ensuring communication flows effectively between CAVAC staff and the Adviser, the increased resources and clarification of roles and responsibilities within the newly approved EMS has strengthened CAVACs responses to environmental risks.

As the national election approaches in July 2013, CAVAC has continued to monitor both the relationship and security risks involved in conducting activities over this period. A security plan specifically focused on the national election was developed through consultation with staff and counterparts. CAVAC staff have been careful to ensure clear communication with provincial authorities for activities taking place during the month long election campaign. Staff and contractors conducting activities within the provinces are, on advice from the government, only meeting a small number of individuals in the provincial towns. Given this, model farmer training has been postponed for the month with trainers focused on updating their knowledge with a formal training program. Travel during the last week of the campaign was cancelled, with all staff participating in a number of training workshops based in the Phnom Penh office.

In the last six months, CAVAC has focused on continuing to strengthen and update financial, procurement and administrative systems. Staff have conducted a structured review of processes and policies complimented by staff training. AusAID fraud training has been conducted for staff, and the training program has been translated into Khmer to ensure consistent understanding of CAVAC policies. Internal audits have been conducted by Cardno head office staff in the areas of administration and HR management, finance and procurement and manuals have been updated based on audit recommendations. Procurement systems have been strengthened through the introduction of a process which clarifies all staff roles and responsibilities in the procurement process and the identification of issues and risks earlier in the process, especially as it relates to negotiations with partner organisations. With a view to continually strengthen these processes, CAVAC will look into the possibility of strengthening the fiduciary risk assessment of partner organisations by checking organisation's ownership arrangements.

CAVAC's personnel management strategy of hiring less experienced personnel and providing focused training to enable growth within the flat management structure has been further refined. The new unit structure within the Agribusiness and Information Systems component and the provincial focus within the Irrigation and Water Management component has meant that local staff have started to take more ownership of the management of interventions, enabling work progress to be realised more quickly and managers to focus on strategic planning and quality assurance. CAVAC has also continued to search for innovative training opportunities for staff. Given CAVAC's current stage in implementation and operating principles it has been difficult to find training opportunities which fulfil current requirements for staff members. With this in mind CAVAC staff have joined learning events with the MDF program in Timor Leste and hosting the MDF team in Phnom Penh, learnt about media activities from the Katalyst Program in Bangladesh and five staff were sent to attend an M4P forum in Thailand where staff from six M4P programs met and exchanged experience and lessons learned on the M4P approach.

6.2 Reputation and relationship risks

The relationship with the RGC, both MAFF and MOWRAM and their provincial departments, continues to improve. The relationship with PDWRAM, as highlighted in the previous report, has been an area of concern, however CAVAC is cautiously optimistic that this relationship is slowly improving. The appointment of a new Deputy Team Leader (DTL) based within MOWRAM during the period has increased CAVAC's profile both within MOWRAM and the PDWRAMs. A combination of three monthly coordination meetings at MOWRAM to discuss CAVAC related issues, the engagement of Mr Koeut

Kittineath as DTL and some changes in personnel working with CAVAC at the PDWRAM level has improved the relationship between the parties. Mr Kittineath has joined CAVAC staff on a number of field visits to the provinces and has assisted in the development of a more effective working relationship. CAVAC remains aware that gains made over the period may be impacted by personnel changes after the national election.

In the build-up to the election, CAVAC has been careful to ensure that the program remains apolitical. Additional follow up on requests from partners has been conducted to clarify that CAVAC support or participation is not contributing to wider electioneering activities. Whilst remaining responsive to partners, CAVAC has limited the visibility of the program and participation of staff in events that could be considered part of the election campaign. In close collaboration with provincial RGC partners, CAVAC has monitored activities conducted during July within the provinces to make sure that they comply with provincial directions including limiting association with the campaign (i.e. not meeting with farmers wearing party t-shirts or hats, etc.).

As previously reported, the move to output based contracts has contributed to the relationship between the parties. PDA's continue to work effectively with output based contracts, in some cases providing feedback on progress and contract or invoicing modifications, ensuring effective contract management and performance monitoring. CAVAC is now working with GDA to develop the same level of understanding of the requirements.

ANNEX 1: INTERVENTION UPDATE

Number	Intervention Title	AWP
RICE SEED MARKET		
Inp 10.2	Improving quality and availability of commercial seed	1.2
Inp 11.2	Providing training to small seed producers (production knowledge)	1.2
Inp 11.3	Supporting associations to promote modern wet season rice seed varieties and market access for rice seed	1.2
Inp 12.9	Strengthening production knowledge to enhance availability of good quality rice seed in the market	1.2
Inp 12.10	Dry season rice seed market	1.2
FERTILISER MARKET		
Ext 10.1	Supporting a fertiliser company to improve its information services to farmers	1.2
Inp 10.1	Supporting a fertiliser company in providing training to retailers	1.2
Inp 10.3	Support to a fertiliser company in quality assurance	1.2
Inp 12.4	Supporting fertiliser companies in staff capacity building and field demonstrations	1.2
Inp 12.5	Fertiliser forum	1.2
Inp 12.6	Supporting an organic fertiliser company to provide better training to farmers	1.2
Inp 12.8	Supporting a fertiliser company in staff capacity building and pilot retailer training	1.2
Inp 12.11	Support to a fertiliser company in its retailer training and retailers' field demonstrations	1.2
PESTICIDE MARKET		
Inp 11.4 and Inp 12.1	Supporting a local pesticide company through capacity building for technical staff and information system strategy development	1.2
Inp 12.2	Supporting a pesticide company to provide better training to farmers	1.2
Inp 12.13	Support to a pesticide company in its pesticide wholesaler / retailer training	1.2
Inp 13.4	Pesticide retailer training in partnership with PDAs	1.2
RICE EXPORT MARKET		
Mar 11.1	Technical assistance on rice and rice seed production for export markets	1.2
Mar 11.2	Feasibility study of warehouse receipt system	1.2
Mar 12.1	Export promotion – support to association market linkages	1.2
Inp 13.3	Improving Golden Daun Keo Rice Mill's quality of paddy of export varieties	1.2
VEGETABLE MARKET		
Inp 12.3	Vegetable farmers' practice change	1.2
Inp 12.7	Vegetable seed retailer outlet training	1.2
MEDIA MARKET		
Ext 11.1	Support to a media agency to produce quality TV program	1.2
Ext 13.1	Support to media research companies	1.2
WIDER MARKET		
Ext 10.2	Creating awareness, interaction between support providers and sources of information on the benefit of better information	1.2
Ext 10.3	Pilot training methodology for model farmers to improve role and knowledge of model farmers	1.2
Ext 11.3	Assisting training and information system support providers with training materials, capacity building and promotion	3.2
Ext 11.5	Linking events	1.2
Ext 11.6	Supporting a private call centre	1.2

Number	Intervention Title	AWP
IRRIGATION CONSTRUCTION		
Takeo		
Irr 10.1	Development and construction of an irrigation scheme: Krapum Chuk Canal, Takeo Province	2.3
Irr 10.3	Development and construction of an irrigation scheme: Tumnub Lok Canal, Takeo Province	2.3
Irr 10.4	Development and construction of an irrigation scheme: Kveng Tayi Canal, Takeo Province	2.3
Irr 10.6	Development and construction of an irrigation scheme: Sbove Andet Canal, Kampot Province	2.3
Irr 12.3	Development and construction of an irrigation scheme: So Hang Canal, Takeo Province	2.3
Irr 12.4	Development and construction of an irrigation scheme: Prey Rumdeng Canal, Takeo Province	2.3
Irr 12.5	SIF: Support to BANTIC and PLOVIC in rehabilitating two secondary canals in Takeo	2.2
Irr 13.1	Development and construction of an irrigation scheme: Rokar Chhuk Canal, Takeo Province	2.3
Irr 13.2 and Irr 13.3	SIF: Support to BANTIC and PLOVIC in dredging their main canal in Takeo	2.2
Kampot		
Irr 10.2	Development and construction of an irrigation scheme: Prey Tonle Canal, Kampot Province	2.3
Irr 10.7	Development and construction of an irrigation scheme: O'Kak Canal, Kampot Province	2.3
Irr 10.8	Development and construction of an irrigation scheme: Thnoat Canal, Kampot Province	2.3
Irr 12.1	Development and construction of an irrigation scheme: Spean Touch Canal, Kampot Province	2.3
Irr 12.2	Development and construction of an irrigation scheme: Prey Leu Canal, Kampot Province	2.3
Irr 13.1	Development and construction of an irrigation scheme: Hay Saun Canal, Kampot Province	2.3
Irr 13.1	Development and construction of an irrigation scheme: Chamlong Chrey Canal, Kampot Province	2.3
Irr 13.1	Development and construction of an irrigation scheme: Reservoir 77, Kampot Province	2.3
Kampong Thom		
Irr 10.12	Development and construction of an irrigation scheme: Thnoat Chum Canal, Kampong Thom Province	2.3
Irr 10.13	Development and construction of an irrigation scheme: Angko Canal, Kampong Thom Province	2.3
Irr 13.1	Development and construction of irrigation schemes: Secondary Canals 1,2, and 3 of the 6 January Canal, Kampong Thom Province	2.3

Legend**Res** = Research**Inp** = Input Markets**Mar** = Production Markets**Ext** = Extension**Irr** = Water and Irrigation**Bee** = Business Enabling Environment**Gen** = Others

INTERVENTION UPDATE: Int. No: Inp 10.2 AWP No: 1.2 Date: 30 June 2013	
Name:	Improving quality and availability of commercial seed
Summary:	<p>The complex nature of commercial rice seed enterprises requires intensive capital investment, skilled production knowledge, effective and efficient human resource management and good branding. The main objective of rice seed producers is to produce quality rice seed to meet current market demand. Therefore, CAVAC's intended intervention plans are divided into two phases: 1) Technical Assistance and Business Development; and 2) Business Expansion.</p> <p>CAVAC's intervention plan with Mr. Vanna included:</p> <ul style="list-style-type: none"> – Conducting a study on the intellectual property rights for non-Cambodian rice varieties; – Hiring an international seed production specialist from Vietnam to train key technical staff of Mr. Vanna's company, Srov Pouch Meas, Co., Ltd. (SPM), in seed production techniques; and – Hiring a company to develop a Rice Seed Business Plan for SPM. This plan assisted the company's strategic direction and informed methods to seek new partners. <p>SPM also requested that CAVAC provide business expansion assistance, including developing a marketing strategy and plan (marketing campaigns and establishing a distribution network). Mr. Vanna began the registration process of his company as CAVAC could only provide this support if the company was registered. Once this had been completed, the AIF application for business expansion assistance was submitted and approved by CAVAC. Mr. Vanna requested that CAVAC keep this new intervention on hold for several months due to the company's land tenure issues.</p> <p>In early 2013, SPM approached CAVAC again to request for equipment support. This new request has been internally analysed and reviewed by the team and has not been approved because CAVAC understands that the rice seed business is not a priority for Mr. Vanna given he has many businesses.</p> <p>CAVAC has decided to drop this intervention to focus resources elsewhere.</p>
Achievements to Date:	<p>Activities completed to date:</p> <ul style="list-style-type: none"> – A study was completed on the intellectual property rights for non-Cambodian rice varieties. – A rice seed business plan for SPM was developed. – A rice seed production manual was developed. – Rice seed production training for technical staff (theoretical and practical concepts) was held. – SPM's AIF application on the business expansion assistance project was approved (although it has not progressed).
Next Steps:	Continue conducting M&E assessment on the first round of activities: rice seed production technical assistance and business plan development.
Surprises, Adjustments or Problems:	SPM has faced land tenure issues because some of its dry season rice cultivation areas are situated in Zone 3 of the Tonle Sap area, a zone banned by the government and therefore no crop cultivation is allowed.
Lessons Learnt:	It is hard to find committed partners in the rice seed market as the rice seed business is costly as well as risky.

INTERVENTION UPDATE: Int. No: Inp 11.2 AWP No: 1.2 Date: 30 June 2013

Name:	Providing training to small seed producers (production knowledge)
Summary:	<p>The intervention aimed to provide individual small seed producers with training in appropriate seed production techniques and seed marketing knowledge.</p> <p>It was expected that the training in appropriate seed production techniques would enable small seed producers to increase their seed quality – resulting in better quality seed available for customers (mostly smallholder farmers), thereby leading to better yields. However, there is no expectation that seed production will increase in the short term, as seed production is labor intensive and practices are not presently mechanised.</p> <p>After the training, an informal assessment was conducted with some of the trained seed producers. The assessment revealed that most smallholder producers practiced some of the techniques on the production of paddy (as farmers call seed) while large scale producers could not apply the recommended techniques due to high labour costs. The assessment also revealed that farmers exchanged paddy with other farmers or sold it at the market price for paddy. These factors lead the producers to produce only good paddy, not seed per the definition of the International Rice Research Institute. Confirmation will be done through the following M&E assessment of the intervention.</p>
Achievements to Date:	<p>Three rice seed production training sessions were conducted for 61 participants (including four PDA staff members) in Takeo and Kampong Thom.</p> <p>An informal assessment was conducted on trained seed producers. In addition to the findings mentioned above, producers who are producing seed for the Agricultural Quality Improvement Project (AQIP) Seed Company were able to remember training materials well on the rice seed production techniques while large scale producers (2-3 hectares) also retained this information but had difficulty applying the techniques. For small land holding producers, they had knowledge on proper rice production techniques but had less access to information on the proper use of inputs, including fertiliser and pesticide, compared to seed producers for AQIP Seed Company.</p> <p>A second assessment or follow-up was made through phone calls in May 2013, which found that some producers (AQIP producers) still continued to produce and sell seed while some others were only able to sell their seed as paddy. Most of the producers with smaller plots of land could apply proper production techniques, such as land preparation, single row transplantation, and roguing; however, the bigger producers tended to broadcast their seed and did not do enough roguing due to labour shortages.</p>
Next steps:	<p>Continue monitoring the outcomes of the training in rice seed production techniques.</p> <p>CAVAC will not support further interventions with small seed producers due to the nature of the seed market given the culture of retaining seed and exchange paddy with seed.</p>
Surprises, Adjustments or Problems:	<p>Some neighbouring farmers have provided feedback that some of the production techniques, such as single row planting, were useful for their paddy production with seed reduction and better yields. There is no concrete evidence to show that small seed producing business is not profitable or sustainable depending on the location and local demands. Exchanging paddy for good seed and using retained seed present challenges to seed producers. To CAVAC, the culture of paddy exchange allows a faster and wider spread of new varieties that provide higher yields to farmers; therefore it is, in a way, beneficial, especially in areas where farmers are still producing traditional varieties. However, most seed producers are still using traditional varieties.</p>
Lessons Learnt:	<p>Applying all techniques will increase production costs and therefore only small producers are most likely to adopt proper techniques unless the price of seed is increased and accepted by farmers.</p>

INTERVENTION UPDATE: Int. No: Inp 11.3 AWP No: 1.2 Date: 30 June 2013

Name:	Supporting associations to promote modern wet season rice seed varieties and market access for rice seed
Summary:	<p>CAVAC's intervention to support rice seed production associations is in line with the RGC's policy to support the establishment of farmers' cooperatives. The policy enables farmers to organise themselves into legally recognised cooperatives, which could improve their market positions and access to financial and technical support.</p> <p>CAVAC supports associations based on their constraints in seed production techniques and knowledge of rice seed market access. This could include aspects of optimal input usage, quality control of seed production, crop protection, and post-harvest management. CAVAC also supports rice seed associations in developing market access strategies so that they can become self-reliant in the long run. CAVAC links rice seed production associations to rice seed sellers, paddy traders, and rice millers through field day activities in order to create linkages among all the actors in the market.</p> <p>Activities under this intervention are expected to provide a signal to wet season rice farmers on new and more profitable practices. CAVAC expects farmers to better use inputs and adopt modern varieties that are appropriate for their conditions.</p>
Achievements to Date:	<p>In 2011, CAVAC supported four associations to conduct 11 paddy field demonstrations. CAVAC organised four field days to share demonstration results with farmers within the communities and to link associations with millers and rice / paddy traders to stimulate commercial interest for modern wet season varieties.</p> <p>An adoption study was conducted in early October 2012. The study found that the adoption rate of Phka Romdoul variety was high in commercial areas such as Kvek and Champei but it was very low in non-commercial areas such as Boeung Nimul. Boeung Nimul seems isolated from the market and has had no record of producing Phka Romdoul before. Thus, paddy traders have never approached this area for the Phka Romdoul variety.</p> <p>In the first half of 2012, 10 rice seed producers (who are association members) have been trained by CAVAC in rice seed production techniques. In the second half of 2012, some association members started growing the preferred Phka Romdoul variety. CAVAC has worked with three associations to organise 10 rice seed production demonstrations and with one association in Po Samroang on paddy production.</p> <p>In addition, four field days for rice seed field demonstrations were conducted to link actors on the supply side (such as seed producers) with the actors on the demand side (such as farmers, village chiefs, commune council members, paddy traders, seed sellers, and millers).</p> <p>In this first half of 2013, the rice seed market strategies for Kvek Meanrith, Champei and Boeung Nimul associations were developed. CAVAC has discussed finding ways to ensure sustainability of the associations' seed production while achieving the goal of having wet season rice farmers shift from producing traditional to modern varieties that are higher-yielding and further boost incomes. The first action is likely to be the implementation of one of the recommendations in the strategies, which will require associations to take the lead in conducting paddy field demonstrations of modern rice varieties by using their seed on interested farmers' fields in different locations and providing technical support to those farmers. Input retailers, paddy traders, or rice millers will also take part in this activity through contributing to the cost of fertiliser to be used in the fields. CAVAC will act as a back-stopper on technical aspects and other relevant expenses.</p> <p>A study on Phka Romduol variety adoption as a result of CAVAC's paddy field demonstrations with four associations (Champey in Takeo and Sre Cheng and Boeung Nimul in Kampot, and Kvek Meanrith in Kampong Thom in 2011) has been conducted. The finding was positive. Despite the earlier introduction of the variety, CAVAC's field demonstrations and field days contributed to increased production areas of Phka Romduol. The area increase was in total 135 hectares (92 households) in the four communities of the four associations.</p>
Next Steps:	<p>Assess the implementation of the market access strategies of the associations and determine how CAVAC can provide further support to them in the implementation of the strategies.</p> <p>Finalise the decision on supporting associations in conducting paddy field demonstrations with the involvement of other stakeholders.</p>
Surprises, Adjustments or Problems:	<p>There are concerns over how the new field demonstrations should be conducted and who should benefit from the activity. Difficulties so far include identifying the right locations and the best farmers to conduct field demonstrations and ensuring providers of fertiliser can also benefit.</p>

Lessons Learnt:	<p>Associations can be considered as change agents. They have great potential to contribute to the adoption of modern rice seed varieties and to serve as sources of knowledge on modern varieties and proper usage of inputs.</p> <ul style="list-style-type: none"> – Conducting field demonstrations is still a valid tool to introduce modern varieties, and there are a few worth considering points related to field demonstrations: – Adoption is faster when farmers know that the varieties they are considering have a high market potential. Therefore, prior discussions with market actors to confirm the relevant information for farmers should be carried out. – Ensuring local constraints are not hindering the adoption of new varieties is important, such as unsuitability of the agro-ecosystem. – Locations for field demonstrations are important. Demonstrations should be easily accessible for farmers with attractive sign boards, including information on the varieties being demonstrated. – Cultivating techniques should be taken into account when conducting field demonstrations, as new varieties require proper use of fertiliser and care. – More farmers, especially female ones, should be included in field demonstrations as they play the role of 'change agents' in new variety adoption.
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INTERVENTION UPDATE: Int. No: Inp 12.9 AWP No: 1.2 Date: 30 June 2013	
Name:	Strengthening production knowledge to enhance the availability of good quality rice seed in the market
Summary:	<p>The complex nature of commercial rice seed enterprises requires intensive capital investment, skilled production knowledge, effective and efficient human resources management, and good branding. The main objective of rice seed producers is to produce quality rice seed to meet current market demand. Therefore, CAVAC's intended intervention plans are divided into two phases: 1) technical assistance and 2) Rice Seed Market Access Strategy development.</p> <p>During an informal market assessment, one seed producer (Mr. Sokunthea) showed a commitment toward improving the quality and availability of rice seed.</p> <p>CAVAC's intervention plan with Mr. Sokunthea includes:</p> <ul style="list-style-type: none"> – Hiring a local rice seed market access expert to help Mr. Sokunthea's team develop a rice seed market strategy and an implementation plan for his rice seed business. – Hiring a local seed production specialist to provide Mr. Sokunthea's team with theoretical and practical knowledge about proper seed production for both wet and dry seasons.
Achievements to Date:	<p>A rice seed market access strategy for Mr. Sokunthea has been developed.</p> <p>A part-time rice seed production consultant was selected to support Mr. Sokunthea, and a detailed work plan for the whole production cycle has been discussed with Mr. Sokunthea as well as the consultant.</p>
Next Steps:	<ul style="list-style-type: none"> – Follow up with Mr. Sokunthea on the rice seed production plan. – Sign a contract with the selected consultant to provide Mr. Sokunthea's team with theoretical knowledge and on-the-job training in rice seed production. – Follow up with Mr. Sokunthea on how he can make use of the Market Access Strategy and how he will plan to implement the recommendations in the strategy.
Surprises, Adjustments or Problems:	Mr. Sokunthea's irrigation system had been damaged, so the plan for seed production has been delayed. As such, the recruitment of the rice seed production consultant has also been delayed.
Lessons Learnt:	None at this stage.

