

Cambodia Agricultural Value Chain Program (CAVAC)

Six Monthly Progress Report (Report Number 2)



January 2011

ABBREVIATIONS AND ACRONYMS

ACIAR	Australian Centre for International Research
AUD	Australian Dollar
AusAID	Australian Agency for International Development
AWP	Annual Work Plan
BEE	Business Enabling Environment
CARDI	Cambodia Agricultural Research and Development Institute
CAVAC	Cambodia Agricultural Value Chain Program
CISIS	Cambodian Information System of Irrigation Schemes
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAE	Department of Agricultural Extension
DPO	Disabled Peoples' Organisation
DSS	Decision Support System
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
FWUC	Farmer Water User Committees
GDA	The General Directorate of Agriculture
IEA	Initial Environmental Assessments
IRRI	International Rice Research Institute
MAFF	Ministry of Agriculture, Forestry and Fisheries
MOU	Memorandum of Understanding
MOWRAM	Ministry of Water Resources and Meteorology
M&E	Monitoring and Evaluation
NSC	National Steering Committee
NSW I&I	New South Wales Industry and Investment
OC	Operational Contractor
PDA	Provincial Department of Agriculture
PDWRAM	Provincial Departments of Water Resources and Meteorology

PPSMIA	Phnom Penh Small and Medium Industries Association
RGC	Royal Government of Cambodia
RUA	Royal University of GRICULTURE
SIF	Supplementary Investment Fund
USD	United States Dollar
WASMB	Women's Association of Small Business

FOREWORD

This report covers the period from 1 July until 31 December 2010 and has been developed in collaboration with the AusAID appointed Team Leader, Australia Centre for International Agricultural Research (ACIAR) and Cardno Emerging Markets (Australia) Pty Ltd. The report is intended to provide AusAID and the National Steering Committee with an update on key achievements and issues during this period, and as such reports directly against the first Annual Work Plan.

TABLE OF CONTENTS

1	Details of Progress	1
1.1	Overview and Highlights	1
1.2	Component 1: Agribusiness Development	2
1.3	Component 2: Water Management	7
1.4	Component 3: Research and Extension.....	12
1.5	Component 4: Business Enabling Environment	15
1.6	Cross cutting issues.....	16
2	Emerging Issues and Risks	19
2.1	Component 1: Agribusiness Development	19
2.2	Component 2: Water Management	20
2.3	Component 3: Research and Extension.....	20
2.4	Component 4: Business Enabling Environment	20
3	Program Management	21
3.1	Staffing Update.....	21
3.2	Procurement Update.....	23
3.3	Training Update	24
3.4	List of Reports	25
4	Expenditure Against Budget (AWP 2010)	26

LIST OF FIGURES

Figure 1: Source of vegetables in Phnom Penh	4
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LIST OF TABLES

Table 1: Current Status of Agribusiness Interventions	5
Table 2: Agribusiness Development – Challenges	19
Table 3: Current Recruitment Status	21
Table 4: Summary of Training Provided	24
Table 5: Summary of Training attended by the CAVAC Team	24
Table 6: List of Reports	25
Table 7: Expenditure against Budget (AWP 2010)	26

ANNEXES

Annex 1: Table with Activities and Results against Workplan
Annex 2: Report of Expenditure against Workplan
Annex 3: CAVAC Contribution against SAW Logframe
Annex 4: Irrigation Canals – Roles and Responsibilities Discussions

1 DETAILS OF PROGRESS

Over the last six months the program has made considerable progress. The employment of the majority of the team has ensured that CAVAC has achieved much of what was agreed in the first Annual Work Plan 2010 (a six month work plan).

1.1 Overview and Highlights

Goal: reduced rural poverty in targeted provinces.

Objective: accelerated growth in the value of agricultural production and smallholder income in the rice based farming systems of targeted provinces.

Key management achievements include:

- Provincial Coordination Committees have been appointed and CAVAC can now open offices and hold provincial meetings;
- Annual Work Plan consultations have been conducted and AWP 2011 has been submitted;
- Recruitment is almost finalised and staff have received initial training; and
- CAVAC has committed most of the AWP 2010 budget. A few large items like the Policy Support Funding Facility and one water availability study has not materialised and will lower the overall actual spending. The normal time delay between committing and actually paying will result in a delayed actual budget spending.

Major achievements across the components include:

Component 1: Agribusiness Development

Three value chain analyses and an input market mapping study have been completed. Three agreements were finalised with agribusinesses in 2010 with other discussion in progress. Work with the physical market places has been changed to a Public Dialogue Intervention (see below).

Component 2: Water Management

CAVAC, the Ministry of Water Resources and Meteorology (MOWRAM) and the Provincial Departments of Water Resources and Meteorology (PDWRAMs) have prepared 11 irrigation schemes for potential investment; this is double the original plan of four to six schemes. One water availability study has been tendered and evaluated, and will begin in January 2011. The tender for the second study has been rescheduled until early 2011. A pump study has been undertaken and findings are detailed below.

Component 3: Research and Extension

Research activities are progressing well, with three large studies being undertaken. A fourth proposal is ready for National Steering Committee (NSC) endorsement. For extension, an analysis of existing materials have been finalised, model farmer training has been piloted, and embedded trainings with private providers has been supported. A media assessment has been postponed to January 2011.

Component 4: Business Enabling Environment

A Business Enabling Environment Manager has been proposed and a CV forwarded to counterparts and AusAID in November 2010.

A workshop on the rice export policy was conducted with MAFF and MOWRAM to investigate how CAVAC could best support the rice policy. The General Directorate of Agriculture (GDA), CARDI, and two Provincial Departments of Agriculture (PDAs) have submitted proposals to be supported under the policy support funding facility. Under this facility, CAVAC has supported MOWRAM with the inventory of irrigation schemes (CSISIS).

Cross Cutting issues

Environmental assessments for irrigation schemes have been completed and a short term consultant has recently assessed and recommended improvements for CAVAC's systems. A gender specialist is currently considering specific gender issues relevant to CAVAC and a disability study is also being currently undertaken. In January 2011, a consultant will work with the program to undertake a poverty assessment.

Below is a more detailed summary of achievements over the period.

1.2 Component 1: Agribusiness Development

Intermediate Outcome: Agribusiness contributes to the strengthening of selected value chains and equitably shares benefits.

The initial stages in any market development project are related to research. In the first three months of the period, this component was involved with input market mapping, value chain selection and value chain analysis of three selected value chains.

Prior to the value chain analysis, CAVAC had thought that cashew nuts might have been an appropriate commodity to focus on in Kampong Thom. However, within the cashew market, at the time of research (August 2010), there was a lack of investment in the sector due to an over reliance on the Vietnamese market. Investments required to develop / access additional markets were seen as high risk and the size of investment required would be significant

Significant opportunities were identified in the cassava and vegetable sectors. Both sectors show promising growth rates and both have significant growth potential in the domestic market while at the same time there is an increasing amount of private investment in these sectors. With both cassava and vegetables requiring significant amounts of labour, the opportunity for the landless poor to find employment will be enhanced.

The first partnerships have been developed and the implementation of the first interventions for this component is gaining momentum. Some interventions are specific to a sector, such as the registration of a rice seed company, while others will have cross sectoral impacts such as the availability of better quality fertiliser. Currently, the focus is on improvement of the quality of inputs available in the market and providing producers with more and better information on using their inputs. The objective is then to improve yields, area under production, number of farmers involved and quality.

Progress against Work Plan

Critical Constraints to Strategic Value Chains Identified and Developed for Business Action

In the currently selected value chains (rice, vegetables and cassava), the key constraints are in the supply of, and availability of, quality inputs to these sectors. Markets and market opportunities are available while there is still scope to improve yield and the quality of production in rice, vegetables and cassava.

Producers currently cannot rely on the availability of appropriate inputs and on consistent quality of inputs. In the value chain analyses conducted in July – August 2010, less than optimal availability and inappropriate use of inputs was identified as the key constraint in reaching production potential.

For all commodities, the market potential is there to be accessed given that the quality of the product is sufficient. For rice, the development of the Rice Export Strategy of the Royal Government of Cambodia (RGC) clearly indicates that there is a strong belief in the potential for Cambodia to become a significant rice exporter. In recent months Cambodia has been approached by some significant rice importing countries, such as China and the Philippines, to assess the potential for rice from Cambodia.

For vegetables, all the evidence suggests that consumers prefer Cambodian vegetables and that imports only happen to satisfy unmet demand for vegetables.

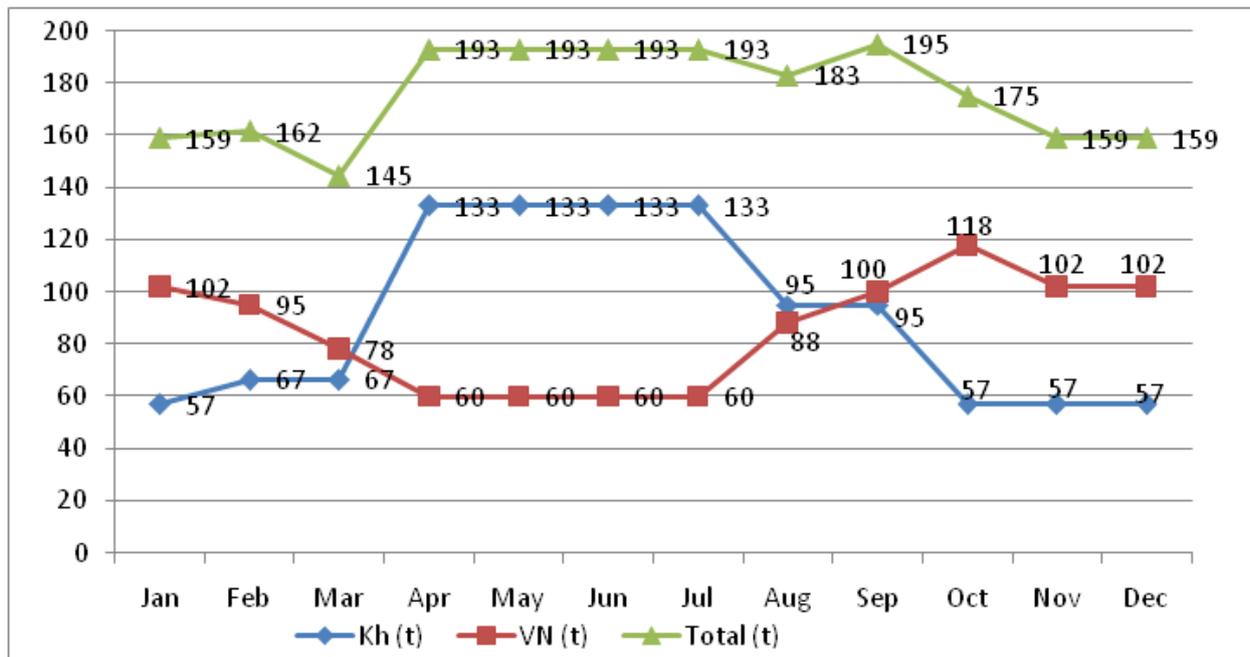
Figure 1: Source of vegetables in Phnom Penh

Figure 1 demonstrates that imports from Vietnam only increase when production in Cambodia decreases. Furthermore, information from traders and consumers indicates that there is a general preference for Cambodian vegetables but that production and supply is inconsistent. In addition, output traders identify the lack of sufficient Cambodian produce as a key constraint. They identify that locally there is a significant preference for Cambodian produce but that the supply is inconsistent. A variety of constraints are involved in causing the decline of production from August onwards.

