

Cambodia Agricultural Value Chain Program (CAVAC)

Six-Monthly Progress Report (Report Number 3)



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ABBREVIATIONS AND ACRONYMS

ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AIF	Agribusiness Innovation Fund
APHEDA	Australian People for Health, Education and Development Abroad
AQIP	Agriculture Quality Improvement Project
ARF	Adviser Remuneration Framework
AUD	Australian Dollar
AusAID	Australian Agency for International Development
AWP	Annual Work Plan
AYAD	Australian Youth Ambassador for Development
BEE	Business Enabling Environment
BPH	Brown Plant Hopper
CARDI	Cambodian Agricultural Research and Development Institute
CARF	Cambodian Agriculture Research Fund
CAVAC	Cambodia Agricultural Value Chain Program
CEDAC	Cambodian Center for Study and Development in Agriculture
CelAgrid	Centre for Livestock and Agriculture Development
CISIS	Cambodian Information System on Irrigation Schemes
CLEAR	Cambodian Land and Environmental Atlas and Resource
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAALI	Department of Agronomy and Agricultural Land Improvement (currently General Directorate of Agriculture)
DAE	Department of Agricultural Extension
DAL	Department of Agricultural Legislation
DCED	Donor Committee for Enterprise Development
DOA	District Office of Agriculture
DPO	Disabled Peoples' Organisation
DRC	Department of Rice Crop
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
FAO	Food and Agriculture Organization
FHH (f/h/hd)	Female Headed Household
FLD	Farmer Livelihood Development
FRA	Fiduciary Risk Assessment
FWUC	Farmer Water User Community
GDA	General Directorate of Agriculture
GERES	Groupe Energies Renouvelables, Environnement et Solidarités
GIS	Geographic Information System

GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPS	Global Positioning System
GRET	Groupe de Recherche et d'Echanges Technologiques
HARVEST	Helping Address Rural Vulnerabilities and Ecosystem Stability
IDCs	International Development Consultants
IDE	International Development Enterprises
IFC	International Finance Corporation
IIRR	International Institute for Rural Reconstruction
IRRI	International Rice Research Institute
IT	Information Technology
ITC	Institute of Technology of Cambodia
KCNSA	Kampong Cham National School of Agriculture
M&E	Monitoring and Evaluation
MCU	Mean Chey University
M4P	Markets for the Poor
MAFF	Ministry of Agriculture, Forestry and Fisheries
MAS	Marker Assisted Selection
MBPI	Merit-Based Pay Initiative
MODE	Minority Organisation for Development of Economy
MOU	Memorandum of Understanding
MOWRAM	Ministry of Water Resources and Meteorology
MSME	Micro, Small and Medium Enterprise, an USAID program
MTR	Mid-Term Review
NGO	Non-Governmental Organisation
NSC	National Steering Committee
NSW I&I	New South Wales Industry and Investment
NWISP	North West Irrigation Sector Project
PALO	Provincial Agricultural Legislation Office
PCC	Provincial Coordination Committee
PDA	Provincial Department of Agriculture
PDA-KCH	Provincial Department of Agriculture - Kampong Cham
PDWRAM	Provincial Department of Water Resources and Meteorology
PLNSA	Prek Leap National School of Agriculture
POC	Priority Operating Cost
PPD	Public Private Dialogue
PVS	Participatory Varietal Selection
REE	Research, Education and Economics
RGC	Royal Government of Cambodia
RUA	Royal University of Agriculture

SAW	Strategy for Agriculture and Water
SEA TV	South East Asia TV
SIF	Supplementary Investment Fund
SME	Small Medium Enterprises
SMG	Sector Monitoring Group
SNV	Netherlands Development Organisation
SPC	Saigon Plant Protection Joint Stock Company
TAF	The Asia Foundation
TEEAL	The Essential Electronic Agricultural Library
TSA	Tonle Sap Authority
USAID	United States Agency for International Development
USD	United States Dollar
VVOB	Flemish Association for Development Cooperation and Technical Assistance
WB	World Bank

FOREWORD

This report covers the period from 1 January – 30 June 2011 and has been developed in collaboration with the Australian Agency for International Development (AusAID)'s appointed Team Leader, the Australian 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 (NSC) with an update on key deliverables and issues during the period, and as such reports directly against the 2011 Annual Work Plan (AWP).

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1 DETAILS OF PROGRESS

1.1 Overview and highlights

In May 2010, CAVAC submitted its inception report to the Royal Government of Cambodia (RGC) and the Australian Agency for International Development (AusAID). The inception report set out an ambitious plan for the four years ahead. Not only does CAVAC commit itself to delivering value-for-money interventions with a poverty focus, it does this with the difficult pre-condition that impact needs to be achieved through sustainable local systems. CAVAC seriously commits to applying modern best practices in development.

After one year in full operation, it is an opportune time to ask:

- Are the initial program ambitions still realistically achievable with the progress to date?
- Is CAVAC on track to deliver according to the 2011 Annual Work Plan (AWP)?
- Are all appropriate systems in place?
- Where / what are the main challenges to successful implementation?

CAVAC's design is based on a number of assumptions. These include the assumption that there are enough opportunities to work with the public and private sectors, and the assumption that CAVAC can find feasible irrigation investments with a good likelihood of sustainability. With regard to irrigation, the construction of seven canals in 2011, all of which have shown excellent value-for-money, should be seen as a major success and a solid basis for achieving the ambitions of CAVAC. During the period, the Program has also designed and commissioned a water availability study – this will be a useful tool in enhancing real sustainability. CAVAC has engaged with communities and developed strategies to promote local ownership of canals – this is another element of real sustainability. Whilst it is too early to claim success with regards to local ownership, the current indications are promising. All achievements in irrigation would not have been possible without a genuine and constructive collaboration between the Ministry of Water Resources and Meteorology (MOWRAM), the Provincial Departments of Water Resources and Meteorology (PDWRAMs), and CAVAC. This collaboration was essential in overcoming some issues related to the voluntary release of land to enable the rehabilitation of canals.

CAVAC's initial focus on working with the private sector has been around input markets and embedded information. The process of engaging with companies takes time. Both CAVAC and the companies have to find common ground and understand each other. This may have taken longer than some may have expected, but progress is in line with the 2011 AWP schedule. CAVAC is now in a very solid position with detailed agreements with a number of companies, associations and partners. In fact our team is currently at capacity; any increase in the number of partners could only be achieved with additional personnel resources. All

signals show that there are opportunities to address major agricultural constraints through companies and associations. Present agreements are initial evidence that CAVAC is able to tap into these opportunities.