INTERVENTION UPDATE: Int. No: Inp 12.10 AWP No: 1.2 Date: 30 June 2013	
Name:	Dry season rice seed market
Summary:	<p>Cambodian dry season rice farmers are considered commercial farmers, and the majority of these farmers use rice varieties that respond to paddy buyers' demands and requirements.</p> <p>Without any support, Cambodian medium and large dry season rice seed producers are struggling with access to sources of good seed, knowledge of proper seed production, and how to market their quality seed.</p> <p>Through this intervention, CAVAC planned to work with existing medium and large seed producers to improve their seed quality supply to the market. The intervention was supposed to focus on providing seed producers with proper seed production techniques through training and linking producers with the best local or international seed production companies through study tours.</p> <p>In 2012, CAVAC conducted training in dry season rice seed production techniques in Kampong Thom. A quick assessment was conducted which revealed that most seed producers produced good paddy, not seed, and that the culture of exchanging seed also played a main role in the dry season rice seed market. As rice seed business is associated with high risks and it is less likely that the currently so-called seed producers will become legitimate seed producers, CAVAC understands that it cannot contribute much to addressing any constraints in this market.</p>
Achievements to Date:	<p>A training session was conducted in July 2012 for 24 dry season rice seed producers in Kampong Thom.</p> <p>After the training, a quick assessment was conducted. Most seed producers produce good paddy, not seed.</p> <p>Within the past six months, CAVAC contacted several dry season rice seed producers outside of its target provinces (Kampong Cham and Prey Veng provinces) to understand their rice seed production and business situation.</p>
Next Steps:	This intervention has been dropped.
Surprises, Adjustments or Problems:	<p>The rice seed market is very complicated from the policy level to the farmer level, and that makes it hard for seed producers to secure their business in this market. The price of rice seed has not been high enough to compensate for the high cost of the recommended rice seed production techniques.</p> <p>This has led producers to keep producing only good paddy to sell as seed. Moreover, Vietnamese varieties are popular for the dry season rice cultivation, and those varieties are not supported by the RGC policy. The rice seed business is considered to have a number of high risks associated with it.</p>
Lessons Learnt:	It is challenging to find existing seed producers who conform to seed production standards as defined by IRRI.

INTERVENTION UPDATE: Int. No: Ext 10.1 AWP No: 3.2 Date: 30 June 2013

Name:	Supporting a fertiliser company to improve its information services for farmers
Summary:	<p>CAVAC's interviews with farmers and retailers demonstrated that most retailers did not have the knowledge of appropriate fertiliser application. Farmers use fertiliser based on peer advice, trial and error, and available budget. In most cases this method does not provide an optimal yield. The purpose of this intervention was to enhance the capacity of HPC's information services for farmers. CAVAC was working with HPC on:</p> <ul style="list-style-type: none"> – building its' staff capacity on fertiliser use to enable them to effectively operate help desks; – retailer training workshops; and – field demonstrations. <p>In 2011, two HPC staff members were sent to Vietnam to attend a short training session on fertiliser use in rice cultivation. CAVAC also supported HPC to conduct 120 field demonstrations, two field days in Kampot and Takeo, and two training workshops in Kampot and Kampong Thom. This intervention was completed in 2012.</p> <p>M&E activities have been conducted by collecting information from HPC staff, trained retailers and farmers. The M&E assessment found that the capacity of staff trained in Vietnam remained low after the training, and as such they were not able to give appropriate telephonic advice. The M&E also revealed that retailer training and field demonstrations were of low quality.</p> <p>CAVAC discussed the M&E assessment results with HPC. Both CAVAC and HPC agreed that HPC did not have enough field staff and that they had lacked technical knowledge.</p> <p>To strengthen the company's quality of information services, two staff member from HPC (one had previously been trained in Vietnam) were trained alongside 11 other fertiliser companies' personnel. In early 2013, training was conducted in fertiliser use, participatory retailer Training of Trainers (TOT), and the retailer business case.</p>
Achievements to Date:	<p>Two staff members from HPC were sent to Vietnam for a short training course on fertiliser use in rice cultivation.</p> <p>The company completed 120 paddy field demonstrations, two field days in Kampot and Takeo, and two training workshops in Kampot and Kampong Thom.</p> <p>Some M&E activities have been conducted. Most recently, a survey was conducted on the knowledge and practices of field demonstration farmers and other farmers for both dry and wet season rice cultivation. The results are currently being analysed.</p>
Next Steps:	Analyse the results of the survey, and continue monitoring this intervention.
Surprises, Adjustments or Problems:	The retailer training was not conducted properly and as a result trained retailers did not gain sufficient knowledge to give advice to farmers. In regards to field demonstrations, some farmers were given fertiliser without proper usage instructions, or were not given fertiliser on time.
Lessons Learnt:	<p>CAVAC needs to consider the capacity of the company's staff in carrying out agreed activities. Sometimes, a company may not have enough capacity to carry out a large amount of work and that may affect work quality.</p> <p>With a farmer / retailer training intervention, having training work conducted solely by companies is risky. Companies often do not want to invest resources in training materials and methodology, and they are usually overly complex as well as expensive.</p>

INTERVENTION UPDATE: Int. No: Inp 10.1 AWP No: 1.2 Date: 30 Jun 2013

Name:	Supporting a fertiliser company in providing training to retailers
Summary:	<p>Farmers' lack of knowledge on fertiliser application is a major issue that can adversely affect crop yields. CAVAC works with fertiliser companies to provide better services to farmers through their retailers. Fertiliser retailers interact directly with farmers, and can provide greater outreach than traditional extension approaches. The expected impact of a retailer's provision of ding services (such as advice to farmers) is that demands for that retailer's product increase, providing an incentive for the retailer to continue supplying information on the use of the product. If a retailer becomes successful using this approach, other retailers will offer similar services in order to retain their customers.</p> <p>Additionally if more products and services are offered by retailers, then more information and choices are available to farmers. Farmers will increasingly be able to access information on the appropriate application of fertiliser to more efficiently produce crops. Further, through training retailers, the fertiliser company will enhance its relationship with retailers, enabling improved quality control at the retailer level.</p> <p>From the outset, CAVAC was able to build a close partnership with Ye Tak, a local fertiliser company in Cambodia, and to support it with retailer training. Prior to CAVAC's assistance, Ye Tak conducted mostly national retailer training workshops, which were in the format of a promotional product campaign rather than technical training. At the beginning of the intervention, CAVAC supported Ye Tak to conduct one national retailer training workshop, and let Ye Tak take the lead in that event. A joint assessment of the workshop revealed that improvements on the technical information as well as the training methodology were needed, and that the training should focus more on retailers rather than on wholesalers.</p> <p>Ye Tak accepted the assessment results and continued working with CAVAC to conduct provincial retailer training with improvement to its training curriculum and methodology. Six provincial retailer training sessions were conducted in 2012.</p>
Achievements to Date:	<p>Two TNAs, one national retailer training session and six provincial retailer training sessions were conducted.</p> <p>CAVAC's M&E team evaluated retailer training conducted by Ye Tak. Key lessons learned have been collected and shared within the CAVAC team in order to improve next retailer training activities. Findings were that Ye Tak had added two staff members into its information system team – one newly recruited and one internally promoted. Ye Tak now has five technical staff members that provide information services.</p>
Next Steps:	Continue to monitor the outcomes and impact of this intervention.
Surprises, Adjustments or Problems:	Ye Tak's product supplier, Binh Dien Fertiliser Factory, requested that CAVAC continue to support the nationwide retailer training. The company was willing to increase its contribution to the training activity.
Lessons Learnt:	<p>Before implementing training, CAVAC and Ye Tak conducted TNAs among major retailers at the provincial and district levels. However, CAVAC later found that training participants included retailers from the village level as well, and that they carried a different level of knowledge and understanding in the use of fertiliser.</p> <p>Retailers play a very good role in providing technical knowledge to farmers. Currently, farmers tend to accept retailers' advice even more so if retailers demonstrate their technical knowledge in the field. In the past, farmers believed that retailers never farmed and as such retailers would not be able to provide advice to them.</p> <p>In working with partners, it is important to discuss in advance the kind of data that CAVAC needs from them for M&E activities.</p>

INTERVENTION UPDATE: Int. No: Inp 10.3 AWP No: 1.2 Date: 30 June 2013

Name:	Support to a fertiliser company in quality assurance
Summary:	<p>According to information gathered during CAVAC's fertiliser supply mapping and analysis, farmers were facing issues with adulterated fertiliser quality. Adulterated fertiliser has led to low yields and low returns. This finding was supported by a World Bank investigation undertaken in 2010 by the International Fertiliser Development Centre (IFDC) to assess fertiliser quality in Cambodia. It found that: 'poor fertiliser quality damages farm yield, which could erode farmers' confidence in their use.'</p> <p>Based on Ye Tak's request, CAVAC hired an international fertiliser quality assurance consultant to study and assess the quality of Ye Tak's products and services as well as its stakeholders' confidence in delivering fertiliser. The consultant visited a number of retailers (small scale to large scale) in 15 different provinces. The consultant also assessed the operations of Ye Tak's competitors. However, the study found no evidence (outside of what could be considered as an occasional practice) of the misuse of the Ye Tak brand to promote sales of adulterated fertiliser or as a means to promote a competitors' product. The study suggested that the problem of adulterated fertiliser occurred only during the time when the commodity price in the international market increased, particularly during 2007-2008.</p> <p>More fertiliser companies are currently registering in Cambodia. The companies appear to focus on the product quality and information services. Any company that has not improved product quality and information services has faced a decline in sales volumes and reputation. For example, 4-6 years ago E-Skor fertiliser company was one of the top five market leaders; today it is just a small company within the fertiliser market.</p> <p>Based on discussions with Ye Tak's Technical Manager in late 2012, fertiliser quality is no longer an issue for the company. He mentioned that the chance for fertiliser being adulterated had declined with the RGC promotion of the Law on the Management of Pesticides and Fertilisers.</p> <p>Realising that fertiliser quality was no longer a critical constraint in this market, CAVAC is no longer working in this area.</p>
Achievements to Date:	Ye Tak quality assurance assessment was conducted by an international consultant.
Next steps:	
Surprises, Adjustments or Problems:	
Lessons Learnt:	The perception of 'low fertiliser quality' might vary from the company level to farmer level. At the farmer level, it is possible that farmers do not get high yields due to inappropriate fertiliser application.

INTERVENTION UPDATE: Int. No: Inp 12.4 AWP No: 1.2 Date: 30 June 2013

Name:	Supporting fertiliser companies in staff capacity building and field demonstrations
Summary:	<p>With the rapid change within the fertiliser market, farmers need to keep up-to-date with technical information on the types of fertiliser available in order to maintain or increase yields and comparative advantage. Fertiliser companies should play an important role in providing information about their products. Most companies have some level of information services, however the quality of these services is often limited. This is likely to be due to a lack of technical knowledge and capacity to transfer knowledge to retailers / farmers.</p> <p>CAVAC aims to improve fertiliser companies' capacity to provide knowledge of best fertiliser management practices. This focuses on the '4R's – right type, right amount, right time, and right application – for farmers through the most preferred extension channel, which is the retailer network. Ultimately, CAVAC aims for farmers to know the economical and optimal use of fertiliser rather than just using fertiliser to get the highest yield.</p> <p>Through this intervention, CAVAC worked with 12 fertiliser companies to improve the capacity of their staff in three areas: 1) understanding the incentive to provide product information service and being able to develop business cases; 2) more appropriate technical knowledge of rice production; and 3) providing more effective training to their retailers (participatory training approach).</p>
Achievements to Date:	<p>Contracts were signed with 13 fertiliser companies to participate in this training (one company later dropped out due to its internal issue).</p> <p>Two training institutions were selected to conduct the training; the Agriculture Technology Services Association (ATSA) on technical knowledge of rice production, and SILAKa on the participatory training approach.</p> <p>Lessons learned from the previous retailer training were incorporated into the curriculum of this group training.</p> <p>Training on the three major topics mentioned above was conducted for 25 staff members from 12 fertiliser companies (including four females). The business case development session was tailored to meet the needs of the participants by CAVAC staff.</p>
Next Steps:	<p>Conduct M&E activities to monitor the outcome and impact of the group training activities.</p> <p>Discuss with some of the participants about the possibility of further collaboration.</p>
Surprises, Adjustments or Problems:	The training had to be delayed because it was difficult to select training providers with the criteria and qualifications that CAVAC had set.
Lessons Learnt:	<p>CAVAC found it difficult to access good trainers. CAVAC has learned that such training needs a great deal of time to organise. The more involved partners are, the more evenly the workload is split between CAVAC and partners. However, partners have limited abilities to manage the quality of work. Therefore, CAVAC has to carefully balance all these factors to maintain the quality of work.</p> <p>Most participants said they would commit to putting what they had learned into practice and that they would maintain the network among all the participants. Participating companies, which also distribute pesticides, have asked CAVAC to organise a similar training on pest management.</p>

INTERVENTION UPDATE: Int. No: Inp 12.5 AWP No: 1.2 Date: 30 June 2013	
Name:	Fertiliser forum
Summary:	<p>With the fertiliser market in Cambodia growing quickly, fertiliser companies are trying to get technical information from different sources. However, private companies and public agricultural research institutes have different approaches to applying fertiliser. These contrasting views have caused difficulties for farmers in making decisions and have further constrained productivity improvement.</p> <p>CAVAC once initiated conducting a fertiliser forum, bringing together scientists from research institutes, private companies, and other relevant participants.</p> <p>The main objectives were:</p> <ul style="list-style-type: none"> – To discuss issues around various fertiliser recommendations. – To minimise the gaps between knowledge provided by all stakeholders. – To discuss the practicality, economic efficiency, social impact, environmental impact and biosafety issues of organic, inorganic and bio-fertiliser. – To build the relationship between the public and private sectors. <p>However, CAVAC's KAP survey in early 2013 on fertiliser-yield response in rice production, with a sample of 1200 farmers, indicated that the yield response to fertiliser recommendations from private companies was already high. Based on this result, CAVAC has decided that a fertiliser forum should not be a priority at this stage.</p>
Achievements to Date:	<p>CAVAC's fertiliser team had discussions with a number of private fertiliser companies and institutions within the public sector in the first six months of 2012.</p> <p>During the TMR in May 2013, CAVAC decided to drop this intervention based on the results of its fertiliser KAP survey in early 2013.</p>
Next Steps:	
Surprises, Adjustments or Problems:	
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Inp 12.6 AWP No: 1.2 Date: 30 June 2013	
Name:	Supporting a fertiliser company to provide better training to farmers
Summary:	<p>Bayon Heritage Holding Group Co., Ltd. currently imports and distributes fertiliser for the rice and vegetable markets. The company's main information system activity is providing training in crop production to farmers using the company's products. However, the quality of its training was limited due to staff's poor technical knowledge and limited understanding of training methodologies.</p> <p>CAVAC designed an intervention with the company to improve its information system team's technical knowledge in rice and vegetable production and participatory training approaches.</p> <p>It is expected that this training will lead to better quality training for farmers – resulting in yield increases. In return, more farmers would buy fertiliser from the company on an ongoing basis.</p>
Achievements to Date:	<p>An AIF application was approved and a contract was signed between Bayon Heritage and CAVAC to conduct training in rice and vegetable production and effective ways to communicate with farmers.</p> <p>CAVAC and Bayon Heritage jointly selected ATSA to be the training provider.</p> <p>The training in rice and vegetable production and communication techniques was conducted for 43 field staff members (five females). A training report was submitted by ATSA.</p> <p>Based on a phone conversation with Bayon Heritage's Sales and Marketing Manager, staff now have more confidence in providing advice to farmers. This is to be confirmed through the M&E assessment.</p>
Next Steps:	Assess the results of this intervention with the company's staff and farmers.
Surprises, Adjustments or Problems:	Other companies have paid higher salaries to attract Bayon Heritage's key staff members who had been trained. So far, the company has lost 3-5 staff members to competitors.
Lessons Learnt:	As the company's product is organic, its yield impact on rice is marginal. It is expected that its yield impact on vegetables will be higher.

INTERVENTION UPDATE: Int. No: Inp 12.8 AWP No: 1.2 Date: 30 June 2013

Name:	Supporting a fertiliser company in staff capacity building and pilot retailer training
Summary:	<p>The results of the intervention to improve HPC's information services (Ext 10.1) found that HPC did not have enough capacity to provide participatory training to retailers and farmers, and as such the effectiveness of its earlier training was limited. Trained retailers and farmers could not recall the key message of the training based on an ad hoc assessment. To improve this, a new intervention was designed to improve the capacity of fertiliser company staff, including those from HPC.</p> <p>In addition to staff capacity building, the company requested that CAVAC support the development of an information system strategy. CAVAC was also asked to pilot the retailer training. Due to concerns that there are more fertiliser companies entering the market, HPC felt that it needed to have a good information system strategy in place to continue increasing its market share. HPC thought a clear information system strategy would help the company to implement its information system activities more effectively, as the strategy would help activity prioritisation and resource allocation.</p> <p>After a few rounds of discussions between CAVAC and HPC, HPC agreed to drop the request for support to develop an information system strategy due to its lack of internal capacity to implement the work. However, its interest in retailer training activities remains unchanged.</p>
Achievements to Date:	<ul style="list-style-type: none"> – HPC's AIF application on retailer training activities has been approved and the contract between CAVAC and HPC has been signed. – A detailed implementation plan for this intervention has been discussed and agreed between CAVAC and HPC.
Next Steps:	<ul style="list-style-type: none"> – Hire a consultant to work with HPC to develop the training curriculum. – Work with HPC to finalise the detailed training plan. – Monitor HPC's implementation of retailer training activities.
Surprises, Adjustments or Problems:	
Lessons Learnt:	CAVAC needs to monitor this intervention closely as the company's performance on the previous intervention was not always effective.