CAVAC aims to improve the availability of inputs as well as enhancing knowledge on appropriate use of the inputs. This is expected to increase yields by 10% to 20%. Additionally CAVAC, at a later stage, will try to improve the provision of irrigation for vegetables thereby extending the growing period and improving the consistency of vegetable production.

For cassava (assuming the NSC approves the AWP), the focus will be on improving the quality of cuttings and potentially the availability and appropriate use of other inputs. This reconciles all three strategies by focusing initially on the improved supply and use of agricultural inputs.

Currently CAVAC is doing several research activities within the Agribusiness Development component which are aimed at establishing some of the other key constraints in improving the ability of the private sector to provide services to farmers for these research activities.

These include:

- CAVAC's own strategy to respond to the recent RGC Rice Export Strategy. The objective is to find how best CAVAC could contribute towards this strategy;
- Research on how village level rice seed production and trading is organised and whether there is an opportunity for CAVAC to have an intervention with small rice seed producers;
- An assessment of physical market infrastructure and the management of this infrastructure and the markets within;
- A comparison of the local availability of pesticides and the locally predominant pests;
- A study on how the water pump sector (provision of irrigation) operates, both looking at the technical efficiency of the pumps and the business model in which they are disseminated to farmers; and
- A study to understand how the broadcast media market works, in particular in regard to the agricultural programming and how the advertisement market responds to this.

The objective of these research activities is to find a leverage point for CAVAC to intervene or to provide sufficient justification for CAVAC not to enter the particular sector or sub-sector.

Agribusiness partnerships supported to innovatively address constraints

CAVAC is developing working relationships with businesses which have identified their key constraints to be aligned with the key constraints that CAVAC has identified in its value chain studies in December 2010.

Table 1: Current Status of Agribusiness Interventions

Business name	Stage of agreement	Sector	Business Activity	Joint Activity
Mr. Vanna	Memorandum of Understanding (MOU) signed	Rice	Informal rice seed producer	Formalisation of his rice seed production company
SPC	MOU signed	Primarily rice	Vietnamese pesticide producer and sole agent of Monsanto.	Specific research on the pesticide market in CAVAC provinces Training of pesticide retailers to provide more information on use with sale of the product
Bayer Crop Science	Potential partner Awaiting registration of products with MAFF			

Business name	Stage of agreement	Sector	Business Activity	Joint Activity
Yi-Tak	MOU developed. Waiting for comments from Yi-Tak	Rice and other	Fertiliser distributor	Quality Assurance System Retailer training
Iso-Terra	Negotiations	Vegetables	Organic pesticides and fertiliser.	
East-West Seeds	Negotiations	Vegetables	Vegetable seeds	
Tiger Media	Negotiations	Print media	Agricultural magazine	

Enhanced farmer services embedded within agribusiness practices

The Memorandum of Understanding (MOU), as signed with SPC, is designed to support retailer training to increase the ability of retailers to provide information / extension with the product sold. SPC sees this as a key strategy to improve customer loyalty and enhance the efficiency of the product sold. SPC expects that this will increase its reputation with both retailers and farmers. This will then strengthen their wider distribution network and assist the SPC brand to be recognised as a quality brand on the Cambodian market.

Additionally negotiations with Yi-Tak are around similar types of interventions, focusing on fertiliser. A major constraint for Yi-Tak is the sales of low quality fertiliser in similar packaging to that of Yi-Tak. This has a significant detrimental impact on the reputation of its product and building brand loyalty by improving the distribution network is a key strategy for Yi-Tak to increase its market share.

Projection of Potential Impact

An important aspect of determining areas of work is to consider impact. Below is a simple projection of the impact of supporting rice seed production formalisation, useful in demonstrating the process of impact projection.

- Current production is 250 tons / ha
- Objective 1500 tons of rice seed (increase 1250 tons / ha)
- Advised application is 40 kg / ha
- $1,250,000 / 40 = 31,250$ ha extra land under quality rice seed

Assumption 33% will be used for dry season cultivation and 67% for wet season cultivation

Step 1) $31,250 / 3 = 10,415$ ha dry season rice
= 10,415 ha dry season rice
= 20,835 ha wet season rice

Step 2) Dry season yields = 2.5 tons / ha
Wet season yields = 1.5 tons / ha

Step 3) Expected yield improvement
10% yield increase (IRRI)

Wet Season increase from: 1.5 to 1.7 tons / ha
Total 4,700 tons

Dry Season increase from: 2.5 to 2.9 tons / ha
Total 3,900 tons

Total: 8,600 tons additional production of paddy

42% of families have less than 1 ha of land

Assumption average land size is 1.5 ha

$31,250 / 1.5 = 21,800$ farmers

Improved availability and communication of market information between value chain stakeholders

It is expected that the retailer training provided to pesticide retailers will increase the information on the application and appropriate use of pesticides.

Whether or not the negotiations with Tiger Media on publishing an agricultural based magazine are successful, it is foreseen that there will be a magazine and other media interventions specifically aimed at improving the communication of market information between stakeholders

Participatory planning and construction of key infrastructure to address value chain bottlenecks

The Agribusiness Development component does not foresee any significant infrastructure development at this stage. The ongoing Asia Foundation study into the quality and management of physical market places may result in some work on physical market places.

1.3 Component 2: Water Management***Intermediate Outcome: Sustainable increase in the area and yield of irrigated crops.***

Two canals were rehabilitated during the previous reporting period, one in Takeo at Krapum Chuk, and one in Kampot at Trapang Chak. With reliable sources of water now available, farmers have commenced using the canals for both early wet season paddy and, most recently, for recession paddy following annual flooding. CAVAC has started to work with the communities to establish Farmer Water User Committees (FWUCs) to take responsibility for on-going operation and maintenance.

Eleven canals were identified as potential canals for the 2011 canal rehabilitation program and feasibility studies were undertaken. Feasibility studies were conducted for all schemes and the PDWRAMs have started to conduct detailed designs. A final approval which schemes are to be constructed is awaiting an NSC decision. These canals will help farmers improve yields, and will provide reliable water for approximately 15,000ha for dry season paddy production. CAVAC has started discussions with communities on the establishment of organisational structures who will be responsible for on-going canal management after construction is completed.

CAVAC has commenced a water availability study and decision support system in a target area in Takeo Province. It will assist the future selection and screening of candidate irrigation systems for CAVAC funding. The study will be completed in early 2011.

Progress against Work Plan

Improved Capacity of MOWRAM and PDWRAM to Participatively Design, Develop, Operate and Maintain Irrigation Schemes

CAVAC is in the early stages of planning and implementation for government agency capacity building. Meetings have been held with MOWRAM, the three Provincial PDWRAMs and the MOWRAM Technical Services Centre. Agreement has been reached on specific capacity building needs for the PDWRAMs comprising training in the following areas:

- Water and catchment management;
- Water distribution management;
- Survey and detailed design;
- Construction supervision; and
- Canal operation and maintenance.

In addition, small equipment needs have been identified and CAVAC has started procurement of survey equipment for the PDWRAMs.

On the job training has been provided while working with the PDWRAMs on the feasibility studies for canal rehabilitation planned for 2011, and during the detailed design for these systems.

Improved Capacity of FWUCs to Efficiently and Effectively Operate and Maintain Their Irrigation Systems

CAVAC has commenced discussions with the communities now using the rehabilitated canals at Krapum Chuk in Takeo, and at Trapang Chak in Kampot. Working through the Commune Councils, each community has submitted proposals for canal management, operation and maintenance support. Working with the PDWRAMs, a program of capacity building will be planned and implemented to ensure that the local organisations have the required skills to ensure that the canals can deliver reliable water supply to farmers.

Developing a community's ownership of its irrigation infrastructure is vital to ensure infrastructure sustainability. CAVAC has commenced the development of its *Ownership Strategy*, which, through literature review, consultation with experts, research and field visits, will identify the keys to community ownership within the Cambodian cultural and political environment. The strategy will inform our approach to Farmer Water User Community (FWUC) establishment and support.

CAVAC has commenced its work on the Supplementary Investment Fund (SIF). This fund will be available to communities to undertake small scale infrastructure investments up to a maximum of \$50,000 on a cost sharing basis. CAVAC's Concept Paper outlines: the purpose of the SIF; identifies the organisations who would be potentially interested in applying for funds early in 2011; identifies a range of infrastructure activities that could be funded; describes the selection criteria; and, recommends that CAVAC and the PDWRAMs work together to identify opportunities for the initial round of funding.

Selected systems rehabilitated and transferred to effective FWUCs

Working closely with the three PDWRAMs, CAVAC identified an initial list of nine irrigation schemes to be considered for rehabilitation in 2011. Field visits were conducted, including consultations with community members, and the list was finalised. It was agreed that eleven canals would be subject to feasibility studies.

Feasibility studies were undertaken for all eleven schemes between September and November 2010. Each study assessed feasibility in a number of areas: technical and engineering, agricultural, social, economic, and organisational.