All four large research projects are now being implemented. Initial findings are promising as can be seen in the annexes. However, it will take more time to assess the value-for-money of this type of long-term research. CAVAC also aims to encourage the RGC to sustain or improve the investments in long-term research; again it is too early to judge if this will be successful. The activities related to extension are also on-track.

Activities in the Business Enabling Environment (BEE) component started later. At this stage, the Program is still trying to find the best mechanisms for effective implementation of this component. One area that has been well subscribed is the Policy Support Funding Facility with MOWRAM's Cambodian Information System on Irrigation Schemes (CISIS) project and the six sub-projects under the Ministry of Agriculture, Forestry and Fisheries (MAFF)'s Rice Value Chain Improvement project supported in 2011.

With regards to cross-cutting issues, two useful studies have assisted CAVAC's integration of gender and disability issues in all activities. The next six months will be critical to see if CAVAC is able to fulfil its ambition.

In 2010, CAVAC met almost all AWP targets (CAVAC's first *six-month* work plan) with only a few delays. For the 2011 AWP, there is a similar confidence that the Program can deliver the core of its annual commitment.

Administrative hurdles have created a delay in the process of hiring Cambodian experts. With partner agreement and finalisation of the contract amendment in mid June 2011, CAVAC is now finalising the recruitment process. It is important to note that human resources to date have probably been the main constraint in delivering more, and in delivering faster. Positively, the staff profile CAVAC chose has proven successful with the Cambodian experts quickly adapting to the complex methodology and systems. A round of external training that has been initiated is likely to boost the capacity further.

In the initial design, a larger co-implementation with the RGC was expected. A change from the Cambodian Merit-Based Pay Initiative (MBPI) salary supplement system to the Priority Operating Cost (POC) system has delayed this full collaboration, putting more pressure on the present workforce.

The opening of provincial offices in February and a round of Provincial Coordination Committee (PCC) meetings between March and May have enabled CAVAC to interact better with provincial government offices. The collaboration with the PDWRAMs is perceived by

CAVAC as constructive, and the collaboration with the Provincial Departments of Agriculture (PDAs) is also growing well.

As interventions have progressed to implementation, CAVAC has further identified the different nature of Markets for the Poor (M4P) activities compared with standard AusAID program delivery mechanisms. AusAID's administrative and financial systems are designed for the majority of its programs and less adjusted to the process oriented design of CAVAC, when flexibility is at the heart of it. Directly collaborating with the private sector and working with partners in a non-traditional way is challenging the AusAID systems even further.

At the time of writing, CAVAC is focusing additional efforts to progress the environmental management aspect of the Program. A focus on other aspects of implementation has led to less focus on this area than desirable. Progress has been further hindered by the new Adviser Remuneration Framework (ARF) and obstacles in hiring an internal expert (the delay in the contract amendment put pressure on CAVAC's work). Ultimately, this has led to postponing activities in the cassava sector and sensitive interventions related to, for example, pesticides. CAVAC is confident that this delay will be overcome soon, with sub-contracts addressing these constraints already in place.

A Sector Monitoring Group (SMG) mission in February 2011 assessed CAVAC's monitoring and evaluation (M&E) system positively. CAVAC's M&E system is likely to become compliant with the Donor Committee for Enterprise Development (DCED) M&E standards. CAVAC held its first program wide, week long, three-monthly M&E review in May.

CAVAC's management and staff have regular engagement with other development partners. Many of the discussions are informal and issue-based. Examples of this engagement include:

- Discussions with the United States Agency for International Development (USAID) Micro, Small and Medium Enterprise (MSME) Project on policies; the Netherlands Development Organisation (SNV) and International Development Enterprises (IDE) on vegetables; and the Asian Development Bank (ADB) on irrigation.
- Utilisation of World Bank (WB) led studies on agricultural inputs as a basis of analysis.
- The CAVAC led coordination and collaboration in support to rice export.
- Interaction with Non-Governmental Organisations (NGOs) through extension activities.

CAVAC initiated important discussions around its poverty focus with an internal study in early January, followed by a mission from AusAID Canberra in June. The activities highlighted the question of how the growth focus of CAVAC would benefit the poor and the very poor in the selected provinces. This has initiated a number of follow-up activities including a more

detailed study on how economic growth in rice-based farming in CAVAC's three target provinces benefits the poorest (and landless) households.

Creating more clarity around CAVAC's poverty focus is important in the preparation for the Mid-Term Review (MTR), which is less than a year away. With the present team, internal systems, achievements to date, collaboration with stakeholders and the opportunities in the value chains, CAVAC is comfortable that it can deliver the type and amount of results needed for a constructive and positive MTR.

1.2 Component 1: Agribusiness development

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

In the first half of 2011, the Agribusiness Development component has focused on developing new partnerships and interventions in support markets. Good progress has been made and almost all support markets now have active agreements in place. All agreements are soundly grounded, addressing the constraints identified in the original CAVAC strategies. The rice export sector is also on the verge of submitting applications to the Agribusiness Innovation Fund (AIF).

Some significant studies have been conducted to further define interventions. The cooperation between all components within CAVAC means research results are shared and results are regularly applied across components. A good example is CAVAC's recent media study. The results of the study are being used by both the Agribusiness Development and the Research and Extension components. The poverty study, undertaken in January, has also been used by the Agribusiness Development component to validate and target existing interventions.

An overview of current activities / interventions is as follows:

Rice seed

- CAVAC has been working on an agreement with Mr Iv Vanna, a major farmer and rice seed producer in Kampong Thom province, to establish a rice seed business development plan.
- Agreements have been formed with three rice seed associations (Champej, Boeung Nimul, and Sre Cheng associations) to conduct rice seed trials for improved wet season varieties.
- CAVAC is in the process of developing training for the three aforementioned associations in Kampot and Takeo, small rice seed producers in the target provinces, and Mr IvVanna to improve the rice seed production methodology.

Pesticide market

- CAVAC has an agreement with a pesticide company called Saigon Plant Protection Joint Stock Company (SPC) to work on retailer training for pesticide retailers and to better understand the current situation in the pesticide market through a focused survey on the extent of the market for low quality pesticides.

It should be noted that SPC's focus has shifted and the company seems to have lost its drive in this area. CAVAC is responding to this situation by extending its own research into the pesticide market and by developing new partnerships.

- CAVAC has a new agreement with Nokor Thom Pesticide Company to train its extension staff to provide better extension to farmers and retailers. Additionally, an activity expansion is being considered to build the company's capacity to provide an emergency response in the case of a significant disease outbreak.

Fertiliser market

- CAVAC has an agreement with a large fertiliser distributor, Yetak, to provide retailer training to fertiliser retailers and improve internal quality systems to assist Yetak in reducing the number of low quality fertilisers in its distribution network. The first national level training has been completed and the follow-up provincial trainings are being designed collaboratively by Yetak and CAVAC.