INTERVENTION UPDATE: Int. No: Inp 12.11 AWP No: 1.2 Date: 30 June 2013

Name:	Support to a fertiliser company in its retailer training and retailers' field demonstrations
Summary:	<p>The previous implementation of fertiliser retailer training (Inp 10.1) has shifted Ye Tak's focus from a national level training to more focused and demand-based training at the provincial level. The company has reallocated its budget to reflect this shift of focus.</p> <p>CAVAC has found that retailers have benefited from the training, although there is also some room for improvement. Retailers have gained knowledge on the use of fertiliser and have been providing advice on proper fertiliser application to farmers. This enables retailers to attract more clients and sell more products. Some have even assured farmers of the expected yields if farmers follow their recommendations.</p> <p>To build a sustainable market system, CAVAC has been working to improve the company's retailer capacity to deliver best advice to farmers. This intervention is divided into two parts:</p> <p>To arrange fertiliser retailer training to be conducted by the staff trained through group fertiliser training (Inp. 12.4). This will allow Ye Tak's staff to practice their knowledge and skills to ensure sustainability.</p> <p>To work with the company to build staff capacity in conducting field demonstrations and to support staff in transferring knowledge to retailers committed to providing better advice and services to their clients / farmers through field demonstrations. This will become a new business case for retailers. If retailers want to be successful, they need to be able to provide better advice and services and ensure more interaction between farmers and the company.</p>
Achievements to Date:	A contract for this intervention has been signed between Ye Tak and CAVAC.
Next Steps:	<ul style="list-style-type: none"> – Work with Ye Tak to develop a detailed implementation plan. – Hire a consultant to work with Ye Tak on curriculum development, and ensure that lessons learned from previous interventions are incorporated. – Develop participatory paddy field demonstration protocols and field day activity plan. – Monitor the process of selecting retailers to conduct paddy field demonstrations for both wet and dry seasons. – Organise field demonstrations to be conducted and managed by retailers and the company's staff. – Support the company in organising field days to create interest among retailer community on the importance of field demonstrations.
Surprises, Adjustments or Problems:	The process of negotiating the contract with Ye Tak took time.
Lessons Learnt:	<p>During the AIF application discussion, CAVAC needs to ensure that partners understand clearly contract types, conditions and requirements.</p> <p>The time it takes to negotiate a contract depends predominantly on the partner. If the partner commits more time to handling the contract then it can be finalised quickly.</p>

INTERVENTION UPDATE: Int. No: Inp 11.4 and 12.1 AWP No: 1.2 Date: 30 June 2013

Name:	Supporting a local pesticide company through capacity building for technical staff and information system strategy development
Summary:	<p>Farmers' lack of knowledge on pesticide management has been a major problem, and often leads to significant yield loss. To address this challenge CAVAC entered into a partnership with Nokor Thom. Nokor Thom is a local company which imports pesticides from Vietnam for distribution within Cambodia. The company understands that information services are a strong component of product marketing. The company's information system activities as of June 2011 included: emergency response; field demonstrations; door-to-door information system activities; and services through retailer networks.</p> <p>One of the company's main constraints was limited practical knowledge of its information system agents. In 2011, CAVAC supported Nokor Thom to overcome this constraint through a cost-sharing capacity building intervention. The intervention was developed because CAVAC believed that when information system agents were more knowledgeable, they would be able to provide better and more efficient advice to farmers on pest control. Implementing better pest control methods could contribute to decreased yield loss for farmers. This capacity building intervention was a joint training session provided by Cambodian and Vietnamese trainers from Nong Lam University. The training was composed of in-class lectures, two field trips within Cambodia and a field trip to Vietnam. This intervention was completed in November 2011.</p> <p>In early 2012, Nokor Thom decided to double its sales volume. It then recruited more technical staff, improved information system materials, expanded information system activities and improved packaging for products.</p> <p>New Cambodian pesticide legislation, approved in 2011, requires pesticide import, storage, distribution, marketing and usage to be strictly managed. To achieve the RGC's rice export target, MAFF now supports good pesticide management practices. Given this, there is now greater potential for legally registered companies in competition with illegal operations in the Cambodian pesticide market. To better position itself in this changing market, Nokor Thom sought CAVAC's support in designing a clear information system strategy. CAVAC hired an international consultant to design the strategy which was completed in December 2012.</p> <p>Through these interventions, the company is expected to have more capacity to provide knowledge on pesticide application to farmers through its improved information system approach and better trained staff. As such, farmers will be able to increase their yield through the appropriate use of pesticides / herbicides.</p>
Achievements to Date:	<p>Nokor Thom</p> <ul style="list-style-type: none"> – Capacity building for Nokor Thom's information service providers was completed in November 2011. Seven case studies on farmers' receiving information services directly from Nokor Thom's information service providers were produced. – The CAVAC team documented all records related to the capacity building project for internal use. The documents included a report from Vietnamese trainers, a summary of knowledge by major pest for rice and vegetable production by Nokor Thom staff, and some other written notes by CAVAC staff. – CAVAC's M&E team conducted an assessment on the satisfaction of Nokor Thom's staff trained under the capacity building intervention. There will be more M&E activities to follow. – Changes within the company after the capacity building project have been noted. – The information system strategy for the company has been developed. – Pesticide Market in General <p>Research</p> <ul style="list-style-type: none"> – A research study was conducted by the Economic Institute of Cambodia (EIC), focusing on: major problems with insects; weeds across CAVAC's three provinces; how farmers dealt with shocks and the most appropriate practices. CAVAC completed a pesticide position paper / strategy after EIC had completed its study. <p>Activities with the Royal University of Agriculture (RUA)</p> <ul style="list-style-type: none"> – In November 2012, CAVAC signed an agreement with RUA to support the university in producing a pesticide textbook, mainly for academic purposes. By the end of June 2013, 40% of the activity has been completed. The agreement has recently been extended for three months.
Next Steps:	<p>Nokor Thom</p> <ul style="list-style-type: none"> – Conduct M&E activities to measure satisfaction and the change in KAP at the farmers' level for the capacity building intervention. – Continue monitoring Nokor Thom's implementation of the recommendations by the international consultant on the information system strategy.

	<ul style="list-style-type: none"> – Develop a new intervention with Nokor Thom. The new intervention will include: capacity building for core technical staff in technical pesticide use as well as the participatory approach in field demonstrations (core technical staff will further train field staff); technical database development; pesticide market research to develop a business plan; and Research and Development (R&D) system development. <p>Other activities:</p> <ul style="list-style-type: none"> – Continue following up on RUA's implementation of the pesticide textbook project. – Conduct a KAP survey within the pesticide market. – Learn more about the pesticide company association in Cambodia.
Surprises, Adjustments or Problems:	<p>Nokor Thom has improved its information system materials for rice and vegetable production – moving from product-based to (major) pest-based materials. New information system materials for rice production have been in use since July 2012 and those for vegetable production have been in use since October 2012.</p> <p>Nokor Thom understands that there is a lot of information in the field including lessons that can help the company to improve its information system activities. After Nokor Thom had learned how M&E's activities could provide such information, Nokor Thom has shown interest in R&D system development.</p> <p>In early 2013, the company faced some structural changes, and those changes have caused some operational constraints that led Nokor Thom to lay off some staff members and postpone some of its business activities until May 2013. Due to these operational constraints and the recommendations from the information system strategy, Nokor Thom has requested further support, and CAVAC has agreed to develop a new intervention.</p>
Lessons Learnt:	<p>Training materials were not translated in advance for trainers. The training quality would have been even better if the materials had been translated to Khmer beforehand.</p> <p>Providing one-off capacity building to field staff is not sufficient. Based on this experience, companies operating in the pesticide market need to ensure that core staff keep gathering information from field staff, and that they continue to do research to find solutions to continuously train and support field staff. This is crucial because farmers continue to face new problems or new disease breakouts in the field.</p>

INTERVENTION UPDATE: Int. No: Inp 12.2 AWP No: 1.2 Date: 30 June 2013	
Name:	Supporting a pesticide company to provide better training to farmers
Summary:	<p>In Cambodia farmers' knowledge of fertiliser and pesticide use is low. Consequently, farmers do not apply the most appropriate fertiliser and pesticides on their crops. Input companies are one of the permanent sources of information and knowledge. While companies are interested in providing training to farmers, their staff's capacity is limited in transferring technical messages.</p> <p>The pesticide market in Cambodia is very dynamic. There are many companies that are trading and realising the importance of embedded information and providing knowledge to farmers.</p> <p>CAVAC and SPK have worked together to improve the quality of information system materials and staff capacity. SPK is a local pesticide company that imports pesticides from Vietnam. SPK's major information service is farmers' meeting / training. It was expected that trained farmers' adoption of new practices in pesticide use would contribute to yield increases. Consequently, trained farmers would have more confidence in using SPK's products, which in turn would result in an increase in company sales. SPK would increase profits from its sales due to embedded information services, and it would continue to improve and update its information services – thereby contributing to sustainability.</p> <p>One half-day TOT) session on new training materials and methodology for SPK field staff was conducted in December 2012. An assessment was then conducted in January 2013 to see how well SPK staff could perform in farmers' training after the TOT. The result was not satisfactory; it was found that field staff still lacked confidence, as their knowledge on pest management and the participatory approach remained very limited. CAVAC is now considering providing further support to SPK through intensive capacity building on pest management and training using participatory approaches.</p>
Achievements to Date:	<p>A contract was signed between CAVAC and SPK to implement the first set of activities.</p> <p>The GDA of MAFF reviewed SPK's information system materials and provided comments. SPK then updated their information system materials based on GDA's comments, and they were approved by GDA. Much of the approved materials were printed.</p> <p>CAVAC conducted a half-day TOT session on the use of information system materials for SPK staff.</p> <p>An assessment of SPK staff's performance in farmers' training after the TOT was conducted.</p>
Next Steps:	<ul style="list-style-type: none"> – Produce leaflets on proper pesticide use based on the approval from GDA, MAFF. – Conduct M&E activities of the first set of activities with SPK. – Discuss with SPK specifically about a new set of activities, which may include capacity building on pest management and participatory approach, based on the lessons learned from Nokor Thom.
Surprises, Adjustments or Problems:	<p>SPK has found it hard to mobilise farmers to attend its training. This challenge has resulted from limited capacity of field staff in conducting farmers' training, some negative impact from its previous training, and the fact that there are now more pesticide companies providing training to farmers.</p> <p>It takes a long time to discuss the new set of activities with SPK because SPK does not seem to know clearly what support it really needs.</p>
Lessons Learnt:	<p>A half-day orientation session is not sufficient to enable a company's staff to further conduct participatory training for farmers. Solid knowledge of pest management is very important, otherwise, field staff cannot expand the boundary of their explanation to farmers beyond the training materials and methodology.</p>

INTERVENTION UPDATE: Int. No: 12.13 AWP No: 1.2 Date: 30 June 2013

Name:	Support to a pesticide company in its pesticide wholesaler / retailer training
Summary:	<p>CAVAC's field interviews with farmers determined that the proper use of pesticides remains an important issue among farmers. Farmers lack even the most basic information such as: which pesticides are appropriate for which pest; when in the pests' life cycle farmers should spray; what doses to use; which pesticide mixes are safe; what is the correct re-entry after spraying; and during which pre-harvest period it is best not to spray. Both farmers and pesticide sellers realise that it is important to get and give instructions on the usage of pesticides. However, there is still a limitation in knowledge of pesticides from the sellers' side. This makes it difficult for sellers to convey the right message to farmers even on safe product use, let alone explaining the techniques in using any specific product.</p> <p>CAVAC's intervention intends to assist An Giang Plant Protection, a pesticide company in Cambodia, in training its wholesalers / retailers in the following content:</p> <ul style="list-style-type: none"> – Techniques in pesticide usage (timing and amount, etc.); – Safe product use; – New policies on pesticides, i.e. the punishments of selling illegal / banned pesticides; – Ethics in the pesticide business; – Business case of providing information to farmers. <p>With the above-mentioned content, trainees will be able to understand technical, legal and business aspects of pesticides and will therefore convey better messages to end users (farmers). With the right approach used in applying pesticides, farmers can decrease their yield loss resulting from pests, insects, and diseases, etc. In addition, farmers' increased knowledge about the benefits and the importance of information from the sellers will create more demand for information linked to sales, which in turn will generate better information services.</p>
Achievements to Date:	<p>The first draft of the AIF application has been developed.</p> <p>CAVAC and An Giang have discussed and agreed to assess pesticide dealer training conducted previously by the company itself.</p>
Next Steps:	<ul style="list-style-type: none"> – Finalise the AIF application. – Co-design the assessment process of An Giang's previous dealer training with the company. – Conduct the assessment in close collaboration with An Giang. – Release the assessment results and determine with An Giang the retailer training required.
Surprises, Adjustments or Problems:	<p>CAVAC originally planned to support An Giang's retailer training by improving the training quality through improving its training materials, including participatory training approach and by increasing the training activities. However, An Giang has suggested that its training materials and approach did not need any improvements. Nevertheless, CAVAC is still concerned about the training quality. To solve this problem, CAVAC and An Giang have agreed to assess the quality of its previous dealer training to see if any improvements are needed.</p> <p>Discussions with An Giang took a long time because An Giang decisions had to be made in Vietnam.</p>
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Inp 13.4, AWP No: 1.2 Date: 30 June 2013

Name:	Pesticide retailer training in partnership with PDAs
Summary:	<p>Pest control contributes significantly to reducing yield loss of rice farmers, and as such, pest management has been identified as one of the main constraints for Cambodian rice farmers. Most farmers believe that only pesticide application can minimise their rice yield loss. With limited knowledge of good pesticide use, farmers use whatever they can find without any solid foundation. The current practice can lead to many negative side effects, such as ineffective pest control, environmental impact, and health issues, etc.</p> <p>It was observed that when farmers faced a pest outbreak the main and timely sources of support for pest control were retailers for both prescription and product supply. However, a number of research activities found that retailers' knowledge on pesticide use was very limited and led to inappropriate use of pesticide by farmers.</p> <p>As stated in Sub-decree 69 as well as in a new law on Chemical Fertiliser and Pesticide Management, all pesticide dealers must be licensed by MAFF before conducting any business within Cambodia. To obtain a license, pesticide dealers are required to attend a training course organised by PDAs to ensure that dealers are knowledgeable in pesticide application. To date, PDAs have conducted some training sessions for pesticide dealers; however, their training curriculum is predominantly based on pesticide legislation, storage, and management. Technical knowledge on chemical control for pest management is not included in the training curriculum. The absence of this critical information is due to the fact that there is not a widely approved technical manual at the ministry level.</p> <p>Understanding the challenge in knowledge provision for pesticide dealers and the potential impact on farmers including rice yield loss, CAVAC is working with GDA to develop a Rice Pest Management Manual. The manual is expected to provide detailed technical knowledge on chemical control of major pests, including the types of pesticide to be used, when to use according to the pest development cycle, how much to use, and how to apply. The manual will be used to develop training materials and methodology for pesticide retailer training to be conducted in partnership with PDAs.</p> <p>This retailer training will be a little different from the retailer training conducted by pesticide companies. Pesticide companies focus on their products, but this retailer training will focus on the active ingredient needed in pest control. The training curriculum will include general information, such as pest morphology, life development cycle of pests, symptoms, pest identification, trade names, common names of pesticides and active ingredients to be used with each major pest, etc.</p> <p>It is expected that this intervention will give stakeholders (agricultural officials, non-governmental organisations (NGOs), private companies, and development programs) a technical manual on good practice of pesticide use. PDA teams working on this intervention will become good local sources of knowledge for retailers as well as farmers.</p>
Achievements to Date:	<p>The Rice Pest Management Manual is being developed by GDA. The manual will be approved by MAFF, and it will be used as an approved pesticide technical manual for PDAs to conduct pesticide retailer training.</p> <p>A team of three PDA officials in each of the three CAVAC's target provinces has been formed.</p> <p>The Training Need Assessment (TNA) process has already been discussed and agreed by the PDA teams in the three provinces.</p> <p>The locations of pesticide retailers to participate in the TNAs have been identified.</p>
Next Steps:	<ul style="list-style-type: none"> – Continue working with GDA until the Rice Pest Management Manual is finalised and approved. – Conduct TNA jointly with the PDA teams in the three target provinces as planned in the TNA process. – Release the TNA results. – Discuss with GDA to develop training materials and methodology based on the TNA results and the Rice Pest Management Manual. – Work with GDA to conduct TOT on training materials and methodology for PDA teams who will further conduct pesticide retailer training. – Conduct pesticide retailer training in partnership with PDAs in the three target provinces.
Surprises, Adjustments or Problems:	
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Mar 11.1 AWP No: 1.2 Date: 30 June 2013

Name:	Technical assistance on rice and rice seed production for export markets
Summary:	<p>The RGC's paddy production and rice export policy indicates that a key success factor for domestic export millers will be the ability to purchase sufficient paddy at competitive prices.</p> <p>Baitong Kampuchea, Plc. has been identified as a key partner for this intervention. Baitong is rice milling and exporting company based in Battambang province. There are some fundamental issues which make it difficult for Baitong to achieve its rice export goal. Although highly attractive fragrant varieties are being produced, they are not pure and this has an impact on milling efficiency and the quality of the rice being produced.</p> <p>To tackle this, Baitong aims to introduce good quality seed in its catchment area of rice production to improve the quality of milled rice. To increase the availability of good quality seed Baitong intends, with support of CAVAC, to build its own seed production capacity. In addition, Baitong aims to build its capacity to conduct successful field demonstrations to highlight the impact of correct production methodologies for its rice producing community.</p> <p>CAVAC's intervention with Baitong focuses on providing technical assistance to the company on rice seed and paddy production for the selected export varieties. A contracted rice specialist is training selected company staff members and establishing field demonstrations. The trained staff will later extend the knowledge and practice to the rice production community known as Baitong community. The activities of this intervention include:</p> <ul style="list-style-type: none"> – July – Nov 2012: Training in paddy production for a photosensitive variety – Nov 2012 – Feb 2013: Training in rice seed production for a non-photosensitive variety – Mar – June 2013: Training in paddy production for a non-photosensitive variety – July – Nov 2013: Training in rice seed production for a photosensitive variety <p>By the end of June 2013, the first three activities were completed. Within the past six months, CAVAC and Baitong also started discussing the next set of activities to take the intervention forward.</p>
Achievements to Date:	<p>CAVAC signed a contract with Baitong to provide technical assistance to the company on paddy and rice seed production of selected export varieties.</p> <p>By the end of June 2013, three of the four training activities mentioned above were completed. The topics included in these first three training sessions were: seed preparation, transplanting, replanting, insect and disease management, fertiliser application at the panicle initiation stage, roguing off-type plants, and harvesting and postharvest management</p>
Next Steps:	<p>Complete the remaining activities within the contract.</p> <p>Work with Baitong to finalise a new AIF application.</p>
Surprises, Adjustments or Problems:	<p>During the implementation of the second and third training activities, three of the four staff members participating in the training resigned from Baitong. Baitong assigned two new staff members to attend the training. However, the new staff members had difficulty capturing the main messages of the training, as they had missed some previous lessons. After having communicated this issue with Baitong, Baitong decided to reorganise the team working with the community before starting the fourth training activity. Baitong has assigned three other new staff members to this team.</p> <p>Within the next six months Baitong also plans to select farmers for future collaboration in seed production. In principle, Baitong's staff give technical advice to selected farmers. To ensure that this process is effective, CAVAC's recruited trainer will also provide backstopping support to Baitong's staff as they work with farmers.</p>
Lessons Learnt:	<p>Prior to working with a partner, CAVAC needs to ensure that: 1) the partner has a clear future plan on how to use the knowledge from the intervention activities; 2) the partner has a committed team to work with CAVAC; and 3) the training program should be flexible enough to help new trainees with gaps in their knowledge.</p>