A separate consultancy contract was awarded to undertake the Environmental Impact Assessment and preparation of the Environmental Management Plans, in accordance with CAVAC's Environmental Management Manual. The consultancy identified potential environmental impacts and recommended mitigation measures to be addressed in design and during the construction phase. It also recommended an on-going monitoring program post-construction.

All schemes were found to be feasible but some carried higher unit costs (\$ / ha of command area) and some carry higher risk on organisational aspects. Overall, CAVAC considered eight schemes suitable for construction, taking into account of value for money and organisational risk.

Accordingly, CAVAC contracted the PDWRAMs to undertake topographical surveys and detailed designs for eight schemes. CAVAC technical staff provided support and advice to the PDWRAMs during this period.

In anticipation of tendering for the canal rehabilitation packages early in 2011, CAVAC has prepared tender and contract documents. Documentation will be based on the same arrangements used for the canals rehabilitated during 2010.

Improved models of water management adopted in rain fed areas

CAVAC is working with Commonwealth Scientific and Industrial Research Organisation (CSIRO) on the development of a water management project to be implemented during 2011.

Following the preparation of the Terms of Reference, tenders were called. Four tenders were received by the deadline and were assessed. The Halcrow Group was the selected firm for the consultancy and the work will commence by mid January 2011.

Case Study

Background: CAVAC rehabilitated the canal at Trapang Chak in Takeo province during 2010. The community at Prey Tonle Commune has now started to use the canal, and recognises that the canal brings reliable water supply for both wet and dry season paddy production. The community is gradually changing their cropping patterns to take advantage of this opportunity.

Around two kilometres away from the village main road lives a couple with two kids. Mrs Keuy Chanthy, in her early thirties, provided some information on the impact of the canal rehabilitation on her family. She and her family moved to the village in 2002 after noticing the low price of land and that the area was suitable to raise livestock. Just like other rural people, with her husband, she tries to get as much income as possible to support the family. Her sources of income include tailoring, raising chickens and pigs, planting vegetables, cultivating rice and catching fish. The family's first investment in rice was buying a three hectare field that contained bushes and small hills here and there, as plain land was too expensive for them. Initially the family grew only one tonne of paddy per hectare but over time as they became more experienced the yield gradually increased to two tonnes per hectare. After six years, she managed to afford a power tiller to prepare land and raised her cow for cow manure and selling meat. In total, the income from rice cultivation at that time was only 20% of the general income.

After hearing that the non-working canal would be rehabilitated by CAVAC and that they can get access to water, the family invested in a diesel pumping machine. Having a reliable source of water, the family decided to plant only one hectare of wet season rice variety and two hectares of dry season rice variety. At the time of interview, six months after the canal rehabilitation, Mrs Keuy Chanthy had harvested the dry season rice variety and was waiting until the wet session to harvest the traditional variety rice on another hectare. Mrs Keuy Chanthy also plans to start broadcasting dry season rice again on her two hectares of land. It is evident that she has changed her practices with access to a reliable water supply.

Clearly, canal rehabilitation has had a positive impact on the family's income. With yield from the dry season variety of 4.9 tonnes per hectare (which is a little higher than her neighbours) she happily made a prediction for us that, being able to double her production, income from rice will grow to 50% of her income given that income from existing sources is stable.

Planting a dry season variety consumes lots of her, and especially her husband's, labour as it needs much more care than wet season rice varieties. Compared to wet season rice, dry season paddy requires much more inputs

in terms of amount and types, including fertiliser, pesticides, herbicides and water (pumping cost). Most of her chemical inputs are bought from Vietnamese retailers along the border where she is satisfied and confident with price, and effective knowledge in usage that the retailers provide. As her field is far from the canal, she was a bit annoyed to have to pump water three times to get water in the field, though with high investment and labour, she still can get a profit of around 125 USD (including labour). She is already considering her options for next year, whether the family will continue planting wet season variety or not will largely depend on price of fertiliser and pesticide. If the price keeps increasing, she will have to spare some plot for dry season variety.

Enjoying the additional income, Mrs Keuy Chanthy gives more money for her children's education. With contribution from additional income, she also managed to rent a bulldozer to level half of her rice field, the cost of which, in general, largely restricts for farmers from levelling their field. When describing her future plan, with a big smile and hope on her face, she said if her current income is stable, she would gradually have her field levelled until all her three hectares are well levelled, then she would repair her house, build a toilet (which she currently doesn't have), and then buy a latest model motor. Mrs Keuy Chanthy was assured that without additional income from dry season rice, she can still achieve her dream but she would have to wait around seven years to realise it. However, she has estimated that with current income, she may have to wait only around three to four years.

CAVAC is currently assisting the formation and operation of a Farmer Water User Community (FWUC), who will be responsible for managing the operation and maintenance of the irrigation. Understanding the importance of maintenance and sustainability, Mrs Keuy Chanthy is willing to pay a fee of 100kg of rice per year. However, she insisted the FWUC be transparent by periodically showing fee payers concrete evidence such as financial certificates to show the money exists and is kept in a safe place. She also advised that, to be effective, the FWUC also has to have good and strict systems of control to take care of the canal.

Increase use of hydrological data in the planning and management of irrigation systems

The availability of water for expansion of irrigation is a key aspect when considering the feasibility of proposals. In the southern provinces of Takeo and Kampot, there is a general view that water from the Mekong system and the major canals is sufficient to provide reliable supply for irrigation development. In planning for its program of canal rehabilitation, CAVAC needs to understand if this is true, or if, as the land under dry season irrigation increases, water availability will become a constraint.

CAVAC prepared the Terms of Reference for a consultancy study of water availability in the floodplains of Takeo. The objective is to identify if water becomes a constraint as the demand for irrigation increases over time, particularly with the changes taking place in the Mekong system with dam development, and with climate change. In addition, the study will develop a GIS-based Decision Support System to guide future selection of CAVAC interventions, helping the program target areas that offer the most potential.

Following the preparation of the Terms of Reference, tenders were called. Four tenders were received by the deadline and were assessed. The Halcrow Group was the selected firm for the consultancy and the work will commence by mid January 2011.

1.4 Component 3: Research and Extension

Intermediate Outcome: Farmer and service provider capacity increased and key value chain constraints alleviated.

Three large research studies focusing on the vegetable value chain, rice germplasm and rice establishment were able to implement their targeted implementation plans during the first six months. The Cambodian partners took leadership in initiating their experiments and managed them quite well. Data has been collected for wet season rice—analysis and reports will be ready in early 2011. For horticulture, vegetable experiments will be implemented during the dry season for irrigated crops. For others, dry season rice benchmark trials' protocols on water management, weed control, and establishment are jointly agreed to be implemented in 2011.

CARF-7 and CARF-8 projects were monitored and all have been progressing well.

The CARF-9 call for proposals went out the end of November 2010, using two applications; a traditional one used for scientists, and another developed for agribusinesses.

Innovative training modules emphasising grower-demanded technologies were developed, and tested and are ready for up-scaling in 2011. Whole-family-training (i.e. inviting husband and wives to a three-hour focused participatory training) as a training methodology was also tested. Results from testing indicated a high amount of knowledge was imparted and attitude changes were measured. CAVAC will monitor the change in practices for dry season rice (thus, KAP). The Department of Agricultural Extension (DAE) and the Provincial Departments of Agriculture (PDAs) have been involved. Local input suppliers / retailers will also be involved as resource persons for the training in the future. After a stakeholder meeting introducing the tested, innovative training module materials, three NGOs agreed to adopt these materials in their household training.

CAVAC works closely with the Agribusiness Development component, jointly working on many agribusiness companies' interventions.

CAVAC developed a joint interview plan with a company wanting to expand their farmer trainings and demonstrations. Thus with CAVAC's partnership, Heng Pich Chhay, has increased their demonstrations above the jointly agreed number, and grower demonstrations and trainings using CAVAC's model grower training materials will occur during 2011.

Staff training in Vietnam occurred in December 2010. A few other companies are in

negotiations with CAVAC staff whose business cases include grower trainings and / or greater knowledge imparted to growers through booklets / bulletins.

Progress against Work Plan

Priority Research and Extension Activities Address Constraints in Selected Value Chains

The Rice Germplasm Project led by the International Rice Research Institute (IRRI), partnered with the Cambodian Agricultural Research and Development Institute (CARDI) and General Directorate of Agriculture (GDA), screened 77 IRRI lines under flooded and non-flooded conditions. Twelve lines showed 'very promising' to 'high' yield under BOTH these conditions (thus if released, allowing for greater drought resistance). These twelve lines will be tested for quality at IRRI to ensure any line meets market specifications to Cambodia and export. These will go for multi-location trials in 2011.

The Rice Establishment Project led by New South Wales Industry and Investment (NSW I&I), partnered with CARDI, GDA and the Royal University of Agriculture (RUA), conducted a baseline survey in three provinces on rice production practices and extensive socioeconomic analysis. Data has been collected and analysed and the report is due the beginning of 2011. Partners conducted 24 benchmark trials in the three target provinces testing weed control, water management, and establishment techniques. Through monitoring of the trials, all were shown to be very well managed, yielding potentially quality data on the constraints for rice production under rain-fed conditions. Similar trials will be conducted on dry season rice.

An agritool survey is being conducted by an outsourced company which will provide valuable information on agritools for potential interventions by CAVAC, with the final study report due in early 2011.

Land levelling, a much in-demand technology by rice growers with irrigation, is being investigated as a potential intervention. Additionally, a survey on the pesticide market and value chain was outsourced in 2010 with the final study report due in early 2011. Using these two survey results, CAVAC will be empowered to create knowledgeable interventions plus provide the wider service providers with market information.

The Horticulture Value Chain Project, led by NSW I&I, and partnered with CARDI, GDA and RUA, conducted value chain analyses on tomatoes, chillies, and leafy vegetables in three provinces. Results will be published in 2011. As vegetable production is more of a non-wet season entity, during the past six months, preparations were made for the dry season, set to be implemented with the partners in 2011.

Lastly, the On Farm Water Management Project, led by CSIRO and partnered with TCL Cambodia, MOWRAM and CARDI, finished the rigorous process of project review by the Australian Centre for International Agricultural Research (ACIAR) and is now set to begin in early 2011.

These four are the major projects being conducted through Cambodian partners with CAVAC but managed by ACIAR.