Vegetable seed market

- CAVAC was not successful in identifying suitable local partners in vegetable seed production and, as such, will develop a general offer to the market by piloting vegetable seed retailer training and involving the vegetable sector in networking opportunities at the training.

Rice export market

CAVAC has been engaging with two Cambodian rice milling and exporting companies; Golden Rice and Baitong.

- Golden Rice is in the final stages of submitting an application to CAVAC for support in conducting a feasibility study into a collateral management system to ensure the company is more attractive to small rice farmers as a buyer of paddy.
- Baitong is also in the final stages of submitting an application to CAVAC for support in providing training on improved extension methodologies to its extension workers of its green communities so that Baitong can source more paddy from the communities.

Agritool market

- CAVAC has developed a demonstration stand to introduce more optimal use of water pumps for irrigation purposes and to inform retailers and manufacturers of business opportunities through providing more information when selling pumps and engines.
- Land levelling is being considered by CAVAC although this may not materialise as an intervention as it may not be considered suitable for poorer farmers.

Media

CAVAC has an agreement with a production house, Delight Cambodia, to train its staff to better produce quality programs. A pilot episode will also be produced under this agreement. This intervention is further supported by two pieces of research. It is expected that this will generate increased interest by advertisers and other production houses in servicing the rural population with more targeted programming.

CAVAC is also in the process of contracting:

- Media habit research of the rural population to establish the size of the potential media market in the rural population and how the rural population consumes media.
- Quality assessment of current agricultural programs in the media to enable improved future programming ensuring higher consumer satisfaction levels.

The agreements with Delight Cambodia and Nokor Thom are the first two agreements which have gone through the process of the AIF. Two additional applications are also expected from Baitong and Golden Rice in the rice export sector.

Cassava

After the approval of the 2011 AWP, CAVAC had initial talks with companies in the cassava sector. It is awaiting the outcome of an environmental impact assessment before activities are taken on. The two main issues that the environmental assessment needs to consider are potential deforestation and soil depletion.

Case Study 1: Delight Cambodia

In media, CAVAC is working with Delight Cambodia to build its capacity to make better agricultural programs. Through previous experience, the company has identified agriculture as a niche in which it wants to build excellence. The objective is to add to the current availability of agricultural programs and to generate a sustainable market for agricultural programs funded through sponsorship. Currently, this is not occurring due to several reasons. The most fundamental reason is that there is no information on the media habits of the rural population. All media popularity research is being conducted on the preferences of large urban centres. Because of this, markets for rural programming are badly understood and the quality of the programs that are available is poor. CAVAC is in the process of addressing this through the following three activities:

1. The first is a media habit research activity to establish the scale of the rural media market and the opportunities.
2. The second is a detailed assessment of the quality of the existing programs and the opportunities to improve.
3. Finally, in collaboration with Delight Cambodia, the Program is working with the company to address its constraints to improve its agricultural programming.

The two research activities are funded by CAVAC to ensure the results can be presented to the market as a whole, through workshops, to generate broader interest in agricultural programming. It is expected that the generated interest will then be enough to create demands which will enable Delight Cambodia to establish a strong position in the market. The capacity building support offered to Delight Cambodia is also available to all other TV stations and production houses.

With TV programs being broadcast nationally, the potential outreach is huge. By developing the media market for agricultural programs, the benefit directly linking this into a yield increase is too complex to make plausible. The generation of a sustainable market for the agricultural media is a sufficient benefit.

1.3 Component 2: Water management

Intermediate Outcome: Sustainable increase in the area and yield of irrigated crops.

Seven canals are currently being constructed; two each in Takeo and Kampong Thom, and three in Kampot. In addition, a 1.5-kilometer extension to the Krapum Chuk Canal, rehabilitated in 2010 by CAVAC, has been completed. The table below summarises these canals.

Table 1: Summary of canals

Province	Canal	Length (km)	Command Area (ha)
Takeo	TumnubLok	14.80	3,700
	KvengTayi	5.15	2,000
	Krapum Chuk Extension	1.50	300
Kampot	Sbove Andet	6.75	2,000
	O'Kak	2.89	1,000
	Thnoat	6.83	3,500
Kampong Thom	Thnoat Chum	7.30	1,400
	Angko	2.00	600

With a total of up to 14,500ha of improved paddy cultivation, and enabling poor farmers to move from farming one crop to two or three crops per year, the impact on poverty is likely to be significant. In addition to only farming one crop per year, many of these farmers also have very low yields for their only (wet season) crop. This is commonly due to unreliable water for irrigation. As such, the canals will not only increase the area cultivated over the year (i.e. the number of crops per year), but will also help lift yields from existing levels. Most farmers have small land holdings and currently support their families to subsistence level or just above. These farmers will gain significantly from being able to produce more than one crop per year. Further survey work on the canals' impact is planned and will include assessing the impact on the very poor, and often landless, community members.

Construction is almost finished and it is expected that farmers will commence using the canals over the next six months. CAVAC has worked closely with the three PDWRAMs in target provinces in all aspects of this work. With CAVAC support, the PDWRAMs are now establishing a Farmer Water User Community (FWUC) at each canal, which will enable the farmers to take responsibility for canal operation and maintenance.

CAVAC also completed its first water availability study in April. The study, conducted by the Halcrow Group, concluded that the water availability in the lowland area of Takeo was not a constraint to irrigation development, even considering climate change and the impact of dams on the Mekong. The Decision Support System developed will help select the most suitable canals for rehabilitation.

CAVAC continues to provide technical capacity building to MOWRAM and the three PDWRAMs. Most of this is through mentoring, on-the-job training, and advice. Some survey equipment has been provided to improve the efficiency of PDWRAM work.

Additionally, the Program is finalising its Ownership Strategy, drawing on lessons learned from previous projects. The results and conclusions will improve CAVAC's future work with FWUCs and communities.

CAVAC's Supplementary Investment Fund (SIF) has been designed to provide support for demand-driven infrastructure rehabilitation. CAVAC promoted this opportunity for FWUCs and other interested groups in Takeo through a media program, and called for submissions. Fourteen submissions have been received and these are currently being assessed by the Takeo PDWRAM and CAVAC.

For information on the pump related activities, please see the agribusiness section.

Case Study 2: Canal rehabilitation

During the implementation of canal rehabilitation, it has become clear that communities need to be better informed of the impact of the canals, particularly with respect to land required to be provided by landowners for canal construction. This was highlighted in two canals, both in Kampot Province.