INTERVENTION UPDATE: Int. No: Mar 11.2 AWP No: 1.2 Date: 30 June 2013

Name:	Feasibility study of warehouse receipt system
Summary:	<p>Eighty per cent of Cambodian rice is produced in the wet season. During the harvest months traders from Vietnam and Thailand come to buy paddy by competing with Cambodian millers on price. Milled rice exported from Cambodia was assessed as approximately 60,000 tons per annum in 2010 which was equivalent to about 100,000 tons of paddy rice. To be able to reach the target of exporting one million tons of milled rice by 2015, approximately three million tons of paddy rice must be retained for local millers. Therefore, the constraints in getting paddy (quality and quantity) are increasing. Having a consistent supply of paddy will help rice millers to best utilise their milling capacity throughout the year. According to the French Agency of Development's (L'Agence Française de Développement (AFD)) economic survey of the rice sector in Cambodia, Golden Rice and Baitong Kampuchea Plc. are the companies that have the highest usage of their milling capacity. However, the percentage of capacity utilisation of these companies is around only 30 per cent.</p> <p>Warehouse receipts provide farmers with an instrument that will allow them to extend the sales period of modestly perishable products well beyond the harvesting season. It also provides financial assistance for farmers. By producing warehouse receipts in designated banks, farmers will be able to access finance. Rice millers would therefore have a constant supply of paddy to utilise their milling capacity. This also eases rice millers' financial burden, as they would not need to buy paddy once in the harvest season to store for an entire year.</p> <p>CAVAC has discussed with a few potential millers and exporters the possibility of CAVAC playing a facilitation role in implementing the warehouse receipt system. Currently, the discussions have not led to an agreement. The warehouse receipt system is new within the Cambodia context, and important players, such as millers, financial institutions, and farmers, are not ready for it at this point of time.</p> <p>Within this reporting period, CAVAC also had follow-up talks with other development partners involved in this sector, such as the Helping Address Rural Vulnerabilities and Ecosystem Stability (HARVEST) and the International Finance Corporation (IFC), and learned that they have not yet taken further steps on the warehouse receipt system due to the uncertainty of the sustainability and ownership of the system – and how the benefits are shared.</p> <p>Considering internal capacity and current market, CAVAC has decided not to work on this intervention.</p>
Achievements to Date:	<p>CAVAC has had discussions with a few rice millers and exporters but discussions have not led to any agreements.</p> <p>CAVAC has continued discussing this system with other development partners.</p>
Next Steps:	None
Surprises, Adjustments or Problems:	No agreement was reached. No player in the Cambodian rice export market seems ready to be involved in the warehouse receipt system.
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Mar 12.1 AWP No: 1.2 Date: 30 June 2013	
Name:	Export promotion – support to association market linkages
Summary:	<p>Cambodian milled rice is new in international markets. Therefore, there is still a lack of networks with international purchasers and a lack of knowledge of international market requirements within Cambodia. The Cambodian market has a lack of understanding regarding quality standards of milled rice products required by international buyers and quality standards of processing facilities required to generate this quality. The continued push in export market development is expected to help contribute to the one million-ton milled rice export goal of the Cambodian Government by 2015. CAVAC is supporting an increase of knowledge on export markets through the facilitation of international networking opportunities both in Cambodia and abroad.</p>
Achievements to Date:	<p>CAVAC signed a contract with the FCRMA to support the Federation to gain knowledge on rice export markets and build up its international business networks.</p> <p>Given the need to explore rice export markets, CAVAC has amended the contract with the FCRMA from the initial agreement to visit only the European Union (EU) and United States (US) market to any potential markets.</p> <p>A member of the FCRMA made a visit to Malaysia and hosted a buyer in Cambodia where a number of sale agreements were reached.</p> <p>A member and an adviser from the FCRMA attended a visit to seven countries in the EU and Singapore where they gained understanding of the quality assurance requirements and different market requirements in those countries.</p> <p>Within this reporting period, other FCRMA members have expressed their interest in joining trade visits. They are interested in trips to Australia, the EU, and the US. As requested, CAVAC is sourcing potential buyers in the EU and Australia for the next trade visits.</p> <p>CAVAC has also discussed with FCRMA members opportunities to collaborate on other possible activities. Some have suggested marketing support such as website development.</p>
Next Steps:	<p>Finalise destinations and potentials buyers to visit.</p> <p>Consider support to other marketing activities.</p>
Surprises, Adjustments or Problems:	<p>Most of the FCRMA members did not participate in the market development activities previously due to the following reasons:</p> <p>Business visits to foreign countries are expensive;</p> <p>Most of them are suppliers to Baitong (the head of the FCRMA) as their production is not large enough for them to export on their own.</p> <p>Lack of language capacity to communicate with buyers;</p> <p>It is preferred that business meetings are conducted one-on-one with buyers as each meeting usually discusses sensitive business information, etc.</p> <p>Given the above issues, CAVAC and FCRMA members are considering other market development activities.</p> <p>FCRMA members are concerned about the usefulness of the trips as they only want to spend time and resources with potential buyers, not general buyers. They have asked CAVAC to advise them who the potential buyers are.</p>
Lessons Learnt:	<p>Language barriers and the understanding of international trade and international marketing could be the main constraints for exporters.</p>

INTERVENTION UPDATE: Int. No: Inp 13.3 AWP No: 1.2 Date: 30 June 2013

Name:	Improving Golden Daun Keo Rice Mill's quality of paddy of export varieties
Summary:	<p>There are two types of rice which are attractive to large mills which are interested in exporting rice: the <i>fragrant varieties</i> generally aimed at the high end export markets, such as the US and Europe; and <i>white rice</i> usually targeted at less discerning markets. A key constraint in the export of both types of varieties is the lack of uniform seed, causing the purchase of mixed paddy which decreases the quality of the milled rice and increases milling losses.</p> <p>To successfully export milled rice, millers need to ensure effective monitoring of all steps involved in the process from paddy production to milling.</p> <p>CAVAC's intervention aims to support the increase of availability of quality dry season rice seed and modern wet season rice seed varieties, which helps ensure sufficient export quality rice.</p> <p>Activities involved in this intervention include:</p> <ul style="list-style-type: none"> – Organising a facilitation workshop for farmers, (potential) seed producers to visit the company's facility to learn about proper seed production techniques and to introduce the company's trade mechanism for linkage opportunity for sustainability. – Capacity building through development of a participatory rice seed production module for the company's technical staff and small seed producers. – Developing a paddy and rice seed market strategy with a significant focus on sourcing paddy and rice seed in a way that enables to the company to get sufficient paddy for its export demands.
Achievements to Date:	Several meetings with the Golden Daun Keo Rice Mill's staff have been conducted to discuss the activity plan, cost-sharing options, the nature of collaboration, and the details of a confidentiality agreement.
Next Steps:	<ul style="list-style-type: none"> – Finalise an AIF application for this activity. – Sign the agreement. – Start implementing the activities.
Surprises, Adjustments or Problems:	
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Inp 12.3 AWP No: 1.2 Date: 30 June 2013

Name:	Vegetable farmers' practice change
Summary:	<p>The supply of locally-produced vegetables is often constrained by: the effects of seasonality, water shortage in the off-season; pest infestation; farmers' knowledge of inputs; production techniques; and ability to access appropriate knowledge.</p> <p>Productivity increases can be achieved by providing knowledge to farmers on: high-yielding crop varieties that adapt to the local climate; use of quality seeds; techniques mainly in effective crop irrigation, use of chemical fertiliser; use of pesticide, and harvest and postharvest handling techniques.</p> <p>This information can be transferred through demonstration plots, on-site training, extension material development or other methods through specialised seed companies and fertiliser or pesticide companies.</p> <p>To contribute to helping farmers achieve vegetable productivity increases, CAVAC is partnering with East West Seed International and Pacific Seeds to conduct vegetable demonstration plots, field days and technical training.</p>
Achievements to Date:	<p>East West Seed International</p> <ul style="list-style-type: none"> – CAVAC conducted a baseline study capturing the current farming practices of farmers in the target provinces of East West Seed (Kandal and Kampong Cham). – East West conducted a vegetable market identification and value chain analysis study in its target provinces. – East West Seed has established 56 demonstration plots in Kandal and Kampong Cham. <p>Pacific Seeds</p> <ul style="list-style-type: none"> – Pacific Seeds established 15 demonstration plots in Siem Reap, Kandal and Battambang. However, limited progress was achieved due to miscommunication between management and field staff. There were also constraints due to inclement weather and registration delays. Pacific Seeds has negotiated with CAVAC to delay the start of its activity until the next growing season.
Next Steps:	<p>East West Seed International</p> <ul style="list-style-type: none"> – East West Seed to establish more plots with a view to reach a total of 216 demonstration plots and to conduct field days. – East West Seed to conduct vegetable seed training for vegetable seed retailers and vegetable collectors. <p>Pacific Seeds</p> <ul style="list-style-type: none"> – Pacific Seeds to conduct vegetable demonstration plots and field days in its target provinces. – Pacific Seeds and its parent company have expressed interest in establishing a mobile input information centre (unimart) for crop growing farmers to address key constraints, such as farmers' lack of knowledge of input and production techniques. CAVAC is currently evaluating a proposal to support the establishment and operation of a unimart in Battambang.
Surprises, Adjustments or Problems:	<p>East West Seed International has experienced difficulties in selecting farmers to participate in demonstrations as a number of farmers have experienced failures in demonstrations while collaborating with other projects. However, East West Seed has tried to approach farmers by inviting them to attend field days and conducting exchange visits to demonstration plots in nearby districts and provinces. As a result East West Seed was able to select more interested farmers for later cropping seasons.</p>
Lessons Learnt:	<p>Successful field demonstration results can help increase farmers' confidence in collaborating with the vegetable seed company partner.</p> <p>CAVAC's vegetable seed company partner should have local field staff to work closely with farmers so that farmers have local contact people to work with on an ongoing basis.</p>

INTERVENTION UPDATE: Int. No: Inp 12.7 AWP No: 1.2 Date: 30 June 2013

Name:	Vegetable seed retailer outlet training
Summary:	<p>Cambodian vegetable farmers interested in purchasing quality seed rely on seed produced in neighbouring countries which are supplied through local market distributors. While seed production requires detailed agronomic knowledge, seed distribution requires logistical understanding. The support market has developed in such a way that there is limited information exchange between distributors and retailers, and information on new varieties and agronomic practices are not effectively shared. To improve this, CAVAC is showing the efficiency of retailer training and presenting this to the resident seed companies to continue the improvements sustainably.</p>
Achievements to Date:	<p>A vegetable value chain study was conducted.</p> <p>TNAs were conducted in Takeo and Kampot and a training module was developed and improved.</p> <p>Retailers' knowledge of vegetable seed was assessed.</p> <p>An irrigation potential study was conducted to understand the 'lack of water' constraint in vegetable production and to determine feasible activities to be included in this intervention.</p> <p>Four training sessions were delivered (one in Kandal province, one in Takeo, and two in Kampot).</p> <p>In three of the four training sessions there were three vegetable seed companies in attendance. In the other training session, three companies and one NGO attended. Two companies showed an interest in partnering with CAVAC: East West Seed International and Pacific Seeds. And that has led to the intervention above.</p> <p>Impact assessments at both the support provider (trained retailers) and farmer levels were completed. Based on assessments prior to the training, 90% of retailers interviewed did not give any advice on vegetable seed and production techniques to farmers because they did not have any practical or theoretical knowledge. After the training, about 20% of them gave advice without being asked by farmers, and almost all of them gave advice when farmers asked. Questions that farmers asked included the expiration date, germination rate, type of variety with good yield, and pest management.</p>
Next Steps:	Ensure that lessons learnt are used in other interventions.
Surprises, Adjustments or Problems:	<p>Trained seed retailers have begun advising vegetable farmers – even though most retailers tend to give advice only when farmers ask. This tends to happen mostly to regular or long-term customers but not to new customers.</p> <p>Evaluations have revealed that farmers do not ask questions or seek advice because they assume that retailers are just doing business, and do not have enough agricultural background. It is also assumed that vegetable retailers do not have enough time to advise them, particularly those for whom seed selling is just a side business.</p> <p>For example: when farmers were asked why they did not ask retailers questions, a few farmers responded that they thought those retailers had never been trained in vegetable growing techniques. However, if they know that the retailers have joined technical training they will ask for advice.</p> <p>Therefore, increasing awareness among farmers that retailers are a possible source of information should be considered as part of CAVAC's intervention activities.</p>
Lessons Learnt:	<p>CAVAC has learned that vegetable collectors are an effective channel of information.</p> <p>A session on advising vegetable retailers to share information with farmers should be included in future training so that retailers know it is important to advise new customers, not just their long term customers.</p>

INTERVENTION UPDATE: Int. No: Ext 11.1 AWP No: 1.2 Date: 30 June 2013

Name:	Support to a media agency to produce quality agricultural program (drama)
Summary:	<p>Broadcast media is recognised as a viable option for disseminating agricultural information. CAVAC is supporting a production company, Delight Cambodia, in building its capacity to produce quality agricultural programs. It is intended that the new programs become a focus for agricultural advertising; supporting advertisers' brand development and company image. By generating advertising revenue, the program will become commercially viable. There is also a significant chance that others will copy the example and also produce quality programs for the rural audience. Farmers will then have improved information from several sources and will be able to select the information that best fits their context.</p> <p>To improve its understanding of the media market in Cambodia, CAVAC also worked with two private firms, River Orchid Insight and Cambodia Health Education Media Service, on two studies. The first study, 'Rural Media Consumption Research', aimed to generate rural interest in the media market to stimulate advertising. The second activity, 'Agricultural Program Quality Assessment', was intended to generate initial feedback on the quality of existing agricultural programs.</p> <p>CAVAC then started to look for partners to conduct research work on media consumption, specifically in the rural areas. Disaggregated media consumption information between urban and rural areas is very important for advertisers (agricultural input suppliers and other advertisers who target the rural population). This would highlight the potential of this rural market to players in the media market who still focus on the urban audience. Moreover, getting partners to work with on the media consumption research means working with them on a cost-sharing basis. This enhances partners' ownership of the activities, contributing to the sustainability aspect of the CAVAC program.</p>
Achievements to Date:	<p>Support has been provided to Delight Cambodia through:</p> <p><i>Capacity building on agriculture knowledge</i> – In 2011 CAVAC supported Delight Cambodia to conduct several field visits and meetings to acquire agriculture knowledge. This included: one exchange visit to model farmer training; a linking meeting with various stakeholders within the agricultural sector; the Second National Farmers' Forum Consultation; and an exchange visit to Vietnam to understand the technical use of pesticides and agricultural production.</p> <p><i>Assistance with basic technical agriculture knowledge for script development</i> – In late 2011 the research team of Delight Cambodia, with support from CAVAC, travelled to 10 provinces within Cambodia to undertake focus group discussions with different farmers to better understand their agricultural practices for script development. This included farmers who grew vegetables, rice and fruit trees, and raised chickens and pigs. In January 2012, the research team briefed the script writing team about the information that they had collected so that the writing team could script a pilot drama video.</p> <p><i>Capacity building on media production</i> – In January 2012 two technical production staff from Delight Cambodia enrolled in a five-week media training session in London from 25 January until 1 March 2012. This media training focused on media production techniques.</p> <p><i>Production of one pilot drama episode</i> – The script for this pilot drama was agreed by Dr. Mak Soeun, Director of the Department of Agricultural Extension (DAE) of MAFF in June 2012 and shooting was completed in October 2012. In December 2012, Delight Cambodia showed this pilot episode to some farmers in six provinces of Cambodia for feedback. Delight Cambodia, after getting feedback, finished the first episode successfully by the end of 2012.</p> <p>In early 2013, Delight Cambodia undertook discussions with TV stations regarding the airing of the pilot episode. Based on focus group discussions with farmers, Delight Cambodia investigated which had the most widespread coverage, and as such concluded that CTN would be the most potential station.</p> <p>Other activities in the media market:</p> <p><i>Media consumption research and agricultural program quality assessment</i> – In 2011 two research studies were completed: media consumption research of the rural population and agricultural program quality assessment. In March 2012 CAVAC conducted a Media Workshop to present the results of the two research studies to relevant stakeholders, including: TV and radio stations; media agencies; research companies; and input suppliers; etc. The main objectives of this workshop were to demonstrate rural media market potential to stakeholders and to introduce Delight Cambodia to participants.</p> <p>The Media Workshop gave an opportunity for Delight Cambodia to present itself and its concept of the agricultural drama that it had been planning to produce. This event attracted several agricultural input suppliers to sponsor the program. However, they wanted to see the drama before making any formal commitments.</p> <p>In May 2013 CAVAC looked at the potential to partner with radio stations working on agricultural content.</p>
Next Steps:	<ul style="list-style-type: none"> – Continue to expose Delight Cambodia to good practices of commercial media. – Through an external consultant, evaluate the pilot drama episode so that the results are

	<p>considered reliable by sponsors / advertisers.</p> <ul style="list-style-type: none"> – Support Delight Cambodia in organising an event to present the pilot video along with the evaluation report to potential advertisers to generate interest in sponsorship. – Support Delight Cambodia in organising an event for script writers and agricultural experts so that script writers understand more about agriculture to produce scripts for the next episodes. – Conduct further analysis on the radio sector.
Surprises, Adjustments or Problems:	<p>There have been some agricultural programs on South East Asia TV (SEATV) and Bayon TV. CAVAC is not sure if this is reflective of CAVAC's work in this media market. The agricultural program on SEATV is being sponsored by UNWomen along with a few private companies under the same business model that CAVAC is using. Also, one writer and one member of the production team of Delight Cambodia had moved to Bayon TV.</p>
Lessons Learnt:	<p>Investing in the media sector for rural populations is difficult due to high costs, often unsubstantiated returns, and copy rights not followed. Research companies, TV and radio stations are often reluctant to take these risks.</p>

INTERVENTION UPDATE: Int. No: Ext 13.1 AWP No: 1.2 Date: 30 June 2013

Name:	Support to media research companies
Summary:	<p>Lack of information on rural audiences' media consumption prevents media houses from investing in quality programs and hinders potential sponsors from investing in advertising. The Cambodia media market is not yet commercialised and is poorly understood by players such as: TV stations; radio stations; media agencies; research companies; production houses; etc. This is primarily due to a lack of rural information as research conducted ignores the harder to reach population by focusing only on those who reside in the city centres and / or their surrounding areas. These decisions are typically made as research involves high cost with the risk of not having people interested in buying and using the findings.</p> <p>To solve this, CAVAC is looking to share these risks so that one or more research companies can kick start research services that disaggregate the urban and rural population.</p> <p>By making information available to TV stations, advertising agencies and potential advertisers, it is expected that the commercial media market for agricultural programs will become more functional and will assist in the creation of commercial programming. This will be more responsive to the needs of farmers and those of the agricultural input companies, allowing them to select programs and timeslots that are of interest to their target audience. Farmers will then have access to more relevant and improved agricultural information, which will lead to improving their knowledge and skills.</p> <p>From July to October 2012, CAVAC's media team was searching for interested research companies to partner with on media consumption research and found two interested companies: IRL and Feedback Research.</p> <p>In March 2013 IRL's AIF application was approved, and a contract was signed in May 2013. Activities have since commenced.</p> <p>In May 2013 Feedback Research's AIF application was approved, and a contract was signed in June 2013.</p>
Achievements to Date:	<p>Under a cost-sharing contract, CAVAC is now supporting IRL to conduct media consumption research in Phnom Penh, Battambang, Kampong Cham, Siem Reap, Sihanoukville, Kampot, Prey Veng, Svay Rieng, with a focus on different geographical settings; urban, semi urban, rural and remote areas for data collection.</p> <p>Under a cost-sharing contract, CAVAC is now supporting Feedback Research to conduct TV rating research.</p>
Next Steps:	<p>Monitor the progress of the research.</p> <p>Together with the two companies, organise a workshop to sell the research results to potential buyers, such as advertisers, TV and radio stations, and production houses.</p>
Surprises, Adjustments or Problems:	
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Ext 10.2 AWP No: 1.2 Date: 30 June 2013	
Name:	Creating awareness, interaction between support providers and sources of information on the benefit of better communication
Summary:	<p>CAVAC intended to support a publishing house to produce an agriculture magazine to create awareness of the benefits of communication and providing information to retailers. Real cases would form the core of this magazine. Retailers could call higher level support providers and ask about product information. This would help to increase the retailers' knowledge on agricultural products, and thereby they could provide meaningful advice to farmers.</p> <p>CAVAC met with two companies, Red Dot and CN Business, but the discussions did not lead to joint cooperation.</p> <p>CAVAC later decided not to invest in this intervention, as CAVAC's media habit research showed that print media was rarely used by the rural communities.</p> <p>Furthermore, in discussions with Red Dot in 2012, the company hinted that it would produce Agritalk magazine. However, the magazine has not come to existence; this supports the assumption that there is no business opportunity in this market.</p>
Achievements to Date:	CAVAC met with Red Dot and CN Business in 2012, but the discussions did not result in any further activity.
Next Steps:	This intervention has been dropped.
Surprises, Adjustments or Problems:	
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Ext 10.3 AWP No: 1.2 Date: 30 June 2013