The 9th Call for Proposals with the Cambodian Agriculture Research Fund (CARF-9) went out the end of November 2010. However, for agribusinesses, the call was modified to attract more agribusinesses to apply. So far the number of these businesses contacting CAVAC has been impressive.

Enhanced Capacity of Formal and Informal Extension Providers to Transfer Improved Technologies and Information to Farmers

During the past six months, the model farmer household training was developed, tested and ready for up-scaling to all three provinces next year. Nine trainers will be hired (three per province) in 2011. Results from the training methodologies and resources showed remarkable knowledge and attitude changes by the grower households (changes in grower practice will be monitored in 2011). A stakeholder workshop was conducted where over 70 representatives from agribusinesses, NGOs and the RGC came and were presented with the results of the model farmer household training and demonstrated the training resources. Many suggestions were noted and will be incorporated in the trainings conducted in 2011. Three NGOs have expressed interest to buy-in to the whole-family-training methodology and training resources.

Case Study

Mr Sun Sophal had been involved with the Cambodian Department of Agricultural Extension most of his life. He was one of the top RGC extensionists, having had extensive training in rice production and participatory agricultural extension through previous AusAID-funded programs. Near his retirement, he joined a private local fertiliser import company where he now is the key person in this company providing grower training, fertiliser demonstrations, and a radio call-in show for answering agricultural questions. Mr Sophal heard of CAVAC and requested CAVAC to review his training materials to make them better and more informative for the training courses. Through this request, CAVAC was motivated to develop and test with his company, and other partners, innovative training materials using one-page, one-concept caricatures. This was deemed successful.

Since this company has started these trainings having a knowledge-based delivery system to growers as their business case, other companies have joined and CAVAC is able to assist them all in developing good science-based knowledge bases where they can provide grower training, booklets, pamphlets, etc. Knowledgeable growers expand their use of fertilisers and so companies adopting this business case are rewarded. CAVAC is measuring this incentive to allow crowding in for other companies to follow suit.

Partnership Program Linking Researchers, Extensionists, Farmers and Agribusiness Developed and Implemented

Working closely with the Agribusiness Development component, the research and extension component is negotiating with a magazine publisher to publish a magazine which would ensure better linkages among the wider grower service providers and even down to the growers themselves. If successful, this initiative will be fruitful. However, if not, CAVAC will proceed toward other venues for better linkages. In line with the RGC's Rice Export Policy, which entails knowledgeable use of fertilisers and pesticides, CAVAC was able to assist the GDA and CARDI to re-publish materials that had been prepared on such topics, but unable to be freely distributed before the Policy. Thus, agribusinesses and PDAs throughout the country will have access to these materials providing clear science-based recommendations for fertiliser and pesticide use in Khmer for the first time.

Budgetary Support to CARDI

Since the ACIAR work with CAVAC began in February 2009, two instalments of support to CARDI have been provided. However, before the support is given, CARDI has been required to show how it is becoming more sustainable, in terms of both finances and programs. Their progress has been noted and lauded.

1.5 Component 4: Business Enabling Environment

Intermediate Outcome: Improved business enabling environment facilitates the development of selected value chains.

The Business Enabling Environment component of CAVAC has three major elements:

- Supporting the RGC through the Policy Support Funding Facility, promoting mechanisms for public private dialogue and to address issues arising from CAVAC's other activities. CAVAC has created awareness with MAFF and MOWRAM for the use of the Policy Support Funding Facility. This has led to four proposals from MAFF for support of the rice policy. Support will need to be granted by the NSC. If granted, CAVAC's financial support would assist GDA and two PDA's to implement the rice policy.
- CAVAC has also supported MOWRAM in continuing cataloguing all irrigation schemes in Cambodia. MOWRAM had initiated this catalogue exercise with support of AFD and MOWRAM is likely to get financial support in 2011 from other programs. In 2011, MOWRAM has managed and coordinated the inclusion of 300 schemes in the CISIS catalogue.

- CAVAC has initiated public private partnership activities by using the long experience the Asia Foundation has built up in Cambodia. The Asia Foundation has commenced investigating how public private relationship in marketplaces can improve. First results are expected in March 2011.

The Program has first focused on the value chain analyses before doing more in-depth studies on enabling environment issues. Issues to be considered may include:

Unlicensed input sellers: Although by law input sellers, such as fertiliser and pesticide sellers, are required to have licenses before they can sell the products, many of the big wholesalers do not have licences, let alone the small retailers.

License fee transparency: The cost of obtaining a license has a wide range: from 10 – 50 USD per year. For very small input dealers, their profit from selling fertiliser is not much more than the certification fee, which does not encourage them to obtain one.

Trademark or fake products: Poor quality fertiliser is openly sold in the market and called grade two or three, implying they are certified products.

Labelling: Many inputs, especially fertiliser and pesticide, are not labelled in Khmer.

Banned pesticides: More than 50 products not registered by MAFF are being sold in the market.

Seed producer certificate: Although all seed producers in Cambodia are required by law to hold a seed producer certificate, almost none of them have one.

Illegal seed: There is a large amount of seed illegally imported from Vietnam and Thailand without being checked by officers responsible for imported seed and without paying tax. This causes registered seed companies in Cambodia difficulties in terms of price competition.

Management of output markets: During the wet season vegetable sellers are often unable to sell their products as markets are flooded, or they are forced to sell in muddy areas. They also held responsible for their rubbish despite paying a rubbish fee to the market manager.

1.6 Cross cutting issues

Gender

All CAVAC interventions are screened for significant impacts on gender. To complement this active focus, in late 2010, a Gender Specialist was contracted to review CAVAC's overall Gender Strategy and undertake a gender study in the field. CAVAC is currently considering this study, along with recommendation from the Sector Monitoring Group and existing CAVAC work, to update the Gender Strategy.

Disability

CAVAC has the opportunity to improve the quality of life for farmers with disabilities and their families. In late 2010, a Disability Specialist was contracted to develop CAVAC's Strategy for Disability Inclusion in Development Outcomes and Processes. Visible and proactive promotion of disability inclusion by CAVAC staff has the potential to be instrumental in creating more positive attitudes and combating discrimination against persons with disabilities. The CAVAC team is currently considering the results of this study to inform implementation.

Environment

All interventions are screened on environmental impacts and the Australian and Cambodian laws are applied to these assessments. In late 2010, CAVAC contracted an independent consultant to: screen the current and proposed CAVAC work plans, Environmental Strategy and other relevant CAVAC documents; review all internal environmental assessments; and, provide advice on implementing environmental assessment procedures throughout program implementation. This report is being finalised.

All of the eleven canals identified as potential interventions for CAVAC for 2011 were subject to feasibility studies including a full Environmental Impact Assessment and the preparation of an Environmental Management Plan. While there were no significant impacts identified that cannot be managed, the assessment demonstrated important environmental management issues that need to be monitored after the completion of the canals. These mainly relate to the impact that increased agricultural inputs, mainly due to the expansion of dry season cropping, may have on the environment. It emphasizes the importance of managing agricultural inputs.

In addition, the consultancy Terms of Reference for the Water Availability Study and Decision Support System (DSS), to be conducted in early 2011, include identification of key environmental constraints to irrigation development and DSS.

Disaster Risk Reduction

CAVAC is aware of Cambodia's previous disasters in its history and through this awareness ensures that any intervention is sustainable and through such sustainability enabling households and communities to be better prepared for disasters.

The Water Availability Study and the development of the DSS will enable CAVAC to better target irrigation schemes for rehabilitation. Based on a reliable water supply, communities will be less vulnerable to the impact of short terms droughts during the growing season.

Anti-corruption

CAVAC's Anti-Corruption Strategy looks at the policy and regulatory environment, and sets out CAVAC policies designed to address and minimise the risk of corruption related to program activities. The strategy provides clear processes and procedures for CAVAC personnel to promote better activity management. In December 2010, the Strategy was updated to reflect emerging risks within the program. It now includes a Code of Conduct for Financial Arrangements. Where third parties are receiving funds from CAVAC (other than fixed per diems and accommodation costs), the recipient must be provided with this Code of Conduct to be signed by the recipient and kept on CAVAC's file. This will work to ensure transparent use of funds by all CAVAC counterparts.

2 EMERGING ISSUES AND RISKS

The major risk for the program remains how to appropriately support counterparts' contributions to CAVAC. Until this issue is resolved, actively and effectively working with counterparts will be hindered.

2.1 Component 1: Agribusiness Development

Currently the Agribusiness Development component is on schedule. The first partnerships have been established and it is expected that more will follow. If the component is divided into stages, then in the last six months, CAVAC has gone through three stages each with its own challenges.

Table 2: Agribusiness Development – Challenges

Phase	Period	Result	Risk	Mitigation	Challenge / Issue
Research	June – present. While the sector strategies have been completed, CAVAC is still doing research on segments of the various value chains such as rice export, pumps and others.	Strategies	Team too focused on research and not enough on implementation.	Focus on data sufficiency not on data completeness and acknowledge that much research and sector learning will happen during intervention implementation	Getting the team to adopt a new research methodology based on triangulation
Partnership development	September to present	Two signed MOU's. Negotiations ongoing with five others.	CAVAC seeks to assist companies that have identified constraints in line with the constraints identified in the sector strategies. A contribution from the company is required to indicate commitment. CAVAC therefore tries to provide a service to companies rather than companies being recruited to provide a service to CAVAC. This is new and unusual in the Cambodian development context and takes time for companies to understand and accept the approach	To be upfront about what is possible and what is not, and to let the company make the suggestion of what is required rather than CAVAC saying what it has found to be needed.	Agribusiness is reliant on cooperation with partners but needs to respond to the needs of its partners, balancing targets to be reached with responding to company demand is difficult,

Phase	Period	Result	Risk	Mitigation	Challenge / Issue
Intervention Implementation	Started December 2010	Two MOUs signed. Contractor identified to conduct Rice Seed Production Formalisation	Agribusiness team fragmented over several activities	Develop sector expertise within the team to allow for efficiency of implementation	Keeping focus in a very diverse environment with many different activities

2.2 Component 2: Water Management

Organisational issues are the most challenging aspect of CAVAC's work in this sector. Establishing effective community organisations to be responsible for water management and on-going operation and maintenance has been a focus of the feasibility studies conducted for the canals to be built in 2011. CAVAC has held discussions with communities and invited communities to submit their proposals on how this should be done. While this process demonstrated commitment, risk remains.