At the Thnoat Canal, discussions with the Commune Council and farmers were held during the feasibility study, and the Commune Council was asked to obtain agreements from affected farmers. This was done by obtaining thumbprints from land owners agreeing to provide land. During the implementation, it became clear that the actual land take of the canal was not fully understood. This was highlighted by a house located quite close to the canal, where either the house had to be moved or the design needed to be changed to eliminate the impact on the house. After much discussion between the local authority, the Provincial Governor's Office, the District Governor, the PDWRAM and the affected house owner, it was agreed to make a change to the design so that the house was not impacted.

At the Sbove Andet Canal, a similar process was followed during the feasibility study, with agreements on land obtained by the Commune Council. Once again, farmers and landowners did not appreciate quite how large the canal, and its associated land needs, was. The design recognised that the canal's ideal alignment would require two houses to be relocated, and planned to divert the canal around the houses. As construction progressed, the house owners recognised that by moving the houses back and away from the canal line, the canal could resume its straight line. Revised agreements were signed by the homeowners, agreeing to move the two houses back and away from the canal. Earlier discussions and recognition of the issues could have reduced the tension created by the construction of this canal.

1.4 Component 3: Research and extension

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

Poverty reduction is the ultimate goal of all CAVAC interventions. For extension interventions, several channels were selected with which to work. Working with model farmers is a potential channel or leverage point through which the very poor farmers gain information and knowledge from seeing the benefit of the changes model farmers are undertaking. Model farmers have natural social incentives for providing poor farmers with new information and knowledge while taking on more risks. Hence, CAVAC's intervention using whole family trainings for model farmer households to improve their knowledge will improve poor farmers' knowledge. It is anticipated that poor farmers' application of new knowledge will improve their earnings from watching and listening to their model farmers' mentoring.

Research activities are progressing well, with:

- three large studies' experimental results showing significant progress in identifying key constraints for rice establishment;
- newly selected rice germplasm to be further screened for drought and water submergence tolerance; and
- tomato and pepper lines identified for growers and published as improved technical information.

See Annex 4 for further details.

The fourth and final large research study, on-farm water management, was approved and some of the Memorandums of Understanding (MOUs) have been signed. The team is now preparing for an August 2011 inauguration of the project.

Cambodian Agriculture Research Fund (CARF)

CARF-7 and CARF-8 projects were monitored and are progressing well. The CARF-9 panel approved 12 out of 26 research proposals with a very wide research scope, from rice germplasm collection in the mountains, use of sulphur fertilisers in intensive rice cultivation to upscaling fruit wine production to mention a few.

Extension

For extension, model farmer household trainings have begun with over 900 households trained in CAVAC's three focal provinces. Training materials and methodology developed by CAVAC for rice production training (for model farmer households) have also been adopted by four NGOs and three entire PDAs (Kandal, Takeo and Kampot) for their rice model

household training programs. The Minister of Agriculture also ordered many copies of the training resources to be provided by him at his farmer rallies. Media training resources (a comedy routine and drama) have been released and have a clear message on fertiliser use.

Whole-family-training (i.e. inviting husbands and wives to a three-hour focused participatory training) as a training methodology was upscaled through the hiring of nine Provincial Trainers. Staff from the Department of Agricultural Extension (DAE) and the PDAs have been involved as resource persons. Local input suppliers / retailers have also been involved as resource persons for the trainings.

Two DVDs were released by CAVAC through MAFF collaboration. One was a comedy routine by Prom Magn, in which he and his partner explained soil fertility and the use of fertilisers through a comedic routine. This DVD was provided to bus companies to show on their buses and was also copied and sold widely throughout Cambodia. The other DVD released was a drama, *'Bong Beng: The Intelligent Farmer'*. This melodrama combines a plot around producing high yielding rice with two suitors competing for the hand in marriage. This DVD will be shown on prime-time television, sponsored by fertiliser companies, provided to bus companies, and marketed by a Cambodian DVD distributor. These two productions will provide accurate information on soil fertility and fertilisers while addressing the current Cambodian tensions between traditional and modern rice production methods.

CAVAC also developed a joint plan with a fertiliser company wanting to expand its farmer trainings and demonstrations. Thus, with CAVAC's partnership, this company has increased its demonstrations and training sessions to above the jointly agreed number. In the training, the company used CAVAC's model grower training materials developed during 2011. The additional demonstrations and training sessions were conducted in provinces other than CAVAC's target provinces.

Case Study 3: Change caused by training

Mr Long Sophal is a model farmer in Team Chas village, Kampong Svay commune, Kampong Svay district, Kampong Thom province. He and his wife attended a whole family model household training conducted by CAVAC together with Kampong Thom PDA. After the training, he was so convinced by CAVAC trainers and obtained solid knowledge of proper use of fertiliser.

One day, Mr Sophal went to the fertiliser store of Mr Hour Kim Hort in downtown Kampong Thom. Mr Kim Hort recommended only DAP (18-46-0) fertiliser for basal application; however, Mr Sophal explained clearly to the store owner that if he only applied DAP, his rice crop would not have enough nutrients. He said he needed to add another kind of fertiliser if he used DAP; alternatively he could use 20-20-15 fertiliser without having to add any other nutrients (20-20-15 contains all required nutrients: nitrogen, phosphorous and potassium). That day, Mr Sophal only purchased 20-20-15 fertiliser.

Later on, Mr Kim Hort had a similar conversation with another farmer. The other farmer refused Mr Kim Hort's recommendation of using 20-20-15 at the panicle initiation stage. The farmer explained that his rice plant only needed nitrogen and potassium, so he did not need 20-20-15 but Urea and Potash (0-0-60). The two farmers' explanations amazed Mr Kim Hort so strongly that Mr Kim Hort wanted to find out who had trained these farmers.

Just one day later, Mr Hok Chan (another model farmer trained by CAVAC) went to Mr Kim Hort's store and brought with him a one-page one-concept booklet. Mr Chan also had a contact number of a CAVAC trainer with him. Mr Kim Hort looked at the one-page one-concept booklet and was very impressed with the pictorial description within the booklet, which was both informative and attractive.

With the impression of knowledge gained by farmers and the quality of the booklet, Mr Kim Hort contacted a CAVAC trainer in Kampong Thom and requested five training sessions for his district retailers. He believed that, with these training sessions, retailers would be able to provide better information and knowledge to farmers. Another reason for Mr Kim Hort's training request was that most of the fertilisers and herbicides indicated in the booklet were the products he was selling. If retailers have the knowledge of using the products indicated in the booklet, they will order his products more.