Name:	Pilot training methodology for model farmers to improve role and knowledge of model farmers
Summary:	<p>As an agricultural development program, CAVAC aims to support innovation in rural communities throughout its three target provinces. This pilot training intervention for model farmers has been designed to fulfil this objective. CAVAC provides training to model farmers in nutrient management, fertiliser use, weed control and seed storage with the expectation that the knowledge will be further shared by model farmers with other farmers. Also, if model farmers are trained and apply the knowledge learnt, other farmers may copy the model farmers if positive results are noticed (such as increased yields).</p> <p>To check whether model farmer training has any impact on farmers, CAVAC in February 2013 commissioned a study on the KAP of fertiliser use and the differences in yields of farmers generally and those trained through the model farmer training intervention. The results indicated that wet season rice yields of trained model farmers were significantly higher than those of farmers; but this was not the case for the dry season rice yields. Ultimately, the findings revealed that training in fertiliser use might have significant impact on wet season rice farmers but not on dry season rice farmers.</p> <p>CAVAC's recent study also indicated that there were two types of model farmers; curious model farmers, so called 'super model farmers', and problem responsive model farmers, so called 'normal model farmers'. The <i>super model farmers</i> normally innovate by changing the way they farm, such as changing the varieties they use and other practices because they are curious to see the results. They are keen to know and try new things. The <i>normal model farmers</i> generally change their practices when they come across various constraints, such as pest damage or poor performance of their current seeds, etc.</p> <p>Based on these findings, CAVAC plans to tailor different activities for different types of model farmers. With curious or <i>super model farmers</i>, CAVAC will collect their successful innovation stories to share with others. With problem responsive or <i>normal model farmers</i> in wet season rice cultivation areas, CAVAC will continue their training with further improvement to training materials and curriculum. Further analysis will be undertaken for the intervention focused on dry season model farmers.</p>
Achievements to Date:	<p>Nine model farmer household trainers have been trained in participatory teaching and rice production techniques, allowing them to continue daily training in all the three CAVAC provinces. As of 30 June 2013, 1,157 training sessions have been conducted: 403 in Takeo, 374 in Kampot, and 380 in Kampong Thom. On average, 10 households attended each training session. 13,799 model farmer households have been trained since the start of the activity in April 2011.</p> <p>A KAP survey was conducted in December 2011 to check whether model farmer training had any impact on model farmers.</p> <p>A KAP survey with 1,200 samples was conducted in February 2013 to assess the impact of the model farmer training on yields of model farmers and farmers. Based on these results of the survey the training is being redesigned to accommodate the changing needs of Cambodian farmers.</p> <p>A study was conducted in April 2013 to collect the information to redefine CAVAC's strategy for this intervention. With the results of the study, CAVAC has redefined the strategy for the model farmer training intervention and changed the selection criteria for selecting model farmers.</p> <p>A consultant was recruited to capture innovation stories of super model farmers and to design the dissemination strategy.</p> <p>CAVAC has also advertised for a participatory training consultant to improve the current training methodology.</p>
Next Steps:	<ul style="list-style-type: none"> – Recruit a participatory training consultant to improve the current training methodology. – Collect innovation stories of super model farmers. – Improve training materials, methodology and curriculum for wet season training – Measure impact of the training on wet season rice farmers
Surprises, Adjustments or Problems:	The curriculum of the current model farmer training is found to have less impact on dry season rice farmers.
Lessons Learnt:	The high level technical content (herbicide ingredients) was not well captured by model farmers, and therefore this specific section needs to be simplified.

INTERVENTION UPDATE: Int. No: Ext 11.3 AWP No: 3.2 Date: 30 June 2013

Name:	Assisting training and information system support providers with training materials, capacity building and promotion
Summary:	<p>Farmers' limited knowledge is a key constraint for rice productivity in Cambodia. Farmers access information through several channels: public, private, and NGOs. The quality of information and the capacity to deliver the information is still limited. Changing government strategies towards improved agricultural information systems also requires adjustments of information system materials. The activities of this intervention include:</p> <ul style="list-style-type: none"> – CAVAC investigates what services NGOs or public providers are likely to deliver, and if CAVAC can support quality improvements. – CAVAC shares materials and support capacity building when requested and when this support is likely to be sustainable. – CAVAC can provide some start-up support to private institutions.
Achievements to Date:	<p>Training materials and methodologies developed by CAVAC have been adopted by the PDAs of the three CAVAC provinces, a local school (ABC) and five NGOs, including Srer Khmer, Minority Organisation for Development of Economy (MODE), Farmer Livelihood Development (FLD), Gesellschaft für Internationale Zusammenarbeit (GIZ), and VVOB Cambodia working with Kandal PDA.</p> <p>In 2012, CAVAC's M&E Team conducted a survey on farmers' rate of adoption of new rice production techniques which had been trained by VVOB and GIZ using CAVAC's training materials and methodologies.</p> <p>The HARVEST program had shown interest in using CAVAC's rice production booklet. CAVAC provided HARVEST with a soft copy of the booklet.</p> <p>Within the last six months, CAVAC has not provided any soft copies of information materials and orientation on the materials to any NGO.</p> <p>In April 2013, CAVAC conducted a small study on changes in KAP of farmers who had access to CAVAC extension materials through their respective NGOs. With VVOB, there were around 1,480 farmers with access to the One Page, One Concept booklet. In addition, 10 out of 13 interviewed farmers could recall the key messages in the booklet, but only one farmer changed the practices of fertilizer use due to the booklet. The study also found that the work with GIZ produced marginal impact.</p>
Next Steps:	To remain open to requests by any large NGOs, schools similar to ABC and other development projects to use CAVAC's information system materials.
Surprises, Adjustments or Problems:	
Lessons Learnt:	Some NGOs were interested in the materials but they were not using them since their information system activities were mostly determined by their donors and were not related to rice crops. CAVAC might need to consider only the requests from NGOs and development projects that have information system activities related to CAVAC's materials.

INTERVENTION UPDATE: Int. No: Ext 11.5 AWP No: 3.2 Date: 30 June 2013	
Name:	Linking events
Summary:	<p>The objectives of this intervention are to develop stronger linkages between permanent sources of information, such as PDA and CARDI, input suppliers, agribusinesses and model farmer households. As such CAVAC has hosted three provincial events to support stronger rice productivity among model farmer households.</p> <p>The nature of these events became more formalised throughout the process. CAVAC expected such an event to strengthen the linkages between permanent sources of information.</p> <p>Additionally, access to knowledge is likely to improve and if linkages are made from these events, sustainable access to better support, markets and information may be achieved.</p>
Achievements to Date:	<p>A one-day linking event was held in each of the three CAVAC target provinces: in Kampot on 31 August 2011, in Takeo on 10 February 2012, and in Kampong Thom on 24 February 2012. Each linking event successfully attracted between 350-500 model growers, 40-80 local retailers and 22-33 input supply companies. Lessons learned were recorded for future linkage events.</p> <p>CAVAC conducted a small assessment on the importance of linking events with farmers and companies. The assessment showed a mixture of results. Some companies were satisfied and requested to have more, but some others did not see the importance of the events.</p> <p>Recently, CAVAC conducted a survey with 50 model farmers who had joined the linking events to understand their satisfaction and interaction with involved companies. The key findings and conclusion of this survey will be reported at a later stage.</p>
Next Steps:	<p>Conduct a further assessment on the satisfaction of companies and retailers with the events, and the interaction between companies, retailers and model farmers.</p> <p>If the assessment shows the usefulness of linking events in building networks and the needs for such events, CAVAC will conduct more of them in various forms. Once all actors have the appropriate networks there will be no further need for commercial linking events.</p>
Surprises, Adjustments or Problems:	
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Ext 11.6 AWP No: 3.2 Date: 30 June 2013	
Name:	Supporting a private call centre
Summary:	<p>CAVAC has implemented an intervention to support a private call centre, Asia Master, to: develop agricultural content of its database; build capacity of its staff in agricultural knowledge; and promote the service to users. CAVAC expected that if the company could provide useful information / knowledge to farmers, and that if farmers adopted and applied this information successfully, there would be more calls from farmers. The company would also make more profit from this service and it would continue to improve and update the agricultural content of its database.</p> <p>However, after providing support, CAVAC conducted a study on callers' satisfaction of the service. The study showed that the majority of the callers had not been satisfied with the information provided. The information they were predominantly seeking was related to pest control.</p> <p>To respond to this, CAVAC has been planning to develop a menu driven database equipped with a diagnostic tool to assist. With this, the agents of the call centre are expected to be able to identify pests, and suggest appropriate control methods in a more effective way. The demonstration version of the database will be developed and tested by other input companies and private call centres.</p>
Achievements to Date:	<p>The first round of support to Asia Master has been completed. Based on the study results that callers were not satisfied with Asia Master's service, the call centre's agriculture service has been temporarily halted.</p> <p>CAVAC has been planning to develop a menu driven database with a diagnostic tool for pest control. Given the complicated and specific nature of the database, CAVAC has contacted several institutions who have experience in developing similar tools. These included: Wageningen University, Massey University and CABI. To date, they have shown an interest in the work.</p> <p>CAVAC is currently in the process of developing a Terms of Reference for development of the diagnostic tool, which will include rice pest and information technology (IT) specialists who will jointly develop the database.</p>
Next Steps:	<ul style="list-style-type: none"> – Complete the TOR for development of the diagnostic tool to develop a demonstration version of the database. – Discuss further work with Asia Master. – Introduce the demonstration version of the database to Asia Master, other input companies, and other call centres.
Surprises, Adjustments or Problems:	Asia Master's call centre on the agricultural content proved to be ineffective because the content was too broad and did not meet the real demand of farmers. Farmers were most interested in pest control.
Lessons Learnt:	A call centre database will be more effective if a survey on the real demand among farmers is conducted before the database is designed.

INTERVENTION UPDATE: Int. No: Irr 10.1 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of an irrigation scheme: Krapum Chhuk Canal, Takeo Province
Summary:	<p>Before this intervention commenced, farmers in Krapum Chhuk typically grew a rice recession crop. Those close to the existing 'PRASAC Canal' could access water for a second rice crop.</p> <p>The Krapum Chhuk scheme was proposed to increase the potential command area of the main PRASAC Canal. This scheme was a four (4) kilometre Secondary Canal (otherwise known as Canal 85), and was selected for implementation at the start of CAVAC in March 2010. Construction of the first phase was completed in June 2010. A 1.5-kilometre extension was constructed in 2011, and completed in June 2011.</p> <p>The construction of this Secondary Canal has improved access to reliable water for double cropping. To ensure the canal is managed and maintained effectively, a Farmer Water User Group (FWUG) was established, and capacity building activities were completed in July 2012.</p>
Achievements to Date:	<p>Engineering</p> <p>The detailed design was undertaken by Takeo PDWRAM under an agreement with CAVAC. CAVAC conducted a tender process for a construction contract of this canal, and the contract was awarded to Taing Cheng Oing Co., Ltd.</p> <p>Construction commenced in April 2010 and was completed in June 2010. The community requested the canal be extended 1.5 kilometres to serve a larger command area and connect the canal embankments with an existing road. The same contractor was engaged for the additional work.</p> <p>Construction supervision was conducted by the PDWRAM under an agreement with CAVAC.</p> <p>The actual command area of this scheme was assessed by a tracking Global Positioning System (GPS) device with assistance of FWUG members.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUG for this canal. The FWUG was established in February 2012 through community meetings and elections. Capacity building was completed in July 2012.</p> <p>CAVAC has been following up with the trained FWUG to strengthen its capacity.</p> <p>The performance of this FWUG is influenced by BANTIC (the FWUC of the PRASAC Canal constructed in 1997) as it is part of the organisational structure of BANTIC.</p> <p>The fee collection has started, however the amount collected does not correlate to what is possible in relation to the irrigated areas. Private water sellers have paid the fees to the FWUC, but not in full amounts. This is due to the fact that the FWUC does not have complete irrigated area data. This year the FWUG could collect about US\$1,400.</p> <p>The funds collected have been used for the maintenance of Canal 98 (PRASAC Canal).</p> <p>In the first year, not all farmers could grow two crops due to soil acidity. When the soil became sufficiently flushed in the second or third year, all farmers started to grow two crops per year. The command area is almost fully irrigated now.</p>
Next Steps:	<p>Engineering</p> <p>Work on the operational and maintenance plans of this scheme in collaboration with BANTIC. Some scheme improvements may be conducted next year.</p> <p>O&M</p> <p>Carry out a land holding survey to clearly determine FWUG members' irrigated areas and their payments of Irrigation Service Fees (ISF).</p> <p>Continue strengthening the capacity of the FWUG and FWUC through follow-up visits and provision of technical support in order to ensure sustainability of the scheme.</p> <p>Redefine the roles of the FWUG, and transfer all roles to it.</p> <p>Reform BANTIC as suggested by the PDWRAM to ensure sustainability, accountability and transparency – which are currently weak.</p>
Surprises, Adjustments or Problems:	<p>PRASAC Canal or Canal 98 has been silting up for more than 15 years without much maintenance or dredging. This has resulted in limited water flows in the main canal and in the newly constructed Krapum Chhuk canal. CAVAC has now supported BANTIC in canal dredging through the SIF (Irr 13.3).</p> <p>The FWUC, BANTIC, does not have much confidence in this newly established FWUG, so the FWUG has not had a chance to implement its full roles yet.</p>
Lessons Learnt:	<p>A Land holding survey is a key tool for FWUG / FWUC to manage the fee collection. Every canal should have the land holding survey done before the FWUC establishment.</p> <p>Before integrating a new FWUG into an existing structure – it is necessary to get an in-depth understanding of the existing FWUC for the whole structure to function smoothly. Otherwise, as in the case of this scheme, close follow-up activities with the FWUG and FWUC are needed after the FWUG establishment.</p>

INTERVENTION UPDATE: Int. No: Irr 10.3 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of an irrigation scheme: Tumnub Lok Canal, Takeo Province
Summary:	<p>Farmers in the Communes of Pech Sa and Krapum Chuk were growing wet season paddy and some limited dry season paddy. Agricultural production was limited by unreliable access to water. The community expressed a need for canal rehabilitation that would improve access to water supply and increase the area for double cropping.</p> <p>The Tumnub Lok Canal was selected for rehabilitation in 2011. A feasibility study was carried out and the canal was surveyed and designed. Construction of the canal commenced in March 2011. Additional structures were requested by farmers and CAVAC agreed to include these structures by amending the construction contract. Poor performance of the contractor resulted in long delays and finally cancellation of the contract. In 2013, CAVAC re-tendered the remaining works which were expected to be finalised by the end of this year.</p> <p>A FWUC was established in February 2012. Capacity building was completed in June 2012.</p>
Achievements to Date:	<p>Engineering</p> <p>The detailed design was undertaken by Takeo PDWRAM under an agreement with CAVAC.</p> <p>CAVAC conducted a tender process for a construction contract, which was evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in March 2011. The contractor made good progress initially, but was unable to finish before the onset of the wet season and annual flooding in 2011. A contract amendment was signed with an alternate contractor for additional drainage and crossing structures along the canal.</p> <p>Construction supervision has been conducted by the PDWRAM under an agreement with CAVAC.</p> <p>The actual command area of this scheme has been assessed by a tracking GPS device with assistance of FWUG members.</p> <p>Further scheme improvements, if needed, will be conducted jointly by CAVAC and PDWRAM in the coming years.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUC for this canal. The FWUC was established in early February 2012 through community meetings and elections. Capacity building was completed in June 2012.</p> <p>CAVAC has been following up with the trained FWUC to strengthen its capacity.</p> <p>In the first year after completion (2012), the FWUC has collected a remarkable amount of the fees. That gave the FWUC much confidence in managing the scheme.</p> <p>In the second year (2013), the FWUC started to collect ISF, but the total amount is almost half of that of the first year. This is due to reduced participation of private water sellers. They wait for other private water sellers who have not paid to the FWUC since the first year to pay first. This makes it difficult for the FWUC to collect the fees.</p> <p>The fees collected have been used on the O&M of the scheme and incentives for FWUC members. For example, the FWUC has spent some money to backfill the collapsed embankments. The remaining budget is now around US\$3,000.</p> <p>Cropping has now increased from one to two crops per year since the canal was rehabilitated.</p>
Next Steps:	<p>Engineering</p> <p>Continue working on additional structures and fixing the slope of the canal embankments. Completion is expected by July 2013.</p> <p>O&M</p> <p>Conduct a land holding survey to get accurate irrigated area data for the FWUC.</p> <p>Continue strengthening the capacity of the FWUC through close follow-up visits and provision of technical support, including financial management skills.</p> <p>Work with the FWUC on additional structures if necessary as the gravity flow of water encourages farmers to pay the fees to the FWUC if the structures decrease pumping costs.</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>The soil at this scheme is in poor condition for the construction of canal and embankments. In that case, a flatter slope needs to be designed to avoid embankment failure.</p> <p>O&M</p> <p>CAVAC has noticed the enthusiastic manner in which the FWUC approaches its O&M work. At this stage the financial management skills of the FWUC are not good enough to financially manage the</p>

	<p>scheme. CAVAC will work on strengthening this expertise within the FWUC.</p> <p>An old water gate was demolished during the construction which has created difficulties for farmers to get water onto their paddy fields. CAVAC has now decided to construct two new water gates to raise the water level to enable farmers and private water sellers to reduce their pumping costs.</p>
Lessons Learnt:	<p>Daily construction supervision is important to ensure that the contractor's work meets the requirements of the design and technical specifications.</p> <p>Any existing structures taken out during the rehabilitation of a canal should be put back, as those structures are usually useful to farmers.</p> <p>CAVAC needs to closely monitor FWUC work after its establishment, and training is essential to ensure the FWUC is able to take on established roles and responsibilities.</p> <p>A land holding survey is a key tool for a FWUG / FWUC to manage fee collection. Every canal should have this done before the FWUC establishment.</p>