2.3 Component 3: Research and Extension

The lack of an NSC meeting in December 2010 may hinder the process of hiring trainers in each of the provinces, scheduled the beginning of January 2011. Additionally, without approval from NSC, the implementation of the fourth, and last major research project, On-Farm Water Management, may not be able to start on time this season – a critical season for which to begin.

The slowness in setting up provincial CAVAC offices may hinder any progress for model grower training.

2.4 Component 4: Business Enabling Environment

The lack of a Business Enabling Environment Manager will significantly delay progress in this area over the coming period.

3 PROGRAM MANAGEMENT

3.1 Staffing Update

The following table indicates the current status of recruitment for CAVAC as against the positions identified in the contract between AusAID and CARDNO, and also shows positions filled by ACIAR.

Table 3: Current Recruitment Status

Position	Name	Period of Engagement	Notes
AusAID			
Team Leader	Peter Roggekamp	Full Term of CAVAC	
Cardno			
Administration and Finance			
Operational Contractor General Manager	Roger Bednall	Full Term of CAVAC	
Procurement Manager	Trevor Parris	Full Term of CAVAC	
Procurement Officer	Sok Sokha	Full Term of CAVAC	
Finance Officer	Pann Kim Hoeun	Full Term of CAVAC	
Admin Assistant 1	Chhun C. Tate	Full Term of CAVAC	
Admin Assistant 2	Sok Phally	Full Term of CAVAC	
Provincial Administrative Assistant (x6)			Proposal to re-designate these positions.
Administration / Office Manager		Full Term of CAVAC	Re-designated position – to be recruited
Administration / Finance Officer		Full Term of CAVAC	Re-designated position – to be recruited
Administration / IT Officer		Full Term of CAVAC	Re-designated position – to be recruited
Administration / Translator		Full Term of CAVAC	Re-designated position – to be recruited
Environmental Specialist		Full Term of CAVAC	Re-designated position – to be recruited
Gender Specialist		Full Term of CAVAC	Re-designated position – to be recruited
Provincial Coordinators			
Provincial Team Leader Kampong Thom	Theap Bunthourn	Full Term of CAVAC	
Provincial Team Leader Kampot	Hum Titchetha	Full Term of CAVAC	
Provincial Team Leader Takeo	Keat Pengkun	Full Term of CAVAC	
Agribusiness			
Agribusiness Development Manager	Pieter Ypma	Full Term of CAVAC	
Rice Value Chain Development Specialist	Sovathara Heng	Full Term of CAVAC	

Position	Name	Period of Engagement	Notes
Horticultural Value Chain Development Specialist	Ty Sopheavy	Full Term of CAVAC	
Provincial Agribusiness Coordinator 1	Saint Srey	Full Term of CAVAC	
Provincial Agribusiness Coordinator 2	Ping Sodavy	Full Term of CAVAC	
Provincial Agribusiness Coordinator 3		Full Term of CAVAC	Re-advertised
Irrigation			
Irrigation Water Management Manager	Robert Anscombe	Full Term of CAVAC	
Irrigation and Water Management Specialist	Phai Sok Heng	Full Term of CAVAC	
Irrigation and Water Management Specialist		Full Term of CAVAC	Applications received, short listing in progress
Provincial Irrigation / Water Management Coordinator 1	Khiev Daravy	Full Term of CAVAC	
Provincial Irrigation / Water Management Coordinator 2	Chhim Sophea	Full Term of CAVAC	
Provincial Irrigation / Water Management Coordinator 3	Soeur Sophorn	Full Term of CAVAC	Incumbent on contract until 3 May 2011
BEE			
Business Enabling Environment Specialist		Full Term of CAVAC	Interviews completed. Recommendation made.
M&E			
M&E Manager	Gary Woller	150 days between March 2010 and June 2012	
M&E Officer		Full Term of CAVAC	To be recruited
M&E Assistant 1	Thorn Riguen	Full Term of CAVAC	
M&E Assistant 2		Full Term of CAVAC	To be recruited
ACIAR			
Research and Extension			
Research and Extension Manager	Dr Craig Meisner	Full Term of CAVAC	
Research and Extension Specialist	Kang Sideth	Full Term of CAVAC	
Regional R&E	Sourn Sophoan	Full Term of CAVAC	
Regional R&E	Tin Mola	Full Term of CAVAC	
Regional R&E	Keo Chenda	Full Term of CAVAC	
CARF Coordinator	Nin Charya	Full Term of CAVAC	

In addition to the above, five program drivers and two part time cleaners have been engaged under the reimbursable budget.

There are currently 34 people employed under CAVAC, which includes six people employed under ACIAR, five drivers, and two part time cleaners.

Important vacancies include the BEE manager, and an M&E officer and assistant.

A proposed BEE manager has been selected and nominated, but is awaiting government approval. The M&E positions will be recruited shortly to coincide with the next stage of implementation of the M&E system.

Interviews have been undertaken and recommendations made for the BEE Manager, and the Office Manager (Program Officer). In addition, the re-designation of the six administrative positions awaits government approval.

Approved Positions

There are slight differences between the program staff listed in the MSA, the list in the Cardno contract, and the list in the PDD.

The MSA (agreed by the RGC) nominates one 'irrigation specialist', and the contract with Cardno includes two irrigation specialists. This means Cardno is contracted to recruit one position which does not currently have formal RGC approval. This is currently being addressed with other government staffing approvals.

Re-designation of Positions

In implementation, the CAVAC team has found that the six positions designated as provincial administration could be more usefully deployed in specific areas, and Cardno has sought a contract amendment to re-designate those positions. The proposed new positions are an Office Manager (Program Officer), Finance Officer, IT Officer, Translator, Environmental Specialist, and Gender Specialist.

This request is currently under discussion with MAFF and MOWRAM.

Recruitment Procedures / Approvals

MAFF and MOWRAM have asked that CAVAC forward all CVs to them for comment / veto prior to the appointment of permanent staff.

3.2 Procurement Update

Procurement has been undertaken in accordance with the CAVAC Procurement Manual, and the Commonwealth Procurement Guidelines. Procurement is reported in detail in six monthly procurement reports.

The following specific points for comment have arisen in the course of this reporting period:

- a) Procedures have been established for AusAID approval of all contracts over AUD 100,000, as required in the contract with Cardno.
- b) Discussions have arisen concerning the need for independent certification of progress in relation to claims for payment under infrastructure (irrigation canal) contracts. Further discussions are planned with AusAID's procurement specialist.
- c) CAVAC anticipates that in the first half of 2011 it will let eight contracts for irrigation, as part of the 2011 Work Plan. It is expected that each of these contracts will exceed AUD 100,000, and will therefore require specific AusAID approval. AusAID have been advised of these contracts which are currently at the proposal stage. Approvals for these irrigation canals will be sought from the NSC (as part of the 2011 Work Plan) at the next meeting expected to be held in February 2011.

3.3 Training Update

Table 4: Summary of Training Provided

Name of Training	Date	Target Group	Principal Trainers	Achievements
Model Farmer Training	4 sessions, October, November and December 2010	Model Farmers, 10 households for each session	CAVAC staff	Testing model and methodology
Software (A-ware) Training	December 2010	ARUNA – Local GIS firm	CAVAC staff	

Table 5: Summary of Training attended by the CAVAC Team

Name of Training	Date	Target Group	Principal Trainers	Achievements
Methodology	Various	CAVAC staff	Peter Roggekamp	Staff trained
Value Chain	July 2010	CAVAC staff	Saifuddin Khaled	Staff trained
M&E	August 2010	CAVAC staff	Gary Woller	Staff trained
Environment	December 2010	CAVAC staff	Dirk Lamberts	Staff trained

In addition:

- a) Ty Sopheavy and Sourn Sophoan attended the 2010 Rice Congress in Vietnam in November;
- b) Pieter Ypma and Thorn Riguen attended Monitoring and Evaluation training seminars in Kuala Lumpur in October; and
- c) Dr. Craig Meisner attended the World Soil Science Congress in August (ACIAR sponsored).

3.4 List of Reports

Table 6: List of Reports

Report	Status	Comment
Inception Report, including 2010 Work Plan	Submitted to NSC, June 2010 Approved July 2010	
Six Monthly Procurement Report	Submitted July 2010	
Six Monthly Progress Report	Submitted July 2010	
Monthly exception reports, May to December 2010	Submitted monthly	
2011 Work Plan	Draft prepared November 2010	To be submitted to the NSC for approval, Feb 2011
Activity Completion Report Krapum Chuke, Takeo	In Draft	To be submitted January 2011
Activity Completion Report Trapeang Chak, Kampot	In Draft	To be submitted January 2011
Six Monthly Procurement Report	In Draft	To be submitted January 2011
Six Monthly Progress Report January 2011	Current Submission	This Report

4 EXPENDITURE AGAINST BUDGET (AWP 2010)

Below is a summary of expenditure against the work plan in 2010. Further details can be found in Annex 2.

Table 7: Expenditure against Budget (AWP 2010)

Description	AWP2010 Budget (USD)	Expenditure Jul – Dec 10 (USD)	Total expenditure to Dec 10 (USD)	Total commitments to Dec 10 (USD)	Percentage committed against AWP 2010 budget
C1 Agribusiness Development	\$58,000	\$12,750	\$12,750	\$20,435	35%
C2 Water Management	\$424,000	\$102,293	\$237,462	\$460,386	109%
C3 Research and Extension	\$1,258,856	\$225,087	\$887,949	\$887,949	71%
C4 BEE	\$15,000	\$4,195	\$4,105	\$9,184	61%
Cross Component Activities	\$326,500	\$7,740	\$7,740	\$74,019	23% ¹
Facility and Grant Funds	\$238,500	\$126,980	\$126,980	\$157,680	66%
Total	\$2,320,856	\$479,045	\$1,276,986	\$1,609,652	69%

¹ The significant under spend on this line item can be attributed to the delay in the undertaking the Fiduciary and Procurement Risk Assessments budgeted at USD200 000.