CAVAC positively responded to Mr Kim Hort's request, as CAVAC believed that improving retailers' knowledge would also improve farmers' knowledge. The trained retailers will also be involved in whole family trainings as resource persons and sources of inputs which farmers will need. This will contribute to demand creation, and ultimately benefit both the retailers and farmers. The trigger point will be when district retailers and dealers actively work to meet the demands of farmers on their own. If it is a really good business case for Mr Kim Hort (i.e. he is selling more because of improving retailers' knowledge of proper use of his products), he might ask other sources of information and knowledge to continue this business model.

1.5 Component 4: Business enabling environment

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

The Business Enabling Environment (BEE) component of CAVAC has two major tasks:

- 1) support government institutions in policies, rules and regulations; and
- 2) address and assess value chain related policy issues.

Support government institutions with policies, rules, and regulations

CAVAC continued to support MOWRAM in a *data collection and processing project for the C/S/S*. In January 2011, CAVAC signed an amendment to the original contract to provide additional funding to MOWRAM for a training course entitled 'CISIS Geographic Information System Data Processing Good Practices.'

By January 2011, MAFF had submitted a proposal supporting the *RGC's Rice Export Policy* under the Policy Support Funding Facility to the Executive Committee of the NSC. This proposal was consolidated from six proposals of various departments / institutions under MAFF, including the Department of Rice Crop (DRC), DAE, the Cambodia Agricultural Research and Development Institute (CARDI), and PDAs from the three target provinces. The consolidated proposal was approved by the NSC in February 2011. The overarching agreement supporting this project and the other six agreements between CAVAC and the implementing agencies have been signed. The implementing agencies have been trained by CAVAC in financial management, reporting, and other related procedures. Five of the six implementing agencies have also received the first funding payments from CAVAC and are now ready to start the project activities.

CAVAC has continued to create awareness of the Policy Support Funding Facility among government departments and institutions. In April and May 2011, the CAVAC BEE Specialist engaged with a number of departments within MAFF and MOWRAM to discuss policy-related issues and the need for support from CAVAC. By June 2011, CAVAC received five new proposals under the Policy Support Funding Facility: three from MAFF (including one from Takeo PDA) and two from MOWRAM. These proposals have been submitted to AusAID for review.

To improve the support to the government, CAVAC has initiated consultation meetings with other organisations. A number of individual meetings have been conducted between CAVAC and other policy experts from various organisations and initiatives, such as USAID's Helping Address Rural Vulnerabilities and Ecosystem Stability (HARVEST), USAID's MSME, the International Finance Corporation (IFC), and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to discuss policy-related issues and cooperation among development

partners in enabling business environment in Cambodia. All partners agreed that the coordination and cooperation among development partners needed to be improved.

Following the individual meetings, an initial BEE sharing meeting was conducted in June 2011. Experts from CAVAC, MSME, HARVEST, IFC, and AusAID met and shared ideas about coordination and cooperation matters in providing support to the RGC. A second BEE meeting to continue discussions with experts from other development organisations has been planned for August 2011.

Address and assess value chain-related policy issues

Several significant policy issues have been identified by CAVAC. These issues include: cumbersome delay in licensing for input suppliers, high transaction costs in transportation, and quality standards in fertilisers and pesticides. To address these issues, CAVAC has initiated discussions with the Deputy Director of the Department of Agricultural Legislation (DAL) of MAFF to seek opportunities to cooperate. DAL requested that CAVAC support a few critical activities, including training for input retailers and activities to raise farmers' awareness of proper use of agricultural inputs. Moreover, CAVAC has planned to continue discussions with other key agencies (such as the General Directorate of Agriculture [GDA], PDAs and Provincial Agricultural Legislation Offices [PALOs]) because these agencies have been mandated by MAFF Minister to deal with the above issues per MAFF's Directive No. 1383 on the Agricultural Input Quality Control Strengthening Measures issued on 11 March 2010.

Jointly with The Asia Foundation (TAF), CAVAC has conducted a feasibility study on the potential for Public Private Partnerships in rural markets. The conclusions of this study showed that a more government-led approach to public private partnerships might be more appropriate and it was agreed that TAF will take the lead in setting this up.

1.6 Cross cutting issues

CAVAC wrote a Gender and Disability Strategy in May 2010 which was discussed during the SMG meeting in November 2010. For both Gender and Disability, CAVAC commissioned two studies to answer some open questions. Both studies were finalised in the beginning of 2011.

Gender

The analysis on which the gender strategy was based will need some adjustments to reflect the findings of the study. Regarding the Female Headed Households (FHHs, or f/h/hds), the situation has changed significantly in recent years. The percentages of the poor and excluded FHHs appear to be lower than expected and new forms of FHHs have become

more dominant as the quote from the gender study report, commissioned by CAVAC, demonstrates:

*The most significant fieldwork finding was a notable change in the definition and perception of f/h/hd over the past few years due to country-wide gender awareness and media campaigns; and decentralisation and de-concentration reforms. Whilst the traditionally defined 1990's poor widow or divorced f/h/hd still exists, in 2010 a more modern, braver and **married** f/h/hd made up of increasing numbers of rural wives reportedly earning more money than their husbands, is taking over from her earlier counterpart. The modern f/h/hd is often a trader or other type of entrepreneur in local markets.*

Even given this, CAVAC should still monitor the excluded FHHs, but there might be less opportunity to take additional and specific action to reach this group.

The study also investigated observations that female farmers were less represented in the formal bodies with which CAVAC interacts.

The consultant wrote:

Overall, the study found that high participation of women at village meetings, at times as high as 70%, was nowadays commonplace whereas prior to 2003, women purportedly made up around 10 – 20% of participants. The most prevalent strategy used by women who reportedly want to take a greater part in meetings and decision-

Some actions on gender in program components so far

Agribusiness Development

The CAVAC agribusiness activities have all been screened for their potential impact on gender inequality. At the minimum, interventions should not add to gender inequality. Where possible, interventions can aim to positively impact existing inequality. Men and women have different lives and different opportunities to access information and training. The principle is that the group that is most active in the sector or target activity needs to be accessed through the information or training (whether male or female). A good example of implementing this principle is the retailer trainings that will be conducted over the next six months. As most retailers at provincial markets are women, the trainings have been designed to ensure their participation. Some important health concerns for pregnant and breastfeeding women in relation to working with agro-chemicals will be specifically included for this group.