INTERVENTION UPDATE: Int. No: Irr 10.4 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of an irrigation scheme: Kveng Tayi Canal, Takeo Province
Summary:	<p>Farmers in the Commune of Prey Yutka were growing recession and early wet season paddy and some limited dry season paddy close to the PRASAC canal. Agricultural production was limited by unreliable access to irrigation water from the main canal. The community expressed a need for canal construction to increase the area with access to reliable water for double cropping.</p> <p>The Kveng Tayi Canal was selected for rehabilitation in 2011. A feasibility study was carried out and the canal was surveyed and designed. Construction commenced in April 2011 and was completed in June 2012.</p> <p>A FWUG was established in February 2012. Capacity building was completed in July 2012.</p>
Achievements to Date:	<p>Engineering The detailed design was undertaken by Takeo PDWRAM under an agreement with CAVAC.</p> <p>CAVAC conducted a tender process which was evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in April 2011. The contractor made good progress but was unable to finish before the onset of the wet season and annual flooding in 2011. The original work was completed in early 2012. Two additional crossing structures, requested by the community, were added to the contract through a contract amendment, and the construction of these two structures was completed in mid-2012.</p> <p>Construction supervision was conducted by the PDWRAM under an agreement with CAVAC.</p> <p>The actual command area of this scheme was assessed by a tracking GPS device with assistance from FWUG members.</p> <p>O&M CAVAC commissioned the PDWRAM to establish and build capacity of a FWUG for this canal. The FWUG was established in February 2012 through community meetings and elections. Capacity building was completed in July 2012.</p> <p>CAVAC has been following up with the trained FWUG to strengthen its capacity.</p> <p>While the FWUG of this scheme is similar to the one for Krapum Chhuk, CAVAC has noticed that the cooperation among its members is stronger. The FWUG is confident that it can do the work with little support from the FWUC of the PRASAC canal.</p> <p>This year, the FWUG has collected about US\$1,260. This year's fees have been used for the maintenance of Canal 98 (main canal of Krapum Chhouk and Kveng Tayi) and incentives for FWUG board members.</p> <p>Before the construction farmers found it difficult to get enough water for their second crop. The water was not reliable as farmers had to negotiate to buy water from Vietnam, and prices fluctuated yearly. Farmers started using the water from the Kveng Tayi Canal immediately after the canal completion for one or two crops per year.</p>
Next Steps:	<p>Engineering Repair the damage caused by erosion at a location where there is a bridge using the FWUC's maintenance funds.</p> <p>O&M Closely follow-up with the FWUG to continue strengthening its capacity in financial management and maintenance planning.</p> <p>Conduct a land holding survey to get more accurate irrigated area data for the FWUC / FWUG.</p>
Surprises, Adjustments or Problems:	<p>Engineering Ground conditions of some parts of the canal were very wet which made construction slow, which necessitated the use of cofferdams. The wet season flood came early and lasted longer than usual in 2011, which significantly affected the construction progress as well as the construction quality.</p> <p>O&M The O&M work is new for members of this FWUG. As such, they require support from the FWUC and / or PDWRAM to ensure that their work is done properly.</p> <p>The FWUC and FWUG do not have accurate irrigated area data. The data that they have is from private water sellers. Given the fact that private water sellers are entrepreneurs who are profit-oriented, most of them tend not to reveal actual irrigated data.</p>
Lessons Learnt:	<p>Good and regular construction supervision is important to ensure that the quality of the work meets the required standards.</p> <p>Defining new roles of a FWUG in an existing FWUC structure requires a lot of effort.</p> <p>Having a land holding survey is essential for the FWUG.</p>

INTERVENTION UPDATE: Int. No: Irr 12.3 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of an irrigation scheme: So Hang Canal, Takeo Province
Summary:	<p>Farmers in the Communes of Borey Chulsa, Daung Kpoh, Romenh, and Kork Por grow traditional wet season rice and / or some limited dry season rice with very limited access to reliable water supply. The community expressed a need for rehabilitation of the So Hang canal to improve the water supply and increase access to a reliable water source.</p> <p>The So Hang Canal was then selected for rehabilitation. A feasibility study was done and the canal was surveyed and designed. Construction commenced in April 2012, however was not completed as planned due to several modifications that were needed. It is expected that the construction will be completed in August 2013.</p> <p>The FWUC establishment was completed in May 2013. Capacity building for the FWUC is expected to start in August 2013.</p>
Achievements to Date:	<p>Engineering</p> <p>The survey and detailed design of the canal were undertaken by Takeo PDWRAM under an agreement with CAVAC.</p> <p>CAVAC conducted a tender process for a construction contract, which was evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in April 2012. The progress of construction was slow and the contractor's field work management was not effective for both the structural and earth work. By the end of June 2013, 90% of the construction work was completed.</p> <p>Construction supervision in 2012 was conducted by the PDWRAM under an agreement with CAVAC, however since early 2013 it has been done in close collaboration with a CAVAC Construction Supervisor.</p> <p>Some modifications have been done on structural and earth works to improve the scheme.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUC for this canal. The FWUC establishment commenced in September 2012 and was completed in May 2013. Capacity building for the FWUC started right after the FWUC had been established. It was later postponed due to the national election. It will resume in August 2013.</p> <p>After the FWUC was established, a few private water sellers have come to investigate the area.</p>
Next Steps:	<p>Engineering</p> <p>Complete construction work by August 2013.</p> <p>O&M</p> <p>Conduct FWUC capacity building and facilitate the involvement of private water sellers.</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>Embankment heights were too high in the original design. This would result in over-siltation from the embankments, especially during the first year when grass was not established. This would also increase maintenance costs for the FWUC. The embankments were lowered to just above the flood level to allow for movement along the canal during the flood season.</p> <p>The original proposed length of So Hang canal was about 12 kilometres; but was reduced to 8.7 kilometres. PDWRAM has now requested that the canal be extended to the original proposed length. As the canal is deep, it requires large land contributions from farmers. The water level and availability in the canal will be analysed before extending the canal.</p> <p>O&M</p> <p>The FWUC has strong support from the local authorities, both communes and districts. CAVAC is concerned that local politics may get involved in the O&M of this scheme, which could result in difficulties for O&M staff. Currently FWUC capacity building cannot be conducted due to low attendance numbers. The training will be resumed after the national election when attendance numbers may increase again.</p>
Lessons Learnt:	<p>A canal deeper than four meters should be avoided due to: large land losses; high pumping costs; and high maintenance costs for the FWUC. Pumping stations should be considered in these cases.</p>

INTERVENTION UPDATE: Int. No: Irr 12.4 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of an irrigation scheme: Prey Rumdeng Canal, Takeo Province
Summary:	<p>Farmers in the Communes of Prey Rumdeng and Ta O in Cambodia's Kirivong District requested that the Prey Rumdeng Canal be rehabilitated to improve the irrigated water supply, and therefore increase the number of crops per year.</p> <p>CAVAC conducted a feasibility study and the canal was surveyed and designed. Construction commenced in March 2012. Some additional structures were added, and all work was completed in December 2012.</p> <p>A FWUC was established and fully completed by April 2013 to ensure ongoing sustainability and maintenance of the scheme.</p>
Achievements to Date:	<p>Engineering</p> <p>The survey and detailed design of the canal were undertaken by Takeo PDWRAM under an agreement with CAVAC.</p> <p>CAVAC ran a tender process for a construction contract, which was evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in March 2012 and was completed in December 2012.</p> <p>Construction supervision was conducted by the PDWRAM under an agreement with CAVAC.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUC for this canal. The FWUC establishment commenced in September 2012 and was completed in April 2013. Capacity building for the FWUC will commence after the national election.</p>
Next Steps:	<p>Engineering</p> <p>Work on some additional structures for scheme improvement to increase the potential command area.</p> <p>Assess the command area with a GPS device before the floods come in August 2013.</p> <p>O&M</p> <p>Conduct FWUC capacity building.</p> <p>Observe the canal water usage and the involvement of private water sellers.</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>Initially there was an agreement with the authorities in Vietnam to connect the Prey Rumdeng scheme to the Vin The canal in Vietnam – this would ensure a continuous supply of irrigation water. However, the canal construction was stopped two kilometres before the border with Vietnam to avoid negative environmental impacts. CAVAC's Environmental Expert recommended that without a comprehensive environmental impact assessment in Vietnam, the canals should not be connected.</p> <p>O&M</p> <p>The Cambodian election does have an impact on the FWUC establishment, a land holding survey and capacity building. CAVAC has delayed all activities until after the election;</p> <p>This canal is directly connected to Thnoat canal in Kampot province. The fee system at Thnoat canal was set up differently and is much cheaper than the fees paid at Prey Rumdeng canal. This has created some issues;</p> <p>The neopatrimonialism between private water sellers and local authorities (communes and districts) does create contractual difficulties for the FWUC to manage – i.e. private water sellers not paying O&M fees to the FWUC;</p> <p>Difficulties were created by not connecting the additional two kilometres to the Vietnam border. Some private water sellers are not paying ISF as the water supply is not enough.</p>
Lessons Learnt:	<p>The FWUC establishment process should be started before or at the same time as canal construction. The extension of a canal across the provincial border should be considered carefully before construction as it creates a lot of challenges for FWUC establishment at a later stage.</p> <p>Cross border environmental issues should be processed before the canal construction and clearly informed to the government through formal letters.</p> <p>Partners should be informed of any environmental issues identified or any decision on canal construction through formal letters.</p>

INTERVENTION UPDATE: Int. No: Irr 12.5 AWP No: 2.2 Date: 30 June 2013	
Name:	SIF: Support to BANTIC and PLOVIC in rehabilitating two secondary canals in Takeo
Summary:	<p>BANTIC – Banteay Thleay</p> <p>Farmers in the Commune of Krapum Chhuk, Koh Andet District, grew recession paddy and some limited dry season paddy along the PRASAC Canal. Agricultural production was limited by unreliable access to water. The community requested a Secondary Canal from the PRAKSAK Canal be rehabilitated to improve water supply and increase the area with reliable water for double cropping.</p> <p>PLOVIC – Plov Touk</p> <p>Farmers in the Communes of Kirichong Koh, Soam District, and Phnom Den Commune, Kirivong District, grew recession paddy and some limited dry season paddy along the PRASAC Canal. Agricultural production was limited by unreliable access to water. The community requested rehabilitation of a secondary canal branching from the PRASAK Canal to improve water supply and increase access to reliable water for double cropping.</p> <p>CAVAC agreed to support these two schemes, which were funded through the SIF mechanism on a cost-sharing basis with the community.</p>
Achievements to Date:	<p>Engineering</p> <p>The canal construction started in April 2012 and finished in June 2012.</p> <p>O&M</p> <p>The two FWUCs were very active in monitoring the construction progress.</p>
Next Steps:	<p>Engineering</p> <p>Work out unit costs for canal maintenance with these two SIF contracts</p> <p>O&M</p> <p>Conduct a land holding survey for BANTIC.</p>
Surprises, Adjustments or Problems:	<p>O&M</p> <p>The FWUC of the Banteay Thleay Canal has had difficulties dealing with private water sellers. As the FWUC does not have accurate irrigated area data, some private water sellers pay inaccurate fee amounts.</p>
Lessons Learnt:	<p>UXO investigation and clearance should be conducted in advance where there are perceived risks.</p> <p>When construction contracts are managed by the FWUCs, the FWUCs should take full ownership in managing the contracts and construction progress.</p> <p>Land holding surveys are needed for the FWUCs to better manage their schemes.</p>

INTERVENTION UPDATE: Int. No: Irr 13.1 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of an irrigation scheme: Rokar Chhuk Canal, Takeo Province
Summary:	<p>Farmers in the Commune of Char in Prey Kabas District requested rehabilitation of Roka Chhuk Canal to improve the water supply from a depression lake in the area. This would enable rice farmers to produce two crops per year.</p> <p>The Rokar Chhuk Canal was selected for rehabilitation in 2013. A feasibility study was conducted and the canal was surveyed and designed. Construction commenced in March 2013 and some additional structures were added. All work will be completed in December 2013.</p>
Achievements to Date:	<p>Engineering</p> <p>The survey and detailed design of the canal were undertaken by Takeo PDWRAM under an agreement with CAVAC.</p> <p>CAVAC ran a tender process to find an appropriate construction company. Tenders were evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in March 2013.</p> <p>Construction supervision was conducted jointly by PDWRAM and CAVAC Construction Supervisors.</p> <p>O&M</p> <p>CAVAC signed a contract with the PDWRAM to establish and build the capacity of a FWUC for this canal. A land holding survey is now being conducted by the PDWRAM as part of the FWUC establishment and capacity building contract.</p>
Next Steps:	<p>Engineering</p> <p>The contractor started its work late in the dry season. Completion is now expected by December 2013.</p> <p>O&M</p> <p>The establishment and training of the FWUC is expected to finish in February 2014.</p>
Surprises, Adjustments or Problems:	<p>O&M</p> <p>The command area suggested by the PDWRAM is optimistic. The availability of water is a concern for CAVAC, as a large amount is needed for the proposed command area.</p>
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Irr 13.2 and 13.3 AWP No: 2.2 Date: 30 June 2013	
Name:	SIF: Support to BANTIC and PLOVIC in dredging their main canal in Takeo
Summary:	<p>BANTIC – Banteay Thleay</p> <p>Farmers in Prey Khla, Krapum Chhuk, and Prey Yuthka communes (Koh Andet district) grow paddy along the PRASAK Canal – which has been heavily affected by siltation. The community requested for the scheme to be dredged to improve water supply and increase the area with reliable water for double cropping.</p> <p>PLOVIC – Plov Touk</p> <p>Farmers in the Communes of Kamnob and Phnom Den Communes (Krivong District) grow paddy along the PRASAK Canal. This part of the canal is likewise significantly affected by siltation. Farmers in this community have requested that this part of the canal be dredged to improve water supply and increase the area with reliable water for double cropping.</p> <p>CAVAC is now supporting both communities to rehabilitate the canal through dredging. These two projects are being funded through the SIF mechanism on a cost-sharing basis with the community.</p>
Achievements to Date:	<p>Engineering</p> <p>Work on these two SIF projects commenced in May 2013.</p> <p>PLOVIC's main canal dredging is approximately 70% completed.</p> <p>BANTIC's main canal dredging is approximately 40% completed.</p> <p>The percentile differences are due to alternate lengths and different dredging methods. For example, on the Plov Touk scheme, work can be done on the ground using a normal excavator. The scheme at Banteay Thleay can only be done during high tide using a crane excavator positioned on a ferry.</p> <p>O&M</p> <p>The FWUCs of both schemes are active in monitoring the construction progress. CAVAC showed them how to measure canal depths using depth sounders and tape measures. The FWUCs have used this knowledge to monitor the construction work.</p>
Next Steps:	<p>Engineering</p> <p>Complete the work on canal construction so that there will be enough water for an early wet season crop next year.</p> <p>O&M</p> <p>Conduct a land-holding survey for BANTIC.</p>
Surprises, Adjustments or Problems:	<p>O&M</p> <p>These FWUCs submitted their applications to CAVAC even though there was no call for applications this year. The application forms were filled out with the assistance from PDWRAM staff and district staff.</p> <p>The FWUC at Banteay Thleay (BANTIC) does not have accurate irrigated area data, so it cannot accurately collect fees from private water sellers.</p>
Lessons Learnt:	

INTERVENTION UPDATE: Int. No: Irr 10.2 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of irrigation scheme: Prey Tonle Canal, Kampot Province
Summary:	<p>The farmers of Prey Tonle grew a wet season paddy crop. Agricultural production was limited by unreliable access to irrigation water, and the community expressed a need for the construction of a run-off-river canal that would improve water supply and increase access to water for double or triple cropping.</p> <p>The 3.2-kilometer Prey Tonle Canal was selected for implementation at the start of CAVAC in March 2010. Construction work was completed in June 2010.</p> <p>A FWUC was established and capacity building was completed in June 2012 to ensure sustainability and on-going maintenance.</p>
Achievements to Date:	<p>Engineering</p> <p>The detailed design was undertaken by the PDWRAM under an agreement with CAVAC.</p> <p>CAVAC ran a tender process and construction was awarded to Taing Cheng Oing, Co., Ltd.</p> <p>Construction commenced in April 2010, and was completed in June 2010.</p> <p>Construction supervision was done by the PDWRAM under an agreement with CAVAC.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUC for this canal. The FWUC was established through community meetings and elections.</p> <p>Capacity building was completed in June 2012.</p> <p>CAVAC has continued to follow up with the trained FWUC to strengthen its capacity in scheme O&M.</p> <p>The FWUC Chief and some other committee members were not committed to leading. As such, the FWUC committee was reformed, and now consists of motivated members to lead the O&M of the canal. Local authorities have also recognised this change in the FWUC.</p> <p>The FWUC is planning to collect its ISF for the first time in July 2013. Village meetings were facilitated by the FWUC, CAVAC, local authorities, and the PDWRAM staff to provide fee collection information in June 2013. It had to be conducted before the fee collection commenced in July – in which participation of CAVAC, the local authorities, and the PDWRAM would be required.</p>
Next Steps:	<p>Engineering</p> <p>Work with the FWUC and private water sellers to further improve this irrigation system by developing more secondary and tertiary canals.</p> <p>O&M</p> <p>Continue to provide advice and support to FWUC committee members in various areas, including financial management, maintenance planning, and leadership skills.</p>
Surprises, Adjustments, or Problems:	<p>O&M</p> <p>The establishment of the FWUC was delayed due to limited PDWRAM capacity.</p> <p>The fee collection at Prey Tonle has been a challenge because parallel to the CAVAC canal, another canal of 6.5 km in length was constructed by the government and farmers are not required to pay any fees for using water from the government canal.</p> <p>The FWUC has had no meetings since it had been established and trained. This is due to the fact that committee members live far away from each other. As such, the FWUC does not have an adequate maintenance plan. A meeting was organised by CAVAC between the FWUC and the local authorities to discuss options for addressing this challenge.</p>
Lessons Learnt:	<p>Follow up after the FWUC establishment and training is needed to ensure that the FWUC will continue its activities. It is unlikely that the FWUC will work without any external support during the early years after establishment.</p>

INTERVENTION UPDATE: Int. No: Irr 10.6 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of irrigation scheme: Sbove Andet Canal, Kampot Province
Summary:	<p>The farmers in Sdach Kong Khang Cheung grew wet season paddy and some limited dry season paddy close to the Stung Touk Meas perennial river. Agricultural production was limited by unreliable access to irrigation water. The community expressed a need for canal construction and some rehabilitation to improve water supply and increase the area with reliable water to enable double cropping. The Stung Touk Meas is influenced by high water levels downstream from Vinte Canal which is part of the Lower Mekong / Bassac River systems.</p> <p>The Sbove Andet Canal was selected for rehabilitation in 2011. A feasibility study was carried out and the canal was surveyed and designed by Kampot PDWRAM. Construction commenced in April 2011 and was completed in mid-April 2012.</p> <p>A FWUC was established in February 2012 and capacity building was completed in June 2012.</p>
Achievements to Date:	<p>Engineering The detailed design was undertaken by the PDWRAM under an agreement with CAVAC. Tenders were invited for a construction contract and evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in April 2011. The contractor made good progress initially, but was unable to finish before the onset of the wet season and annual flooding which occurred early.</p> <p>As construction resumed after the flooding, some additional structures were added to improve drainage and canal functionality. By mid-April 2012 all work was completed.</p> <p>Construction supervision was done by the PDWRAM under an agreement with CAVAC.</p> <p>O&M CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUC for this canal. The FWUC was established in February 2012. Capacity building was completed in June 2012. CAVAC has continued to follow up with the trained FWUC to further strengthen its capacity.</p> <p>The FWUC is very active in performing its work because its members understand the importance of canal sustainability. Initially farmers only grew wet season paddy which was very unpredictable and low yielding. The FWUC's key aim is to have a sustainable canal which will be available for use in the long term.</p> <p>The FWUC has started its first fee collection. So far this FWUC has collected only a small amount of money (about US\$500). The main reason for a small amount of fees collected was a delay between harvest and fee collection time – when some farmers had no more money left to pay and others were reluctant to pay.</p> <p>The FWUC has encouraged farmers to construct secondary canals to increase the irrigated area. So far, 58 secondary canals have been dug.</p> <p>The canal is very promising for farmers. In the first year after canal rehabilitation, farmers increased production from one to three crops. Unfortunately the third crop was damaged by early floods. Farmers now grow two crops, and most farmers are growing a modern, high yielding variety rice variety (IR504).</p>
Next Steps:	<p>Engineering Work on further scheme improvements such as lining of secondary canals. This will be done in close collaboration with the FWUC and water sellers, on a cost-sharing basis.</p> <p>O&M Awareness meetings on fee collection for farmers will be held by the FWUC with the participation of the local authorities, PDWRAM and CAVAC to ensure that all farmers clearly understand the ISF.</p> <p>Continue to strengthen the capacity of the FWUC committee, especially in financial management and maintenance planning.</p>
Surprises, Adjustments or Problems:	<p>Engineering Farmers dug distribution canals by themselves but not all are efficient enough to reduce their pumping costs.</p> <p>O&M As stated in FWUC by-law, ISF in the first year was set at 150 kilograms of paddy per hectare of irrigated land per year. In the second year, FWUC agreed to decrease ISF to 100 kilograms of paddy/hectare/year after discussions with water users.</p> <p>The FWUC might, in the future, consider buying its own excavator for the construction of distribution canals and removing silt from the main canal.</p>
Lessons Learnt:	<p>Regular FWUC meetings are very important and should be conducted every two months, at the least.</p> <p>Proper irrigation water management at the watershed level will be important to ensure long-term access to water for irrigation purposes.</p>