ANNEX 1: TABLE WITH ACTIVITIES AND RESULTS AGAINST WORKPLAN

Component and Activity	Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements	
Component 1: Agribusiness					
1.1	Critical constraints to strategic value chains identified and developed for business action.	Conduct a value chain selection study, 2 - 4 value chain analyses, and input market assessments.	Selection of 2 to 4 value chains, mapping and constraint analyses undertaken for 2 to 4 value chains, and a mapping and constraint analyses for input markets underway.	3 value chains analysed (vegetables, rice and cassava) Input markets assessed.	Critical constraints identified allowing implementation activities to begin.
1.2	Agribusiness partnerships supported to innovatively address constraints.	Will depend on outcomes of value chain analyses.	At least 1 pilot intervention designed and started.	Agreements with agribusiness. Five companies reached.	One formalised seed company will provide increased availability of quality seed and additional competition in the rice seed market.
1.3	Enhanced farmer services embedded within agribusiness practices.	Will depend on outcomes of value chain analyses.	At least 1 pilot intervention designed and started.		Two agreements formalised (one in pesticides and one in fertiliser) improving the provision of information with products through retailers.
1.4	Improved availability and communication of market information between value chain stakeholders.	Will depend on outcomes of value chain analyses.	At least 1 pilot intervention designed and started.		Media assessment completed. First step will be the commissioning of a rural media habits survey to be used to attract sponsors and advertisers to

Component and Activity		Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements
					produce programs for the rural population.
1.5	Participatory planning and construction of key infrastructure to address value chain bottlenecks.	Conduct a physical market assessment in the 3 provinces. Assess costs and benefits.	A cost benefit analysis of potential investments.	Initial assessments failed because of non cooperation from market owners TAF subcontracted to do a PP dialogue approach.	
Component 2: Irrigation and Water Management					
2.1	Improved capacity of MOWRAM and PDWRAM to participatively design, develop, operate and maintain irrigation schemes.	Develop capacity building priorities together with MOWRAM / PDWRAM. Initiate implementation of the plan.	Agreed capacity building plan Initial capacity building activities.	PDWRAMs have been supported in executing topographical surveys and detailed designs. Procurement of survey equipment to support PDWRAMs and MOWRAM More agreements reached for training in 2011.	PDRWAMs equipped to conduct surveys for canal rehabilitation. Technical advice provided by CAVAC staff during detailed design for canals.
2.2	Improved capacity of FWUCs to efficiently and effectively operate and maintain their irrigation systems.	Find FWUCs with potential and agree on support Support FWUCs with small infrastructure and capacity CAVAC proposes to	Plans to improve small infrastructure of 1 to 3 FWUCs.	CAVAC is undertaking a study to better understand how ownership works. It has had extensive engagements with potential owners of the 11 schemes. Guidelines on the operation of the Supplementary Investment Fund have been developed. Expect investments in	Initial dialogue and discussion with PDWRAMs and communities on FWUC and IFG establishment.

Component and Activity	Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements	
		work with both formal and informal farmer water users. It will assess the potential to work with commercial water providers and pump sellers.		next dry season.	
2.3	Selected systems rehabilitated and transferred to effective FWUCs.	6 smaller schemes selected, feasibility studies conducted and, if feasible, detailed design commissioned. Feasibility of the 4 medium sized schemes revisited.	4 to 6 schemes ready for tendering.	11 schemes initially selected for feasibility studies. Feasibility studies carried out with PDWRAMs' and MOWRAM's active participation. EIAs and EMPs prepared. Geotechnical surveys undertaken. PDWRAMs engaged for survey and detailed design. Preparation of tender and contract documentation for construction. Further review of four medium sized irrigation systems.	Up to eight canal rehabilitation schemes ready for tendering early in 2011, pending NSC approval. Construction to commence by 1 April.
2.4	Improved models of water management adopted in rainfed areas	Initial studies conducted either through ACIAR or directly	Better knowledge of water management available for extension	A proposal for a large study is ready for approval by NSC.	

Component and Activity		Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements
		commissioned			
2.5	Increase use of hydrological data in the planning and management of irrigation systems.	2 water availability studies initiated with links to agricultural opportunities and social structures	2 water availability studies commissioned	Developed TOR for Water Availability Study. Tender process and selection of consultant.	Water Availability Study and Irrigation Decision Support System to be developed by selected consultant, the Halcrow Group, commencing mid January 2011.
Component 3: Research and Extension					
3.1	Priority research and extension activities address constraints in selected value chains	3 large research studies are ongoing focussing on vegetables and rice and considering input markets and agritools. A fourth is planned on water use (will request separate approval from NSC Exec Group for this one) CARF activities will be ongoing small additional research may be	The 3 large research projects and CARF grants will have initial outcomes like farmer survey results. Pilot plots will show first results.	The fourth large ACIAR project on -farm water management, is ready for approval by the NSC and has gone through all ACIAR review and approvals. A survey for agrottools was outsourced. A survey for pesticides market was outsourced. Hundreds of rice germplasm has been tested at CARDI from IRRRI, selecting ~40 lines for multilocation trials in the dry season. ~24 benchmark trials were conducted assessing weed control, rice establishment, water management and fertilisers. Plans for dry season vegetable trials were made; interventions with vegetable markets, input suppliers, and other	Anticipating release of new rice varieties at the end of the project that will be market driven. Strategies for interventions in germplasm development and rice establishment are more clear thus allowing better focus in the next years' research work plans. Partners in the hort research project have clear roles and plans for upscaling information and improved techniques.

Component and Activity	Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements	
		commissioned if needed.		constraints to the vegetable growers prepared. CARF-9 call for proposals went out broadly to the research and agribusiness community. An outsources study of water pumps was finished.	
3.2	Enhanced capacity of formal and informal extension providers to transfer improved technologies and information to farmers	Development of a knowledge base by reviewing all available material. Develop products like support to Cambodian Journal of Agriculture. Assessment of potential formal and informal providers pilot support to formal and / or informal providers like village extension workers, GO's and NGO's Media, input providers, traders etc.	A knowledge base pilots with extension providers initiated.	Knowledge base is developed, though will be a continuous exercise. Cambodian Journal support underway. Strategy and methodology for model farmer training tested.	Previous extension and training materials were collected, assessed and catalogued for future reference and use. Through intensive testing and with large input from many stakeholders, CAVAC may now upscale the training methodology for model households with much confidence.
3.3	Partnership program linking researchers, extensionists, farmers and agribusiness developed and implemented	Initial links will be around the knowledge base. CAVAC will develop		Strategy developed. First activity with private provider underway	Private provider has increased capacity to demonstrate their product coupled with improved knowledge sharing, better trained

Component and Activity		Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements
		strategies of linking this knowledge to the research institutions and the providers.			staff, and improved grower training materials.
3.4	Budgetary support to CARDI	Payment to CARDI conditional to an agreement reached and development of a strategic resource plan for the next 5 years.	Operational support to CARDI	Done	CARDI clearly showed great effort towards greater sustainability and ability to garner increased RGC and donor funding.
Component 4: Business Enabling Environment					
4.1	Improved research and understanding of the enabling environment surrounding key value chains	This will be part of the value chain analyses and input market assessments. One additional small study	Small study	Value chain analysis and input markets assessments have identified potential areas of support.	
4.2	Increased opportunity for public private dialogue around key enabling environment issues	Initial activities around advocacy started. Likely to be outsourced	Initial steps to advocacy capacity	Research and pilot activities outsourced - undertaken by The Asia Foundation in Dec 2010 and Jan 2011, co-funding arrangement between CAVAC and TAF.	

Component and Activity		Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements
4.3	Strengthened industry representative organizations	Not likely much will be done in 2010		Not undertaken in 2010	
4.4	Increased use of Public Private Partnership investment model	Not likely much will be done in 2010		Not undertaken on 2010	
Cross Component Activities					
5.1	Assess the potential for high value rice export and the required support	This will mainly be done in-house based on available documents and key interviews	A positioning paper	The priority list has been drafted. Smalls study on registration will be done as part of the seed market intervention.	
5.2	Discuss and agree with MAFF / PDA on a capacity building plan	Develop capacity building priorities together with MAFF / PDA. Initiate implementation of the plan	Agreed capacity building plan Initial capacity building activities.	Contracted TAF to test feasibility.	
5.3	Gender and Disability	Institutionalize the strategy in procedures and responsibilities	Staff are able to include gender issues in all activities and are able to implement the strategy	Gender and Disability consultant engaged in December to review CAVAC program and activities.	Gender focus to be incorporated in all planning and activity design.

Component and Activity		Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements
		Screen workplan for Gender activities Conduct focused Gender studies to fill knowledge gaps			
5.4	Environment	Institutionalize the strategy in procedures and responsibilities Screen workplan for Environment activities Conduct focused Environment studies to fill knowledge gaps	Staff are able to include environmental issues in all activities and are able to implement the strategy . Environmental studies as required.	Environmental Consultant engaged in December 2010 to review CAVAC program and activities. Activities screened. Initial internal environmental workshop conducted for all staff in October 2010, and another, by an external consultant, in December 2010.	Environmental processes and procedures incorporated into CAVAC design and implementation, and M&E processes.
5.5	M&E	Finalizing M&E procedures Commissioning baseline studies Aligning with DCED activities Initiating M&E activities	M&E is an integral part of staff's daily activities Need of support for SAW M&E system identified and initial activities supported	M&E framework developed by M&E manager. Staff training undertaken.	
5.6	Internal training	Training on methodology, Gender,	CAVAC and RGC staff better able to implement activities	Training on M&E undertaken by M&E manager during 2010. Training on environmental issues undertaken by	Staff are trained in the key areas of methodology, gender,

Component and Activity		Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements
		environment, M&E		consultant in December 2010. Training on methodology undertaken by TL on an ongoing basis. Training on gender to be undertaken by consultant in January 2011.	environment, M&E.
5.7	Establishing Provincial Offices	Establishing Provincial coordination committees Selecting and equipping offices in the 3 provinces	3 provincial offices operational	Provincial Coordinators engaged, to commence duties in Jan 2011. Provincial Governors formally approached in November 2010 to nominate a location for provincial offices. Awaiting response.	
5.8	2011 Workplan development	Aug: Internal consultation Sept: Consultation MAFF MOWRAM Sept: Wider stakeholder consultation workshop 1 October: Submission draft workplan December: Full NSC request for endorsement	Workplan 2011	Workplan draft prepared, consultation undertaken, final draft circulated to co-chairs. NSC scheduled for January 2011.	
5.9	Fiduciary Risk and procurement risk	Fiduciary Risk Assessment and	Fiduciary and procurement risk assessments inform maximum	Draft TORs prepared. Consultation with MOWRAM on roles and responsibilities	

Component and Activity		Description	Expected Milestones - 2010	Key activities undertaken	Key Achievements
	assessment	Procurement Risk Assessment	use of and support to national systems	undertaken in December 2010. Assessments to be tendered in early 2011.	
5.10	Sector monitoring group	October: comments on AWP 2011 December: technical support mission	Advice to NSC and CAVAC	SMG mission in December 2010. Awaiting report.	