Water Management

CAVAC recognises the different roles that men and women have in water management and irrigation. Based on our discussions with communities, we have learned that women are regarded as stronger financial managers than men. For example, in the community at the O'Kak Canal in Kampot Province, it was women who played the key role in the collection and management of fees for the local road association. This opens opportunities for women in key roles in our work with the PDWRAMs in establishing the FWUCs at the CAVAC canals. Effective engagement with women is particularly important in the communities in which CAVAC works due to the high number of FHHs.

making, included gathering together in a separate women's group to discuss issues, form opinions and make appropriate choices, then giving their opinion as a whole to a mixed group, or else having a strong female representative talk on their behalf to the mixed group after their discussion. Agreement is shown by clapping hands, whether the decision is made by the group as a whole, a group facilitator on behalf of the group, or a village chief. The importance of having women only focal groups, and women's representation on FWUC Committees, including sub-committees, to improve gender equality in participation and decision making, is confirmed by a recent North West Irrigation Sector Project (NWISP) report likely to interact with.

The report showed that while under representation might still be the case in some situations, it is not always the case. CAVAC will continue to monitor representation, but cannot assume upfront that additional action is needed.

For both issues, the gender study gave specific recommendations, of which some were very practical and could easily be included in the implementation and others would need more consideration.

CAVAC's Gender Strategy refers to three steps:

- be aware and learn;
- influence where possible; and
- do no harm.

The gender study gave advice on how CAVAC could better implement the three principles. Working more closely with development partners is one example of how CAVAC will better implement these three principles.

Disability

While CAVAC was fully committed to including disability issues in its operations, at the time of writing the strategy it was less clear on how the Program could mainstream it. Realising that AusAID and other development partners have limited experience in including a focus on disability in rural programs, CAVAC sees itself on a learning path over the next year where it intends to collaborate with AusAID.

As such, CAVAC commissioned a study to see where program activities would be likely to affect the lives of people living with disabilities and how it could adjust activities to improve the lives of people living with disabilities. Together with better insight, the study gave nine recommendations. These nine recommendations are listed below with CAVAC's intended actions following these recommendations.

Table 2: Disability review recommendations and responses

Review recommendations	CAVAC's responses
1) Ensure consultation processes meaningfully include farmers with disabilities and / or farmers who have family members with disabilities who have been identified as potential participants and beneficiaries in the CAVAC program.	CAVAC will implement this recommendation for major documents like the development of the AWP.
2) Appoint a disability focal point within CAVAC.	CAVAC has engaged a full time Gender and Disability Specialist who will commence in August.
3) Train CAVAC staff, trainers and partners in rights of persons with disabilities and strategies for disability inclusion.	This was included in the 2011 AWP.
4) Promote understanding and implementation of disability inclusion with government officials and local authorities.	CAVAC is currently considering how best to do this within the confines of the program.
5) Ensure accessibility to information and physical access to infrastructure.	CAVAC will more proactively offer transport to farmers with disabilities to attend CAVAC funded trainings.
6) Collaborate with NGOs who work inclusively and / or can potentially provide specialized knowledge and skills and / or access to farmers with disabilities.	CAVAC is open to this recommendation, but it will depend on the opportunities.
7) Proactively promote inclusion of farmers with disabilities or family members with disabilities in CAVAC literature, illustrations for educational materials and case studies.	Agreed.
8) Ensure that agricultural inputs and technologies that are promoted are safe, accessible and affordable.	CAVAC will be more aware of this.
9) Ensure monitoring and evaluation and research are disability inclusive when contracting and / or approving research proposals or independent evaluations.	CAVAC will consider this further.

Environment

CAVAC has prepared and is currently working with environmental procedures consistent with AusAID's 2003 guidelines. In addition, CAVAC is now preparing new environmental procedures based on AusAID's new guidelines which have not yet been approved or released, but which have been provided to CAVAC in draft form.

Agribusiness and the environment

CAVAC is planning to work in cassava. Traditionally, cassava cultivation has been associated with soil depletion and deforestation. Both are concerns for CAVAC, RGC and AusAID, and CAVAC wants to ensure that no harm is done through any of the program's intervention and therefore complies strictly with the laws and regulations governing environmental impacts of both the RGC and the Australian Government. It is in this aspect that all parties involved agree that an Environmental Impact Assessment (EIA) is a prerequisite before starting work in the cassava sector. The recruitment of the EIA consultant

has been a complicated procedure. National and international environmental consultants with relevant experience in Cambodia and with knowledge of the Australian procedures are not easy to find. The new AusAID Remuneration Framework was not attractive enough for some of the consultants whom AusAID worked with before. This has caused some delays in conducting the environmental assessment. This has also postponed CAVAC's work in cassava.

Almost all other CAVAC agribusiness activities impacts are expected to be positive. This is probably best demonstrated with pesticides activities. The cost of pesticides is relatively low compared to the potential crop damage caused by pests. Almost all farmers will make the choice to use pesticides if they fear significant crop damage.

The more informed use of pesticides means more effective pesticide use applied at the right moment through the correct procedure in the right protective clothing and a decrease in the amount needed because of the more effective application.

Irrigation and the environment

The EIA and Environmental Management Plans (EMP) for the canal rehabilitation program were completed during 2010. The requirements of the EMP included measures to address in the design of the canals, including the control of sedimentation and erosion, and the management of environmental impacts during the construction phase.

The design of each canal addressed the EMP issues, and the construction contracts include clauses to ensure that impacts are managed, including the appropriate disposal of waste to the environment and the safe handling of hazardous materials. Each contractor was required to submit a waste management plan, which has been monitored during construction.

Disaster Risk Reduction

CAVAC understands that the sustainability of its activities is an important part of ensuring that households and communities are better prepared for disasters.

The initial Water Availability Study has now been completed, and another is planned. This 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-term droughts during the growing season.

Anti-corruption

During the reporting period, CAVAC has actively managed risks by implementing clear financial management guidelines both internally and for funding recipients, and has monitored processes and procedures to ensure sound financial management by recipient

organisations. This has included providing specific financial management training for recipient organisations.

Anti-corruption – Agribusiness

Working with and through companies so far has not yet presented corruption issues but the Agribusiness component is vigilant and tries to ensure that this will not happen by adopting good management practices to avoid this happening.

Some of these are firmly enshrined in the CAVAC philosophy, such as its neutrality. CAVAC does not favour any company; support presented to one company in the sector is available on demand for all others in the sector. CAVAC does not develop a company, but it develops a support market, and this is always explained in the first meeting CAVAC has with any company. All information gathered by CAVAC in an intervention is a public good and is available to all. All information received from a company in the course of an intervention is confidential between CAVAC and the company.

By interacting with companies, it is necessary to have a set of guidelines that apply to staff, such as that staff are not allowed to attend social functions with partners alone. Cost of meals must be shared or, in long-term relationships, paid for alternatingly. All gifts must be reported to management, and if deemed unreasonable, they must be returned.