INTERVENTION UPDATE: Int. No: Irr 10.7 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of irrigation scheme: O'Kak Canal, Kampot Province
Summary:	<p>The farmers in Tuk Meas Khang Lech grew wet season paddy and some limited dry season paddy close to the Stung Touk Meas perennial river. Agricultural production was limited by unreliable access to water. The community expressed a need for canal rehabilitation to improve water supply and increase reliable water access for double or triple cropping.</p> <p>The O'Kak Canal was selected for rehabilitation in 2011. A feasibility study was carried out and the canal was surveyed and designed. Construction commenced in April 2011 and was completed in May 2012.</p> <p>A FWUC was established in November 2011 and capacity building was completed in June 2012.</p>
Achievements to Date:	<p>Engineering</p> <p>The detailed design was undertaken by the PDWRAM under an agreement with CAVAC.</p> <p>A tender process was conducted and evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in April 2011. The contractor was unable to finish construction before the onset of the wet season and annual flooding which came earlier than expected.</p> <p>As construction resumed after the flooding, some additional drainage and crossing structures were needed. By May 2012 all work was completed.</p> <p>Construction supervision was done by the PDWRAM under an agreement with CAVAC.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build capacity of a FWUC for this canal. The FWUC was established in November 2011 through community meetings and elections. Capacity building was completed in June 2012.</p>
Next Steps:	<p>Engineering</p> <p>Due to sandy soil conditions, parts of the canal embankments collapsed, blocking the flow of water in the canal. Several options were reviewed for stabilisation of canal embankments. It was finally decided to provide concrete lining at the section where the embankment had collapsed. Due to technical issues the contractor will resume construction after the rainy season.</p> <p>O&M</p> <p>The FWUC will conduct awareness meetings on the ISF process once canal construction is completed.</p> <p>Continue strengthening the capacity of the FWUC committee members, particularly on financial management and maintenance planning.</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>The sandy soil prevalent in the area necessitated a substantial investment in canal lining.</p> <p>O&M</p> <p>After the canal rehabilitation, only a small percentage of farmers started to use the water in the canal for their second crop. The water level in the canal was low and farmers were concerned about the lack of water to use for their crop.</p> <p>The FWUC has not been very active as the canal still needs further improvements on the embankments.</p>
Lessons Learnt:	<p>The pumping option, not considered feasible at the time, would have been a better technical option. Farmers were not that enthusiastic about it. CAVAC should have been more active in providing information regarding land loss, gravity fed irrigation, and the ease of operating pumping equipment.</p>

INTERVENTION UPDATE: Int. No: Irr 10.8 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of irrigation scheme: Thnoat Canal, Kampot Province
Summary:	<p>The farmers of Thnoat Chong Srang grew wet season paddy and some limited dry season paddy close to the Prek Ansar perennial river. Agricultural production was limited by unreliable access to water. The community expressed a need for canal rehabilitation to improve water supply and increase the area with access to reliable water for double or triple cropping.</p> <p>The Thnoat Canal was selected for rehabilitation in 2011. A feasibility study was carried out and the canal was surveyed and designed. Construction commenced in April 2011 and was completed in May 2012.</p> <p>A FWUC was established and the capacity building was completed in March 2012.</p>
Achievements to Date:	<p>Engineering</p> <p>The detailed design was undertaken by the PDWRAM under an agreement with CAVAC. CAVAC conducted a tender process which was evaluated by MOWRAM, PDWRAM and CAVAC. Construction commenced in April 2011. The contractor made good progress but was unable to finish before the onset of the wet season and annual flooding which came early.</p> <p>As construction resumed after the flooding, some drainage and soil erosion protection structures were added to the contract.</p> <p>Construction supervision was done by the PDWRAM under an agreement with CAVAC.</p> <p>The construction was completed in late 2012.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUC for this canal. The FWUC was established through community meetings and elections. The capacity building was completed in March 2012.</p> <p>CAVAC continues to work with the FWUC to strengthen its capacity in scheme O&M.</p> <p>The FWUC is currently working with private water sellers more closely. Some private water sellers have signed contracts with the FWUC.</p> <p>The FWUC is undertaking fee collection from private water sellers. FWUC committee members are assessing irrigated area measurement to get the data for fee collection from private water sellers.</p> <p>There had been no private water sellers in the area before the canal was rehabilitated. After the canal rehabilitation, private water sellers from nearby areas have started investing in water delivering services for farmers by taking water from the Thnoat Canal.</p>
Next Steps:	<p>Engineering</p> <p>Support and encourage the construction of lateral canals and other water saving techniques. CAVAC is planning to construct secondary canals as a model for private water sellers to replicate. These canals will be lined with reinforced concrete or brick masonry which provides high distribution efficiency and leads to a reduction in pumping costs.</p> <p>O&M</p> <p>Strengthen the relationship between private water sellers and the FWUC to make sure that they can work well together.</p> <p>Strengthen the capacity of the FWUC on financial management and maintenance planning.</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>Without adequate and complete distribution systems, the potential command area could not be supplied with water from the main canal.</p> <p>O&M</p> <p>Some private water sellers are not willing to cooperate with the FWUC due to socio-political interference. This also causes difficulty in fee collection.</p> <p>Farmers in the community have noted that they are losing money from producing rice crops. They claim that production costs are too high – especially pumping costs. CAVAC will investigate into possibilities of lowering these costs through scheme improvements.</p>
Lessons Learnt:	<p>The relationship between private water sellers and the FWUC should be formalised. The local authorities, especially the commune councils, should be involved to facilitate the formalisation process through effective contract management.</p> <p>Appropriate water management at the basin level is essential for future availability of water resources.</p>

INTERVENTION UPDATE: Int. No: Irr 12.1 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of irrigation scheme: Spean Touch Canal, Kampot Province
Summary:	<p>The farmers of Prey Kroeus grew traditional wet season rice and / or short-term dry season rice with a limited access to reliable water. The community expressed a need to rehabilitate the Spean Touch Canal to improve water supply and increase the command area, with access to a reliable water source for double or triple cropping each year.</p> <p>A FWUC was established, and capacity building for the FWUC was completed.</p>
Achievements to Date:	<p>Engineering</p> <p>The survey and detailed design of the canal were undertaken by Kampot PDWRAM under an agreement with CAVAC.</p> <p>CAVAC conducted a tender process for a construction contract which was evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in late April 2012. The early onset of the wet season resulted in limited progress on the construction. Construction is expected to be completed in July 2013.</p> <p>Construction supervision is being conducted by the PDWRAM under an agreement with CAVAC.</p> <p>Additional off-take PVC pipes were placed to provide farmers with ease in pumping water from the main canal. Using these pipes farmers can reduce pumping costs and the risk of damaging the embankments.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUC for this canal. The FWUC establishment commenced in September 2012 and was finished in February 2013. The capacity building for the FWUC was also started in March 2013 and finished in June 2013</p>
Next Steps:	<p>Engineering</p> <p>Complete the construction work.</p> <p>O&M</p> <p>Continue to strengthen the capacity of the FWUC by providing follow-up advice and training in financial management and maintenance planning.</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>Parts of the canal have an organic black soil composition. This has been difficult for the contractor to work on in the wet season.</p>
Lessons Learnt:	<p>When soil compositions are soft, a special design is required for the scheme and the construction needs to be monitored closely.</p>

INTERVENTION UPDATE: Int. No: Irr 12.2 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of irrigation scheme: Prey Leu Canal, Kampot Province
Summary:	<p>The farmers of Banteay Meas Khang Lech grow traditional wet season rice and some limited dry season rice with very limited access to reliable water supply. The community expressed a need for rehabilitation of Prey Leu Canal to improve the water supply and increase access to a reliable water source.</p> <p>The Prey Leu Canal was then selected for rehabilitation. A feasibility study was completed and the canal was surveyed and designed. Construction commenced in March 2012 and was completed in October 2012.</p> <p>A FWUC was established successfully and capacity building commenced in December 2012 and finished in June 2013.</p>
Achievements to Date:	<p>Engineering</p> <p>The survey and detailed design of the canal were undertaken by Kampot PDWRAM under an agreement with CAVAC.</p> <p>CAVAC conducted a tender process which was evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>The construction commenced in March 2012. Both the PDWRAM and CAVAC are satisfied with the progress and quality of the construction done by the selected contractor.</p> <p>Construction supervision is the responsibility of the PDWRAM under an agreement with CAVAC.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build capacity of a FWUC for this canal. FWUC establishment commenced in October 2012 and was completed in November 2012. The capacity building for this FWUC was started in December 2012 and finished in June 2013.</p>
Next Steps:	<p>Engineering</p> <p>Support and encourage construction of lateral canals and other water saving techniques. CAVAC is planning to construct some secondary canals in order to provide farmers (and potential water sellers) with the ability to deliver water at lower costs to the whole command area.</p> <p>O&M</p> <p>Continue strengthening the capacity of the FWUC in various areas, including financial management, maintenance planning, and communication skills with relevant stakeholders.</p>
Surprises, Adjustments or Problems:	None to date
Lessons Learnt:	None to date

INTERVENTION UPDATE: Int. No: Irr 13.1 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of irrigation scheme: Hay Saun Canal, Kampot Province
Summary:	<p>The farmers of Banteay Meas Khang Cheun grow traditional wet season rice and some limited dry season rice with very limited access to reliable water supply. The community expressed a need for rehabilitation of Hay Saun Canal to improve the water supply and increase the area with access to a reliable water source.</p> <p>The Hay Saun Canal was selected for rehabilitation in 2013. A feasibility study was completed and the canal was surveyed and designed. Construction commenced in February 2013.</p>
Achievements to Date:	<p>Engineering</p> <p>The survey and detailed design of the canal were undertaken by Kampot PDWRAM under an agreement with CAVAC.</p> <p>CAVAC conducted a tender process which was then evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>The construction commenced in February 2013.</p> <p>Construction supervision is done by the PDWRAM under an agreement with CAVAC.</p> <p>Construction of canal is expected to be complete by the end of 2013.</p> <p>O&M</p> <p>The FWUC has not been established yet as CAVAC's work with the community, particularly the O&M work, has to be postponed until after the national election.</p>
Next Steps:	<p>Engineering</p> <p>Complete construction work.</p> <p>Establish and build the capacity of a FWUC for this canal.</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>A UXO was found in the canal area during construction. CMAC was engaged to investigate and clear the surrounding areas. The construction work was suspended for approximately two weeks.</p>
Lessons Learnt:	UXO investigation and clearance should be conducted in advance where there are perceived risks.

INTERVENTION UPDATE: Int. No: Irr 13.1 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of irrigation scheme: Chamlong Chrey Canal, Kampot Province
Summary:	<p>The farmers of Sdach Kong Khang Lech grow traditional wet season rice and some limited dry season rice with limited access to reliable water supply. The community expressed a need for rehabilitation of Chamlong Chrey Canal to improve the water supply and increase the area with access to a reliable water source.</p> <p>The Chamlong Chrey Canal was selected for rehabilitation. A feasibility study was completed and the canal was surveyed and designed.</p> <p>Construction is expected to commence in September 2013.</p>
Achievements to Date:	<p>Engineering</p> <p>The survey and detailed design of the canal including a pump house were undertaken by CAVAC as a model scheme for PDWRAM.</p> <p>O&M</p> <p>A FWUC for this scheme has not been established yet. As this scheme is a new model, CAVAC and the PDWRAM need to discuss and agree on the O&M work required for this scheme.</p>
Next Steps:	<p>Engineering</p> <p>Call for tenders for a construction contract.</p> <p>Start the construction.</p> <p>O&M</p> <p>Discuss with the PDWRAM the O&M work for this scheme.</p> <p>Establish and build the capacity of a FWUC.</p>
Surprises, Adjustments or Problems:	None at this stage.
Lessons Learnt:	None at this stage.

INTERVENTION UPDATE: Int. No: Irr 13.1 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of irrigation scheme: Reservoir 77, Kampot Province
Summary:	<p>The farmers of Sre Cheng commune in Chum Kiri district grow mainly one rice crop (wet season rice) per year with unreliable water supply from the rain. Often their crops are destroyed by droughts which occur in the late wet season. Crop damage can also occur during dry spells in the middle of the wet season. The local authorities of Sre Cheng have expressed a need for rehabilitation of Reservoir 77 to improve water supply and increase access to a reliable water source.</p> <p>After rehabilitation this reservoir will ensure reliable water supply for 160 hectares of wet season crops, and approximately 10 hectares for dry season rice cultivation and non-rice crop cultivation.</p>
Achievements to Date:	<p>Engineering</p> <p>In conjunction with Kampot PDWRAM, the CAVAC irrigation team conducted a number of visits to the site in order to collect socio-economic and engineering data. A commitment has been made to rehabilitate the existing reservoir scheme.</p> <p>CAVAC commissioned CMAC to clear UXOs within the defined boundary of this scheme. Construction activities will only be allowed within this boundary.</p> <p>A detail topographical survey for this scheme was completed by Kampot PDWRAM.</p> <p>A detailed design for this reservoir (dam and equipped structures) was completed by CAVAC.</p> <p>O&M</p> <p>CAVAC had informal discussions with the community and the local authorities (commune council members and village chiefs) about the possibility of forming a FWUC. They all have shown interest and appreciation for the FWUC establishment as they think this will add to the sustainability of the reservoir. This community has also heard about good examples of FWUC work for rehabilitated reservoirs in the nearby areas, such as Mlech and Steung Phe schemes.</p>
Next Steps:	<p>Engineering</p> <p>Start the tender process for an appropriate contractor in August 2013.</p> <p>O&M</p> <p>Start working with Kampot PDWRAM on FWUC establishment in August 2013. Lessons learned from Mlech and Steung Phe FWUCs will also be considered.</p>
Surprises, Adjustments or Problems:	<p>Around twenty (20) UXOs were found within a 30-meter buffered zone along the dam of Reservoir 77. They were removed from the site by the CMAC team.</p>
Lessons Learnt:	<p>Future construction sites shall be de-mined before any activity is started.</p>

INTERVENTION UPDATE: Int. No: Irr 10.12 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and construction of an irrigation scheme: Thnoat Chum Canal, Kampong Thom Province
Summary:	<p>The January 1 canal from the Stung Chinit reservoir was constructed about 10 years ago. Under an Asian Development Bank (ADB) loan project, a secondary canal, connecting to the January 1 Canal, was constructed a few years ago. Since then farmers in Thnoat Chum grew only wet season rice. Kampong Thom PDWRAM requested CAVAC to extend this canal to increase the command area for double cropping.</p> <p>This Thnoat Chum scheme was then selected for rehabilitation in 2011. A feasibility study was carried out and the canal was surveyed and designed. Construction commenced in April 2011 and was completed in August 2012.</p> <p>A FWUC was established and capacity building was completed in September 2012.</p>
Achievements to Date:	<p>Engineering</p> <p>The detailed design was undertaken by the PDWRAM under an agreement with CAVAC. CAVAC conducted a tender process which was evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in April 2011. Some structures were added and all work was completed in late 2012. The contractor will commence working on repairs after the six- month liability period, ending in June 2013.</p> <p>Construction supervision was done by the PDWRAM under an agreement with CAVAC.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUC for this canal. The FWUC was established in April 2012 through community meetings and elections. Capacity building was completed in September 2012.</p> <p>CAVAC has been following up with the trained FWUC to strengthen its capacity in scheme O&M.</p>
Next Steps:	<p>Engineering</p> <p>Work on further improvements of the scheme. The canal can be extended to increase the command area, and additional structures and secondary canals are needed.</p> <p>O&M</p> <p>Continue strengthening the FWUC's capacity. CAVAC will cooperate with ISC on FWUC capacity building.</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>The 'ADB' canal to which Thnoat Chum is connected needs some design improvements and repairs to ensure that water can be delivered. This work is likely to be implemented in 2014.</p> <p>O&M</p> <p>The FWUC established for the Thnoat Chum scheme also includes members representing farmers using water from the 'ADB' canal. This FWUC will maintain this whole combined scheme.</p>
Lessons Learnt:	<p>Engineering</p> <p>Daily construction supervision is important to ensure that the contractor's work meets the requirements of the design and technical specifications.</p> <p>O&M</p> <p>Before scheme extensions are planned, all farmers and local authorities need to be consulted and involved in the conceptual design stage.</p>

INTERVENTION UPDATE: Int. No: Irr 10.13 AWP No: 2.3 Date: 30 June 2013	
Name:	Development and Construction of Irrigation Schemes: Angko Canal, Kampong Thom Province
Summary:	<p>Farmers in Kampong Ko grew wet season paddy and some limited dry season rice close to the Stung Sen River. Agricultural production was limited by unreliable access to water. The community expressed a need for rehabilitation of the Angko Canal to improve water supply and increase access to reliable water for double cropping.</p> <p>The Angko canal was selected for construction in 2011. A feasibility study was carried out and the canal was surveyed and designed. Construction commenced in April 2011 and the original work was completed. In 2012, CAVAC and the PDWRAM agreed to extend the Angko Canal two kilometres further. The extension work was completed but it needs additional structures.</p> <p>A FWUC was established in January 2012 and capacity building was completed in September 2012.</p>
Achievements to Date:	<p>Engineering</p> <p>The detailed design was undertaken by the PDWRAM under an agreement with CAVAC. CAVAC conducted a tender process which was evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction commenced in April 2011. The contractor started slowly and was unable to finish before the onset of the wet season and annual flooding in 2011. The work was completed in the following year, and the contractor will work on needed repairs after the six-month liability period ending in June 2013.</p> <p>The construction work on the original length of the canal was completed. Structural work on the extension will be completed in 2014.</p> <p>Construction supervision is managed by the PDWRAM.</p> <p>O&M</p> <p>CAVAC commissioned the PDWRAM to establish and build the capacity of a FWUC for this canal. The FWUC was established in January 2012 through community meetings and elections. Capacity building was completed in September 2012.</p> <p>CAVAC has been following up with the trained FWUC to strengthen its capacity.</p> <p>Farmers can now grow two crops per year, and the area of cultivation has continued to increase both inside the command areas and peripheral areas.</p> <p>The FWUC signed contracts with four private water sellers but only one private water seller has proved to be a good co-operator with the FWUC.</p> <p>The FWUC started collecting the ISF. More than US\$5,000 has been collected.</p> <p>The FWUC has spent some of the collected fees on maintenance of the canal embankments during this dry season.</p>
Next Steps:	<p>Engineering</p> <p>Resume construction of the canal after the wet season and modify the design to allow farmers to do double cropping without spending too much on pumping costs.</p> <p>Construct lateral canals and other structures at the farm level.</p> <p>O&M</p> <p>Cooperate with the ISC to strengthen the FWUC's capacity on O&M.</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>The quality of construction for this canal was initially below the expected standard. Some corrective action was required for some of the structures.</p>
Lessons Learnt:	<p>The scheme has proven to be too complex to be designed by PDWRAM staff.</p> <p>Daily construction supervision is important to ensure that the contractor's work meets the requirements of the design.</p>