ANNEX 2: REPORT OF EXPENDITURE AGAINST WORKPLAN

Component and Activity		Description	Expected Milestones - 2010		Budget (USD)	Total Expenditure to Date	Total commitments to Date	% Committed against 2010 AWP budget
Component 1: Agribusiness					\$58,000	\$9,790	\$20,435	35%
1.1	Critical constraints to strategic value chains identified and developed for business action.	Conduct a value chain selection study, 2 - 4 value chain analyses, and input market assessments.	Selection of 2 to 4 value chains, mapping and constraint analyses undertaken for 2 to 4 value chains, and a mapping and constraint analyses for input markets underway.	Market Assessments	\$18,000			
				Value Chain Analyses	\$10,000	\$5,953		
1.2	Agribusiness partnerships supported to innovatively address constraints.	Will depend on outcomes of value chain analyses.	At least 1 pilot intervention designed and started.			\$0		
1.3	Enhanced farmer services embedded within agribusiness practices.	Will depend on outcomes of value chain analyses.	At least 1 pilot intervention designed and started.	Support to Providers, Pilots	\$25,000	\$1,029		
1.4	Improved availability and communication of market information between value chain stakeholders.	Will depend on outcomes of value chain analyses.	At least 1 pilot intervention designed and started.	Agribusiness Fund (see below)		\$0		

Component and Activity		Description	Expected Milestones - 2010		Budget (USD)	Total Expenditure to Date	Total commitments to Date	% Committed against 2010 AWP budget
1.5	Participatory planning and construction of key infrastructure to address value chain bottlenecks.	Conduct a physical market assessment in the 3 provinces. Assess costs and benefits.	A cost benefit analysis of potential investments.	Study	\$5,000	\$2,808		
Component 2: Irrigation and Water Management					\$424,000	\$237,462	\$460,386	109%
2.1	Improved capacity of MOWRAM and PDWRAM to participatively design, develop, operate and maintain irrigation schemes.	Develop capacity building priorities together with MOWRAM / PDWRAM. Initiate implementation of the plan.	Agreed capacity building plan. Initial capacity building activities.	Capacity building activities, funded through the Policy Support Facility		\$679		
2.2	Improved capacity of FWUCs to efficiently and effectively operate and maintain their irrigation systems.	Find FWUCS with potential and agree on support. Support FWUCs with small infrastructure and capacity. CAVAC proposes to work with both formal and informal farmer water users. It will assess the potential to work with commercial water providers and pump sellers.	Plans to improve small infrastructure of 1 to 3 FWUCs.	Support FWUCs	\$30,000	\$3,786		
				Support private providers	\$9,000			
2.3	Selected systems rehabilitated and transferred to effective FWUCs.	6 smaller schemes selected, feasibility studies conducted and, if feasible, detailed design commissioned. Feasibility of the 4 medium sized schemes revisited.	4 to 6 schemes ready for tendering.	Feasibility studies	\$25,000	\$97,829		
				FWUC small investment	\$40,000			

Component and Activity		Description	Expected Milestones - 2010		Budget (USD)	Total Expenditure to Date	Total commitments to Date	% Committed against 2010 AWP budget
2.4	Improved models of water management adopted in rainfed areas.	Initial studies conducted either through ACIAR or directly commissioned.	Better knowledge of water management available for extension.	Study	\$20,000	\$0		
2.5	Increase use of hydrological data in the planning and management of irrigation systems.	2 water availability studies initiated with links to agricultural opportunities and social structures.	2 water availability studies commissioned.	2 Studies	\$300,000	\$0		
Component 3: Research and Extension					\$1,258,856	\$225,087	\$887,949	71%
3.1	Priority research and extension activities address constraints in selected value chains.	3 large research studies are ongoing focussing on vegetables and rice and considering input markets and agritools. A fourth is planned on water use (will request separate approval from NSC Exec Group for this one). CARF activities will be ongoing. Small additional research may be commissioned if needed.	The 3 large research projects and CARF grants will have initial outcomes like farmer survey results. Pilot plots will show first results.	CARF	\$28,856	\$190,664		
				Pool B - approved	\$650,000			
				Pool B - to be approved	\$400,000			
				Small research	\$30,000			
3.2	Enhanced capacity of formal and informal extension providers to transfer improved technologies and information to farmers.	Development of a knowledge base by reviewing all available material. Develop products like support to Cambodian Journal of Agriculture. Assessment of potential formal and informal providers.	A knowledge base pilots with extension providers initiated.	Support knowledge base development	\$18,000	\$30,423		
				Material production	\$37,000			

Component and Activity		Description	Expected Milestones - 2010		Budget (USD)	Total Expenditure to Date	Total commitments to Date	% Committed against 2010 AWP budget
		Pilot support to formal and / or informal providers like village extension workers, GO's and NGO's Media, input providers, traders etc.		Support providers	\$23,000			
				Media assessment	\$10,000			
3.3	Partnership program linking researchers, extensionists, farmers and agribusiness developed and implemented.	Initial links will be around the knowledge base. CAVAC will develop strategies of linking this knowledge to the research institutions and the providers.				\$4,000		
3.4	Budgetary support to CARDI.	Payment to CARDI conditional to an agreement reached and development of a strategic resource plan for the next 5 years.	Operational support to CARDI.	Budget support	\$62,000	\$0		
Component 4: Business Enabling Environment					\$15,000	\$4,195		
4.1	Improved research and understanding of the enabling environment surrounding key value chains.	This will be part of the value chain analyses and input market assessments. One additional small study	Small study	Additional small study	\$5,000	\$195		
4.2	Increased opportunity for public private dialogue around key enabling environment issues.	Initial activities around advocacy started. Likely to be outsourced	Initial steps to advocacy capacity.		\$10,000	\$4,000		

Component and Activity		Description	Expected Milestones - 2010		Budget (USD)	Total Expenditure to Date	Total commitments to Date	% Committed against 2010 AWP budget
4.3	Strengthened industry representative organisations.	Not likely much will be done in 2010.				\$0		
4.4	Increased use of Public Private Partnership investment model.	Not likely much will be done in 2010.				\$0		
Cross Component Activities					\$326,500	\$7,740	\$74,019	23%
5.1	Assess the potential for high value rice export and the required support.	This will mainly be done in-house based on available documents and key interviews.	A positioning paper			\$0		
5.2	Discuss and agree with MAFF / PDA on a capacity building plan.	Develop capacity building priorities together with MAFF / PDA. Initiate implementation of the plan.	Agreed capacity building plan. Initial capacity building activities.	Training Costs	\$50,000	\$0		
5.3	Gender and Disability	Institutionalise the strategy in procedures and responsibilities. Screen workplan for Gender activities. Conduct focused Gender studies to fill knowledge gaps.	Staff are able to include gender issues in all activities and are able to implement the strategy	Two studies Gender	\$10,000	\$3,314		
				One study Disability	\$5,000			
5.4	Environment	Institutionalise the strategy in procedures and responsibilities. Screen workplan for Environment	Staff are able to include environmental issues in all activities and are able to implement the strategy.	Two Environmental impact assessments	\$12,000	\$0		

Component and Activity		Description	Expected Milestones - 2010		Budget (USD)	Total Expenditure to Date	Total commitments to Date	% Committed against 2010 AWP budget
		activities. Conduct focused Environment studies to fill knowledge gaps.	Environmental studies as required.					
5.5	M&E	Finalising M&E procedures. Commissioning baseline studies. Aligning with DCED activities. Initiating M&E activities.	M&E is an integral part of staff's daily activities. Need of support for SAW M&E system identified and initial activities supported.	Baseline studies	\$8,000	\$3,921		
				Support to SAW M&E	\$2,000			
				Exchange visit	\$2,000			
5.6	Internal training	Training on methodology, Gender, environment, M&E.	CAVAC and RGC staff better able to implement activities.	Environmental (consultant)	\$10,000	\$0		
				Value Chain (consultant)	\$10,000			
				Gender (consultant)	\$10,000			
				Seminar	\$5,000			
5.7	Establishing Provincial Offices.	Establishing Provincial coordination committees. Selecting and equipping offices in the 3 provinces.	3 provincial offices operational.	Contribution from PDA / PDWRAM in office space	\$0	\$0		

Component and Activity		Description	Expected Milestones - 2010		Budget (USD)	Total Expenditure to Date	Total commitments to Date	% Committed against 2010 AWP budget
5.8	2011 Workplan development.	Aug: Internal consultation Sept: Consultation MAFF MOWRAM. Sept: Wider stakeholder consultation workshop. 1 October: Submission draft workplan. December: Full NSC request for endorsement.	Workplan 2011	Workshop costs	\$2,500	\$505		
5.9	Fiduciary Risk and procurement risk assessment.	Fiduciary Risk Assessment and Procurement Risk Assessment.	Fuduciary and procurement risk assessments inform maximum use of and support to national systems.	Risk Assessments	\$200,000	\$0		
5.10	Sector monitoring group.	October: comments on AWP 2011 December: technical support mission.	Advice to NSC and CAVAC			\$0		
Facility and Grant Funds					\$238,500	\$126,980	\$157,680	66%
	Policy Support Funding Facility.	This facility will support the following activities (subject to approval of short proposals by EG): <ul style="list-style-type: none"> Support for development of SAW Implementation Roadmap. Support to MOWRAM for CISIS. Support to MAFF for consultation contract farming sub decree. 	SAW Implementation Roadmap. CISIS finance gap bridged, 300 schemes included. CF sub decree improved. One more request approved and implemented.	SAW Implementation Roadmap	\$100,000	\$126,980		
				Support to CISIS	\$60,000			
				CF Subdecree	\$20,000			