Anti-corruption – Water Management

CAVAC has carefully managed the award and implementation of the canal construction contracts to minimise the risk of corruption. The tender processes were conducted using open and transparent processes, with strict procedures followed with respect to tender briefings, bid submissions, formal tender opening, recording tender prices at public sessions, and appointing an independent tender assessment specialist on the tender evaluation panel. Construction contracts have been signed between CAVAC and each contractor, with the PDWRAM staff members appointed as construction supervisors. Claims for progress payments are checked jointly by CAVAC and the PDWRAM construction supervisors, and payments are made to contractors directly from the CAVAC office. An Independent Checking Engineer has been engaged, with responsibility for final sign off at the end of construction. This will provide CAVAC with confidence that payments are appropriate for the work undertaken, and that any defects to be addressed during the Defects Liability Period are impartially identified.

The Implementation of the SIF will need to be managed closely. With small scale infrastructure work implemented locally, it would make sense to have some measures of local contracting by local authorities and / or FWUCs. The results of the Fiduciary Risk Assessment (FRA) will guide CAVAC's management of these activities.

The establishment of FWUCs, and the associated capacity building at the CAVAC canals, has been sub-contracted to the PDWRAMs. The financial management of funds for this activity with each PDWRAM includes a funds advance to a jointly managed account in each province, with full acquittal required prior to further advances being made.

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

There are two major (and competing) potential issues, as CAVAC is on the cusp of implementing a variety of interventions: (i) the ability to deliver quality services within resource constraints; and, (ii) the tendency of other projects to work with companies under much more favourable conditions.

The key emerging issue will be to continue to deliver services to a high standard given high demand and limited resources. As the team's workload increases, it will become increasingly important to ensure that sufficient time is spent on each intervention and that staff remain focused. Potentially, there are two methods of resolving this. The first is to recruit more staff; however, suitable staff are not always readily available and will always require significant amounts of initial support and capacity building. The second is to recruit specialists as consultants to manage issues that would otherwise require a significant amount of time from the team in doing research and finding solutions. The preferred solution would be to recruit consultants, but with new ARF, appropriately skilled consultants could be out of reach while available consultants may not add significantly to the skills in the team, especially in the context of a market development project. A strategy for us to avoid over-extending the team is to be selective at the beginning of interventions. CAVAC's ability to be more selective, and not to be considered unreasonable, will depend on the quality of the existing interventions. A transparent measure to be more selective is to increase the firms' contribution required under the AIF.

The second issue is the tendency of other projects to work with companies under much more favourable conditions. This has been a factor in the pesticide and vegetable seed interventions. An example is that when a seed company has worked with other development partners that directly buy seeds to distribute for free to farmers, there is often less interest in cost sharing arrangements to improve its distribution networks. Aid is seen as a free gift, not as a tool to stimulate innovation. Given time, CAVAC was able to form a partnership with the Nokor Thom Pesticide Company; while in the vegetable sector CAVAC was unable to

develop a partnership with any appropriate company. This risk will probably be mitigated once it has become apparent that CAVAC interventions are successful. This has been an issue in the last six months but with CAVAC increasing its visibility and generating a better understanding of its possibilities, the incidence of companies approaching CAVAC for support has increased. If managed well, this issue will disappear in the future.

2.2 Component 2: Water management

As highlighted in the second case study above, the **issues related to land** requirements for irrigation canals are a challenging area. CAVAC has learned much from the implementation during 2011 and processes will be enhanced to reduce risks for the next round of rehabilitation. CAVAC will do everything possible to enable farmers to give properly informed consideration to their consent to provide land. CAVAC recognises that farmers need to be better informed at an earlier stage on the impact of the canal on their land and that freely given and informed consent to use land is obtained as a pre-condition for implementation. To this end, CAVAC's feasibility studies will include more detailed information on the proposed works and the 'land take' on each side of the canal. The alignment will be pegged to ensure farmers fully understand the land required for construction. CAVAC also recognises that while the CAVAC canals deliver significant benefits to communities as a whole, there are individuals who will benefit less due to the need to provide some of their land. During the next round of feasibility studies, if land issues exist and are not resolved, CAVAC will not proceed with implementation.

It is recognised that increasing the size of canals increases the risk to community members of **drowning**. While there is a great deal of standing and flowing water in Cambodia, in some communities CAVAC canals improve access to water, particularly for children. The program is currently exploring the possibility of instigating a water safety program through the Royal Life Saving Society – Australia in conjunction with SwimSafe who have been involved in water safety programs throughout Asia.

Control of water during construction is a major issue, particularly as the construction of the canals has run into the wet season. Working with the communities and the contractors, CAVAC has been careful to ensure that **any ponding or localised flooding** has been addressed. Additional drainage structures have also been added to some of the contracts to ensure effective drainage around the canals.

2.3 Component 3: Research and extension

Key issues over the period which highlight risks over the next six months include:

- Delay in signing MOUs – delayed the implementation of the last major research project, On-Farm Water Management.

- Under-assigning of CARDI staff / scientists to the rice germplasm project has hindered some of the experiments.
- With two out of three partners (CARDI, Royal University of Agriculture [RUA], and GDA) not prepared to start the rice system experiment of the Rice Establishment Research Project during the early wet season, one of nine on-farm field demonstrations did not get implemented. However, this situation is currently being corrected and all the three partners are empowered to begin this wet season for both on-station and on-farm trials.

2.4 Component 4: Business enabling environment

Where an improved business enabling environment can have a major impact on agricultural growth, CAVAC is also more and more aware of some of the limitations. The business enabling environment does not rely only on good laws and regulations, but also on incentives of all players within the system. These incentives may not always create optimal outcomes for farmers and companies. CAVAC, with its present management arrangements, may not always be best placed to address some of the key issues.

3 PROGRAM MANAGEMENT

3.1 Staffing update

A total of 45 people are now employed under CAVAC, with four positions currently vacant. Vacancies include an M&E officer and assistant, an irrigation and water management specialist (for which CAVAC has advertised and interviewed twice, but found no suitable candidate), and the newly created environmental specialist (for which CAVAC has also advertised and interviewed but found no suitable candidate). Further information is available in Annex 6: Staffing Update.

Re-designation of positions

As CAVAC has developed, it was found that staffing needs were slightly different from the original allocation, and it was agreed to re-designate six non-specified administrative positions to provide for a program officer, second finance officer, translator, IT officer, gender specialist, and an environment specialist.

The contract between AusAID and Cardno has been amended, and all the re-designated positions have been recruited except for the environment specialist, with no suitable candidate was found from the applications received for that position. Other options for filling this position are now being considered.