INTERVENTION UPDATE: Int. No: Irr 13.1 AWP No: 2.3 Date: 30 June 2013	
Name	Development and construction of irrigation schemes: Secondary Canals 1,2 and 3 of the 6 January Canal, Kampong Thom Province
Summary	<p>Secondary Canals (SCs) 1, 2 and 3 of the 6 January Main Canal of the Tang Krasang Reservoir Scheme is located in Tang Krasang and Prasath Communes of Santuk District. The complete scheme consists of three major SCs (SC1, SC2 and SC3) and several tertiary canals along each of the SCs. The construction started in February 2013 after the feasibility study and design.</p> <p>Presently, SC2 and SC3 and tertiary canals as well as associated structures are being constructed. However, the construction of SC1 canal has not started yet. Each of these three secondary canals has been designed as a gravity-fed irrigation schemes with water sourced from the Tang Krasang Reservoir. Previously, only rain-fed wet season rice was cultivated in those areas, resulting in low yields.</p> <p>A contract on the FWUC establishment and capacity building was signed in June 2013 between CAVAC and Kampong Thom PDWRAM. It is expected that the PDWRAM's FWUC specialists will start this process in August 2013.</p>
Achievements to Date:	<p>Engineering</p> <p>The detailed design was undertaken by Kampong Thom PDWRAM under an agreement with CAVAC.</p> <p>CAVAC conducted a tender process which was evaluated by MOWRAM, PDWRAM and CAVAC.</p> <p>Construction supervision is conducted by the PDWRAM under an agreement with CAVAC.</p> <p>Construction of SC2 commenced in February 2013 and 65% has been completed by the end of this reporting period.</p> <p>Construction of SC3 commenced in February 2013 and 60% has been completed by the end of this reporting period.</p> <p>O&M</p> <p>CAVAC signed a contract with the PDWRAM on FWUC establishment and capacity building.</p> <p>Once CAVAC signs a contract with the ISC, the PDWRAM will cooperate with the ISC in this whole process of FWUC establishment and capacity building.</p>
Next Steps:	<p>Engineering</p> <p>Continue monitoring the construction work.</p> <p>Instruct the contractor to speed up the work and complete it within the contract period.</p> <p>O&M</p> <p>Continue strengthening the FWUC in order to ensure sustainability;</p>
Surprises, Adjustments or Problems:	<p>Engineering</p> <p>The quality of construction for this canal was initially below the expected standard. Some structures did not pass the technical requirements, so the contractor had to correct which clear instructions from CAVAC and PDWRAM engineers.</p>
Lessons Learnt:	

ANNEX 2: PARTNERS' REPORT

		1-Apr	Targets	% achieved*	1-Jul	Targets	% achieved*	1-Oct	Targets	% achieved*	31-Dec	Targets	% achieved*
Agribusiness													
PDA-led activities (Non-cumulative targets)													
Takeo													
	Laser land leveling				Land leveled (hectares)	30	100%						
	Field demonstrations												
	Early rice varieties				Activity plan submitted to CAVAC	1	100%	Field demos with field days completed	20				
	Medium mature rice varieties				Activity plan submitted to CAVAC	1	100%				Field demos with field days completed	30	
	Late mature rice varieties				Activity plan submitted to CAVAC	1	100%				Field demos with field days completed	20	
	Rice seed production training										Field demos with field days completed	13	
	Farmers' meetings to improve the village extension							Farmers' meetings conducted	30		Farmers' meetings conducted	50	
	Establishment of agricultural cooperatives				Meetings to disseminate AC concepts, principles, royal decree, and by-law formulation	30	100%	AC established	10				
	Agricultural cooperatives capacity building							Details to follow					

		1-Apr	Targets	% achieved*	1-Jul	Targets	% achieved*	1-Oct	Targets	% achieved*	31-Dec	Targets	% achieved*
	IPM Farmer Field School on rice production												
	Post-harvest training												
	Workshop on Pesticide and Fertilizer Management Law												
Kampot													
	Laser land leveling	Contract signed	1	100%	Land leveled (hectares)	30	100%						
					Contracts signed between wet season rice farmers and PDA	2	100%	Field demos completed (wet)	2		Field demos completed (dry)	2	
								Field day conducted (wet)	1		Field day conducted (dry)	1	
	Wet season field demonstrations				Contracts signed between farmers and PDA	40	100%				Field demos with field days (wet)	40	
	Workshop on Fertilizer and Pesticide Management Law							Workshop conducted	1		Workshops conducted	2	
	Pilot project / Experiment for durian plantation disease treatment							Contract signed	1		Durian pilot project to be completed in June 2014		
	Establishment of agriculture cooperatives				Meetings to disseminate concepts, principles, and royal decree of AC establishment	10	100%				AC established	5	
	Capacity building and training in							Details to follow					

		1-Apr	Targets	% achieved*	1-Jul	Targets	% achieved*	1-Oct	Targets	% achieved*	31-Dec	Targets	% achieved*
	management and accounting for agricultural cooperatives												
	Capacity building and exchange visits for existing agricultural cooperatives												
	Training in soil classification and nutrient management for key farmers and agricultural cooperatives												
	Agricultural cooperative forum												
	Dry season field demonstrations												
	Post-harvest training for key farmers and agricultural cooperatives												
	Study tour for 20 PDA staff members												
	Exchange visits for key farmers												
Kampong Thom													
	Laser-land leveling	Contract signed	1	100%	Land leveled (hectares)	30	100%						
					Contracts signed between farmers and PDA	5	100%				Field demos (wet)	5	
											Field days (wet)	1	
	Rice seed production demonstration				Farmers selected and land prepared (hectares)	5	50%				Field demos with field days completed	5	
	Field demonstrations				Contracts signed between PDA and farmers	50	100%				Field demos with field days completed	50	
	Establishment of agricultural				Meetings to	10	100%				Cooperatives	5	

		1-Apr	Targets	% achieved*	1-Jul	Targets	% achieved*	1-Oct	Targets	% achieved*	31-Dec	Targets	% achieved*
	cooperatives				disseminate concepts, principles, and royal decree of AC establishment						established		
	Establishment of rice seed production groups in the agricultural cooperatives										Rice seed production groups established	4	
	Training courses on Management and Leadership for agricultural cooperatives							Details to follow					
	Training courses on Bookkeeping and Accounting for agricultural cooperatives												
	Annual forum on rice marketing												
	Post-harvest training												
	Workshop on Fertilizer and Pesticide Management Law												
GDA-led activities (Non-cumulative targets)													
Major Pest Control Manual development		Inception meeting	1	100%				Manual developed	1		Approved manual	1	
		First draft compiled	1	90%			100%				Dissemination workshop	1	
Rice value chain improvement project		Contract signed	1	100%				Stakeholder dialogue on Seed Law and Regulations conducted	1				
								Workshops on rice seed production	3		Workshops on rice seed production and	3	

		1-Apr	Targets	% achieved*	1-Jul	Targets	% achieved*	1-Oct	Targets	% achieved*	31-Dec	Targets	% achieved*
								and certification			certification		
											Certified seed produced (tons)	20	
											Forums on the 10 recommended rice varieties conducted	To be completed in June 2014	
Other activities if any													
CAVAC-led activities (Cumulative targets)													
Rice seed													
	Medium seed producers supported		2	50%		2	50%		2			2	
	Associations supported		4	100%		4	100%		4			4	
Fertiliser													
	Fertiliser companies supported		3	100%		4	100%		4			4	
	One fertiliser forum conducted											1	
Pesticides													
	Pesticide companies supported		2	100%		3	67%		3			3	
	Pesticide retailer training provided											5	
Rice export													
	Partners supported		2	100%		2	100%		2			2	
Vegetable seed													
	Vegetable seed companies supported		2	100%		2	100%		2			2	
	Vegetable field demos conducted											100	
	Field days conducted											57	

		1-Apr	Targets	% achieved*	1-Jul	Targets	% achieved*	1-Oct	Targets	% achieved*	31-Dec	Targets	% achieved*
Media													
	Media companies supported		1	100%		2	50%		2			2	
	A pilot episode produced and shown					1	50%						
	Research companies supported					1	100%		2				
Irrigation and Water Management													
2011 and 2012 main irrigation schemes finalised									11				
	Leading to farmer households having access							Details to follow					
	Leading to hectares able to irrigate												
2013 Irrigation schemes constructed									6			6	
Irrigation schemes studied and prepared for 2014									6			6	
Research and Extension													
Action research funded						1	100%		2			3	
Extension activities started related to:													
	Model farmer training											400	
Leading to farmers being supported												4000	
Sources of information supported									1				
Linking activities conducted									2				
PDA Help Desks Supported			3	100%		3	100%		3			3	
Business Enabling Environment													
Public-Private Dialogue groups established									3				

* In case a target is exceeded, it will also be shown as 100% achieved.

ANNEX 3: IRRIGATION COMPONENT DATA

Scheme			Location			Year	Length	Scheme Potential		Irrigated Area Present (Ha)			FWUC	
No	Name	Type	Province	District	Commune	Year of Constr.	Main Canal Length (Km)	Command Area (Ha)	Households (No)	Dry Season Irrigated	Early Wet Season Irrigated	Recession with Suppl. Irrigation	Establishment Compl./ Ongoing	Training Compl./ Ongoing
						1	2	3	4	5	6	7	8	9
1	Krapum Chhuk	Canal	Takeo	Koh Andet	Krapum Chhuk	2010	5.5	1,373	1,098		247	336	C	C
2	Kveng Tayi	Canal	Takeo	Koh Andet	Prey Yutka	2011	5.2	2,000	1,600		553	669	C	C
3	Tumnob Lork	Canal	Takeo	Koh Andet	Pech Sa and Krapum Chhuk	2011	14.8	3,700	2,960		702	1,267	C	C
4	Prey Rumdeng	Canal	Takeo	Kirivong	Prey Rumdeng	2012	6.9	2,200	1,760		1200		C	O
5	So Hang	Canal	Takeo	Borey Chulsar	Borey Chulsar	2012	8.7	1,960	1,568				C	O
6	Rokar Chhuk I	Canal	Takeo	Prey Kabas	Char and Snor	2013	2.3	521	417				O	Not yet started
7	Banteay Thleay	Canal	Takeo	Koh Andet	Various	2012 and 2013	Supplementary Investment Fund (SIF – Cost-sharing between FWUC and CAVAC)							
8	Plov Touk	Canal	Takeo	Kirivong	Various	2012 and 2013	Supplementary Investment Fund (SIF – Cost-sharing between FWUC and CAVAC)							
9	Prey Tonle	Canal	Kampot	Banteay Meas	Prey Tonle	2010	3.2	1,000	800		268	268	C	C
10	O'Kak	Canal	Kampot	Banteay Meas	Tuk Meas Khang Lech	2011	2.9	1,000	800	250	250	250	C	C
11	Sbov Andeth	Canal	Kampot	Banteay Meas	Sdach Kong Khang Cheung	2011	6.8	2,000	1,600	1,000	1,000	1,000	C	C
12	Thnoat	Canal	Kampot	Banteay Meas	Thnoat Chong Srang	2011	6.8	3,500	2,800		1,000	1,000	C	C
13	Spean Touch	Canal	Kampot	Kampong Trach	Prey Kreus	2012	6.6	1,250	1,000		706	706	C	C
14	Prey Leu	Canal	Kampot	Banteay Meas	Banteay Meas Khang Lech	2012	3.9	950	760	200	200	200	C	C
15	Hay Saun	Canal	Kampot	Banteay Meas	Sdach Kong Khang	2013	3.8	457	366				Not yet started	Not yet started

Scheme			Location			Year	Length	Scheme Potential		Irrigated Area Present (Ha)			FWUC	
No	Name	Type	Province	District	Commune	Year of Constr.	Main Canal Length (Km)	Command Area (Ha)	Households (No)	Dry Season Irrigated	Early Wet Season Irrigated	Recession with Suppl. Irrigation	Establishment Compl./ Ongoing	Training Compl./ Ongoing
						1	2	3	4	5	6	7	8	9
					Cheung									
16	Chamlong Chrey	Pump	Kampot	Banteay Meas	Sdach Kong Khang Lech	2013	1.7	350	280				Not yet started	Not yet started
17	Reservoir 77	Reservoir	Kampot	Chum Kiri	Srae Cheng	2013	1.5	1,000	800				Not yet started	Not yet started
18	Thnoat Chum	Canal	Kampong Thom	Baray	Thnoat Chum	2011	7.3	3,270	2,616		542	542	C	C
19	Angko	Canal	Kampong Thom	Kampong Svay	Kampong Kor	2011	3.5	1,670	1,336		247	247	C	C
20	6 January SC3	Canal	Kampong Thom	Sun Tuk	Tang Krasang	2013	4.6	266	213				Not yet started	Not yet started
21	6 January SC2	Canal	Kampong Thom	Sun Tuk	Tang Krasang	2013	4.1	691	553				Not yet started	Not yet started
22	6 January SC1	Canal	Kampong Thom	Sun Tuk	Tang Krasang	2013	1.7	230	184				Not yet started	Not yet started
	Totals							29,388	23,510	1,450	6,915	6,485		

Notes:

Column 3: Potential areas based on available water resources and complete scheme development (distribution systems) as per feasibility studies.

Column 4: Potential number of households having access to irrigated water as per feasibility studies.

Columns 5, 6 and 7: Area irrigated at present. Full development over time depends on construction of secondary / tertiary canal systems (by CAVAC, FWUCs and private water sellers) and farmers' adaptation to crop intensification.

ANNEX 4: EXPENDITURE AGAINST WORK PLAN

Component breakdown		Description	Activities 2013	Budget (US\$)	Total Expenditure to Date	Total Commitment to Date	% Committed against 2013 AWP Budget
Component 1: Agribusiness				\$1,530,000	\$325,331	\$1,297,082	85%
1.1	Critical constraints to strategic value chains identified and developed for business action.	Completed		0	0		
1.2	Agribusiness partnerships supported to innovatively address constraints.	Improve input markets in rice and vegetables; tools in rice; improve availability of efficient and affordable pump units. All companies will be encouraged to add extension activities. CAVAC to continue conducting activities to create and improve linkages among all actors in the markets, and to encourage companies to improve communication within their networks.	<u>Rice seed market</u>	830,000	229,118		
			Support to medium seed producers				
			Support to seed associations				
			Support to small seed producers				
1.3	Enhanced farmer services embedded within agribusiness practices.		<u>Inputs</u>				
			Support to input suppliers				
			Joint training with PDAs				
			Support to more companies if possible				
			Support to fertiliser forum				
			<u>Pumps</u>				
			Support to commercial partners (producers and retailers)				
			Collaboration with MOWRAM				
			<u>Media</u>				
			Support to a media company				

Component breakdown		Description	Activities 2013	Budget (US\$)	Total Expenditure to Date	Total Commitment to Date	% Committed against 2013 AWP Budget
			Support to one / two more media companies				
			Support to one / two media research companies				
			<u>Rice export promotion</u>				
			Support to an exporter (contract farming)				
			Support to FCRMA				
			Support to more companies if possible				
			<u>Vegetables</u>				
			Support to vegetable seed companies				
1.4	Improved availability and communication of market information between value chain stakeholders		Support to more companies if possible				
			<u>Extension</u>				
			Model Farmer Training				
			Support to call centres				
			Support to CARDI for its website improvement				
			Support to PDAs' Help Desks				
			Support to Private Companies' Help Desks				
			Linking events				

Component breakdown		Description	Activities 2013	Budget (US\$)	Total Expenditure to Date	Total Commitment to Date	% Committed against 2013 AWP Budget
1.5	Participatory planning and construction of key infrastructure to address value chain bottlenecks.	On hold until good opportunities have been found.		0	0		
1.6	Government-led rice policy activities	Activities led by the three PDAs		450,000	96,213		
		Activities led by the GDA		250,000			
Component 2: Irrigation and Water Management				\$5,498,800	\$1,554,753	\$4,427,293	81%
2.1	Improved capacity of MOWRAM and PDWRAM to participate in designing, developing, operating, and maintaining irrigation schemes.	Intense collaboration with MOWRAM and PDWRAMs in the construction of schemes and outsourcing in the detailed design of another group of schemes. Involvement in the water availability studies if needed.	Extensive collaboration and subcontracting with all three PDWRAMs including construction supervision. Support to PDWRAMs in training as per chapter 3.2.	118,800	42,171		
			PDWRAMs' survey and design of 2014 schemes				
2.2	Improved capacity of FWUCs to efficiently and effectively operate and maintain their irrigation systems.	Based on the position paper on ownership, CAVAC and PDWRAMs will support FWUCs and other players to improve likelihood of sustainability.	FWUCs establishment and training	280,000	70,045		
			FWUC office construction	110,000			
			Supplementary Investment Fund	100,000			
2.3	Selected irrigation schemes rehabilitated and transferred to effective FWUCs.	Depending on the decision of the NSC in late 2012, CAVAC will tender schemes and commence construction in 2013. On top of that, one or two FWUCs will receive co-funding for improvements.	Additional work on 2011 and 2012 canals	1,290,000	1,442,537		
			Construction of new schemes*	3,600,000			
			Water safety				

Component breakdown		Description	Activities 2013	Budget (US\$)	Total Expenditure to Date	Total Commitment to Date	% Committed against 2013 AWP Budget
2.4	Improved models of water management adopted in rain-fed areas.		Lessons from the research will be incorporated in CAVAC activities.	0	0		
2.5	Increase use of hydrological data in the planning and management of irrigation systems.	One water availability study was finalised in 2011. A new one could be undertaken if requested by PDWRAMs.		0	0		
Component 3: Research and Extension				\$100,000	\$5,400	\$53,933	54%
3.1	Priority research and extension activities address constraints in selected value chains.	Four large research studies are no longer under CAVAC's scope of work		0	0		
		Small additional research may be commissioned as required.		100,000	5,400		
3.2	Enhanced capacity of formal and informal extension providers to transfer improved technologies and information to farmers.	Included in 1.2		0	0		
3.3	Partnership program linking researchers, extensionists, farmers and agribusinesses developed and implemented.	Included in 1.2		0	0		
3.4	Budgetary support to CARDI.	No longer under CAVAC's scope of work		0	0		
Component 4: Business Enabling Environment				\$290,000	\$1,016,506	\$1,090,031	376%

Component breakdown		Description	Activities 2013	Budget (US\$)	Total Expenditure to Date	Total Commitment to Date	% Committed against 2013 AWP Budget
4.1	Improved research and understanding of the enabling environment surrounding key value chains.	CAVAC will assess impacts of a number of new regulations for agriculture and specifically CAVAC activities.	Issue studies to be undertaken and where possible activities will be initiated.	10,000	0		
4.2	Increased opportunity for public private dialogue around key enabling environment issues.	Activities with TAF where provincial government-led dialogue is initiated	Continued activities from 2012 Follow up activities if first round successful	180,000	0		
4.3	Strengthened industry representative organisations.	Activities may emerge from other activities.		0	0		
4.4	Increased use of Public Private Partnership investment model.	Integrated with 2.2 and 2.3.		0	0		
4.5	Policy Support Funding Facility	This facility will support activities initiated by MAFF / MOWRAM / AusAID with approval from the Executive Group of the NSC.	RGC initiatives supported	100,000	1,016,506		
Cross Component Activities				\$425,000	\$78,695	\$243,612	57%
5.1 / 5.2	Gender and Disability*	The gender and disability strategies will guide activities. Both will be mainstreamed in all activities. On top of this one or two dedicated interventions are likely.	Gender and disability are mainstreamed in all activities.	0	0		
5.3	Environment and Disaster Risk Reduction**	Revised Environmental Strategy will be implemented in 2012 and continued in 2013.	All interventions will have been screened for environmental impacts. Management plans prepared and activities implemented and monitored.	0	0		

Component breakdown		Description	Activities 2013	Budget (US\$)	Total Expenditure to Date	Total Commitment to Date	% Committed against 2013 AWP Budget
5.4	M&E	M&E will be an integral part of the work activities of CAVAC. All experts will be involved.	All interventions will have impact logics and monitoring plans.	150,000	35,058		
			Cross cutting issues will be integrated.				
5.5	Training / seminars / capacity development support	CAVAC will prepare a training needs assessment and training plan for its staff and government counterparts.	CAVAC and RGC staff better able to implement activities.	250,000	43,280		
5.6	Equipment	Support to MAFF, MOWRAM, PDA and PDWRAM for office equipment and communication	RGC partners to be better able to execute their CAVAC related activities	25,000	357		
Total				\$7,843,800	\$2,980,685	\$7,111,951	91%

*Expenditures on gender and disability work are included in agribusiness expenditures.

**Expenditures on environmental work are included in irrigation expenditures.