Component and Activity		Description	Expected Milestones - 2010		Budget (USD)	Total Expenditure to Date	Total commitments to Date	% Committed against 2010 AWP budget
		<ul style="list-style-type: none"> Other support initiated by MAFF / MOWRAM / AusAID with approval of EG of NSC. 		Other - including building MAFF / MOWRAM	\$48,500			
	Agribusiness Innovation Fund.	Improved availability and communication of market information between value chain stakeholders.	Supporting 1 pilot intervention.	Agribusiness Fund	\$10,000	\$0		
			Total AWP Expenditure (including ACIAR):		\$611,254			
			Total Expenditure plus Commitments:		\$1,609,652	Percentage:	69%	

ANNEX 3: CAVAC CONTRIBUTION AGAINST SAW LOGFRAME

	Indicators	CAVAC Contribution
<p>Overall Goal: To contribute to poverty reduction, food security and economic growth through:</p> <p>a) enhancing agricultural productivity and diversification; and</p> <p>b) improving water resources development and management.</p>	<ol style="list-style-type: none"> 1. Agricultural output increased by 20% over 4 years; 2. Beneficiary income increased by 20% over 4 years; 3. Employment in agri-business and agro-industrial sector increased by 20% over 4 years; 4. Area planted to cash crops increased by 20% over 4 years; 5. Value of agricultural exports increased by 30% over 4 years; 6. Value of formal bank loans for capital investment in agriculture increased by 25% over 4 years; 7. Volume of imported processed agri-foods decreased by 20% over 4 years; 8. Number of agri-business SME's increased by 10% over 4 years; 9. The area of cropping land with access to irrigation services is increased by 100,000 hectares over 4 years; and 10. The incidence of drought or flood affected farmland is reduced by 20% over 4 years. 	<p>CAVAC's goal and goal of the SAW goal overlap entirely. These are high level impacts where no results are expected within the first year of operation. CAVAC will contribute to indicators 1 to 5 and 7. Additionally, the Program has already made some contribution to indicator 9 by ensuring, to date, more than 1,000 ha of farming land receives access to dry season irrigation.</p>
<p>Output A (Policy and Regulation)</p> <p>A sound policy and legal framework to enable development of the Agriculture and Water sectors.</p>	<ul style="list-style-type: none"> • MAFF and MOWRAM have implemented and enforced policies, plans, laws and regulations for which they are responsible; and • Ministerial Prakas' are issued devolving the implementation of development programs to provincial departments, as mandated under the Organic Law. 	<p>CAVAC has supported MOWRAM with the CSISIS exercise. It also has invited proposals from MAFF and MOWRAM for further policy support. This has led to the delivery of a workshop on the rice policy. The Program has also submitted four proposals to the NSC to support government priorities in the rice policy.</p>
<p>Output B (Institutional Capacity Building and Human Resource Development)</p> <p>A sound institutional, administrative, research and education basis for effective work performance in agricultural and water resource development and management.</p>	<ul style="list-style-type: none"> • Facilities and equipment are improved; • An increase in performance and output in organisational capacity in planning, administration, management (financial and contract management, human resources management, information management, engineering and public works, project management, monitoring and evaluation) at the central and provincial level is observed; • Information systems are implemented; 	

	Indicators	CAVAC Contribution
	<ul style="list-style-type: none"> • A gender unit in MAFF and MOWRAM is functioning and fully funded to implement gender mainstreaming policies; and • Gender Action plans are updated yearly and implemented. 	
<p>Output C (Research and Education)</p> <p>A comprehensive and coordinated capacity to assemble and utilise agricultural and water-related knowledge, information and technology transfer.</p>	<ul style="list-style-type: none"> • Training institutes' facilities and curricula is improved; • Strategic and applied research and technologies are developed and adopted that are pro-poor, pro-women and pro-environment; • REE capacity is built and partnerships with national and international institutes strengthened; • Training given to directors and senior staff of MAFF and MOWRAM and provincial staff as well as FWUCs; • Agriculture processing technology is improved and niche products meet market needs; • Commune councils and rural communities develop and implement community development plans for communal aspects of agriculture, agri-business and water management; and • All action plans incorporate gender policy. 	<p>The three large research projects on rice establishment, germplasm and vegetables are well underway. All are implemented by government institutions (CARDI, GDA, RUA) and are having significant effects on the capacity of the Government to conduct research relevant to the SAW priorities. CARF grants have contributed further to the capacity.</p>
<p>Output D (Food Security)</p> <p>Agricultural systems and community arrangements that enable poor and food insecure Cambodians to have substantially improved physical and economic access to sufficient, safe and nutritious food at all times to meet their dietary needs and food preferences for an active and healthy life.</p>	<ul style="list-style-type: none"> • Beneficiary farmers are benefited by extension, technology transfer, improved production trainings and sets of low-input and improved technical packages; • Beneficiary farmers organised into groups and conducting smallholder farming activities based on the principles of sustainable and Good Agricultural Practices and Natural Resources Management; • Community projects are implemented using participatory planning techniques; • Communities are involved in the local planning processes under the provisions of the Organic Law; and • Food security concepts are integrated into development programs and policy. 	

	Indicators	CAVAC Contribution
<p>Output E (Water Resource Management and Agricultural Land Management)</p> <p>Sustainable and pro-poor management of water resources, water management facilities, water-related hazards, and land resources that is integrated, efficient, and carried out in a river basin context.</p>	<ul style="list-style-type: none"> • The Tonle Sap Authority (TSA) develops and implements an Integrated Water Resource Management Plan for the Tonle Sap and connected river basins; • MOWRAM and MAFF develop and implement a water resource management and agricultural resource management data collection and dissemination system; • Provincial and local authorities, farmers and other stakeholders are involved in IWRM and irrigation infrastructure planning and implementation; • An inventory and appraisal of land and water resources is carried out; • Master plans and identified priorities for land and water resource utilisation are implemented; • Agricultural and economic productivity of lowland and upland areas and cropping systems are assessed and subsequent land use plans are implemented; • MAFF and MOWRAM provide extension services for increased agriculture and water productivity; • MAFF and MOWRAM provide extension services for increased agriculture and water productivity in irrigable and rain-fed croplands; • 100,000 hectares of wetland and dryland irrigation is constructed and sustainable water management, harvesting and use practices are adopted by beneficiary farmers; • Land use certificates are provided to smallholder farmers; • Communal land rights are provided to indigenous communities; • MOWRAM and MAFF develop and implement a drought and flood forecasting system that provides timely warning to local authorities and farmers on the likely incidence and severity of events; and • MOWRAM and MAFF develop and implement drought and flood mitigation measures. 	<p>In 2010, CAVAC has contributed to Output E of the SAW by:</p> <ul style="list-style-type: none"> • initiating one river basin study (indicator 2); • supporting the data collection for the CSISIS (indicator 4); and • constructing irrigation for more than 1,000 ha and preparing construction for another 10000 ha (indicator 9).

	Indicators	CAVAC Contribution
<p>Output F (Agricultural Business and Marketing)</p> <p>Agriculture and agri-business that make effective use of inputs and market opportunities, are steadily intensifying and diversifying production, and deliver full benefits to farmers, rural communities, and other stakeholders</p>	<ul style="list-style-type: none"> • Beneficiary farmers have access to rural financial packages and contract farming agreements i.e. agricultural insurance products, long-term loans through RDB and financial institutions, and leasing arrangements, to provision agriculture and water public and private extension services to increase and sustain agricultural productivity; • Beneficiary farmers, agriculture merchants, suppliers and traders, by coordination of a national network supported by the DAE, have adopted high-value crop production, appropriate farm mechanisation technologies, and alternative delivery mechanisms that are proven to increase agricultural yields and quality; • Marketplaces have the human, financial and infrastructure resources to store, grade, package, process and transport agricultural products ; • Farmers are linked directly with high-value markets, agri-clinics and SMEs (through ICT applications and rural networks) to enable trade in agricultural products supported by farmer marketing schools, market-led extension services, Farmer Contract Law and sub-decree(s); and • Export in certified processed agri-food products that meeting international standards has increased by 20%. 	<p>CAVAC has assessed input markets required and subsequently initiated relationships with a number of input companies to improve agricultural efficiency.</p>

ANNEX 4: IRRIGATION CANALS – ROLES AND RESPONSIBILITIES DISCUSSIONS (13 DECEMBER 2010, CAVAC OFFICE)

Tasks	CAVAC	MOWRAM	PDWRAM	Comments
Initial irrigation scheme selection criteria	P	P	P	CAVAC to prepare initially. Discuss and agree.
Potential schemes identification	P	P	P	All to submit proposals.
Selection of schemes for study	P	P	P	Proposals by PDWRAM. Discuss by all three, and agreement.
Feasibility Study	P	S	S	CAVAC to lead, fully supported by PDWRAM and MOWRAM.
EIA/EMP	P	S	S	CAVAC to contract.
Recommendation for NSC	P			CAVAC to draft and discuss.
TOR for survey and detailed design	P			
Contract for survey and design	P			
Topographical survey	S	S	P	
Detailed design	S	S	P	PDWRAM with support from CAVAC as required. Capacity building. Checked by CAVAC, changes discussed and agreed.
Prepare tender and contract documents	P		S	PDWRAM to provide drawings and Bill of Quantities.
Call for tenders	P		S	With support from PDWRAM, as designers, at tender briefing.
Receive tenders	P			Receipt of tenders and public opening. Registration of bids.
Evaluate tenders	P	P	P	Evaluation committee to consist of: MOWRAM; PDWRAM; CAVAC Irrigation and Water Management Manager; CAVAC Procurement Manager; and a committee member.

Tasks	CAVAC	MOWRAM	PDWRAM	Comments
Negotiate contract	P			
Award contract	P			
Construction supervision	P		P	PDWRAM, with CAVAC engaging independent checker for payment certification. CAVAC to discuss further with AusAID on need for independent checks.
Contract administration, including payments				To be resolved. CAVAC to discuss with AusAID.
Final checks				To be resolved. CAVAC to discuss with AusAID.
Handover on Practical Completion	P		P	Handed over to PDWRAM.
Administer defects period	P		P	Six months and 5% retention.
Establishing organisation for O&M	S		P	
Training for organisation	S		P	Capacity building as required for PDWRAM.
Monitoring system and organisation performance	S	S	P	

P = Primary responsibility S = Provision of support