Establishing provincial offices

In January 2011, the three Provincial Coordinators were employed, and in February, the provincial offices were established in all three provinces. The offices in Takeo and Kampong Thom are housed within the PDWRAM while the office in Kampot is housed within PDA. Establishing these three offices included undertaking minor refurbishment work and providing office furniture, office equipment, and a vehicle in each province. A driver has also been engaged for each office.

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 the Six Monthly Procurement Report, submitted to AusAID in conjunction with this report. *(This report addresses procurement from the Operations and Imprest accounts, but does not include details of procurement specifically undertaken by and funded through ACIAR.)*

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

- It should be noted that during this reporting period, the AusAID ARF was released to the public. All international advisers engaged following the release of the ARF have been engaged in accordance with the Framework. At 30 June 2011, no advisers have rejected the rates offered under the ARF. However, it should be noted that it is understood that some short term specialist are choosing not to apply for positions given the new rates.
- Contracts were placed for eight irrigation canals in the three provinces and all will be completed by August 2011.
- In accordance with an agreement between AusAID, CAVAC and MOWRAM, the establishment and capacity building of FWUCs for irrigation canals, where possible, will be carried out by the respective PDWRAMs in each of the three target provinces.
- The first applications have already been received for three grants under the AIF. Applications are currently under review and agreements will be finalised in July 2011.
- Expressions of Interest were received for consultants to conduct (a) an Assessment of Government Partner Public Expenditure and Financial Accountability Capacity and Associated Risk and (b) a Procurement Risk Assessment of government partner procurement capability and capacity and associated procurement risk.
- AusAID are currently requesting approval from MAFF and MOWRAM for the consultants to undertake these studies and, as such, contracts have not yet been placed. It is anticipated that these consultancies will be contracted in the next six month period.

3.3 Training update

Table 3: Summary of training provided

Name of Training	Date	Target Group	Principal Trainers	Achievements
Model Farmer Training	96 sessions from April-June for Model farmer households; 10 households in each session	Model farmer households	CAVAC staff - 9 Provincial Trainers	Model farmer households trained in plant nutrition, soil fertility, use of herbicides, and rice seed preservation. Training model and methodology upscaled and refined.
Model Farmer Training of Trainers		4 NGOs (GIZ, Farmer Livelihood Development [FLD], the Flemish Association for Development Cooperation and Technical Assistance, [VVOB] and the Minority Organisation for Development of Economy [MODE] working with disabled growers) and 3 PDAs (Takeo, Kampot, and Kandal)	CAVAC staff	Potential exposure or outreach expanded 2 times over CAVAC's own model grower training
Finance and Reporting	June 2011	PDAs	CAVAC staff	PDA staff trained
FWUC training	May 2011	PDWRAM FWUC specialists	CAVAC staff	PDWARM staff trained
Software (Produced by Awhere) Training for the Cambodian Land and Environmental Atlas and Resource (CLEAR)	June 2010	Government counterparts and NGOs - 76 RGC department and NGO staff	ARUNA Technology – a local GIS firm	Counterparts trained. CLEAR released.
Participatory Teaching and Extension	May 2010 (2-week training in Takeo)	25 PDA/District Office of Agriculture (DOA) staff and 10 CAVAC trainers Human Capacity Building requested by PDA Takeo	International Institute for Rural Reconstruction (IIRR)	Counterparts and CAVAC staff trained
ValueLinks Introductory Training	May 2011	2 MAFF staff members	International Development Consultants (IDCs)	MAFF staff trained

Name of Training	Date	Target Group	Principal Trainers	Achievements
National Fertiliser Training	April 2011	Fertilise retailers	Yetak Fertiliser Company	Fertiliser retailers trained
Training in Total Station	June 2011	PDWRAM and MOWRAM	ARUNA Technology-Local GIS firm	PDWRAM and MOWRAM staff trained
Impact Assessment in Research	May 2011	CAVAC Research Partners: CARDI, GDA, RUA, Institute of Technology of Cambodia (ITC), and MOWRAM	M&E Specialist from the ACIAR Headquarters	Partners more familiar with impact assessment in their research

Table 4: Summary of training attended by the CAVAC team

Name of Training	Date	Target Group	Principal Trainers	Achievements
Gender	January 2011	CAVAC staff	Ingrid Gray	Staff trained
Methodology	January 2011	CAVAC staff	Peter Roggekamp	Staff trained
Methodology follow up	March 2011	CAVAC staff	Peter Roggekamp	Staff trained
Task Forces	March 2011	CAVAC staff	Peter Roggekamp	Staff trained
M&E	April 2011	CAVAC staff	Peter Roggekamp	Staff trained
Participatory Teaching and Extension	May 2010 (2-week training in Takeo)	25 PDA/District Office of Agriculture (DOA) staff and 10 CAVAC trainers Human Capacity Building requested by PDA Takeo	International Institute for Rural Reconstruction (IIRR)	Counterparts and CAVAC staff trained
Gender follow up	June 2011	CAVAC staff	Peter Roggekamp	Staff trained
Disability	June 2011	CAVAC staff	Peter Roggekamp	Staff trained
Environment	June 2011	CAVAC staff	Roger Bedhall	Staff trained

3.4 List of reports

Table 5: List of reports

Report	Status	Comment
Six Monthly Procurement Report	Submitted January 2011	
Six Monthly Progress Report January 2011	Submitted January 2011	
2011 Annual Work Plan	Approved February 2011	
Monthly exception reports, January–June 2011	Submitted monthly	
Six Monthly Procurement Report		To be submitted in July 2011
Six Monthly Progress Report July 2011		To be submitted in July 2011

The above table shows the reports submitted in accordance with the contract between Cardno and AusAID. CAVAC also provides a monthly Progress Report to counterparts and AusAID.

In addition, each provincial office also provides a monthly summary note to the Provincial Coordination Committee. CAVAC also provides to the Co-Deputy Team Leaders a three monthly monitoring sheet showing progress against program indicators.

4 EXPENDITURE AGAINST BUDGET (AWP 2011)

Below is a summary of expenditure against the work plan in 2011. Further details can be found in Annex 3.

Table 6: Expenditure against budget (AWP 2011)

Description	AWP 2011 Budget (USD)	Expenditure Jan – Jun 11 (USD)	Total Commitments to Jun 11 (USD)	Percentage Committed against AWP 2011 Budget
C1 Agribusiness Development	\$365,000	\$22,953	\$52,253	14%
C2 Water Management	\$3,365,000	\$1,106,952	\$2,150,430	64%
C3 Research and Extension				
ACIAR Funding	\$1,684,511	\$629,184	\$749,184	44%
Imprest Account Funding ¹		\$4,326	\$4,326	
C4 BEE	\$452,000	\$92,274	\$289,299	64%
Cross Component Activities	\$405,000	\$84,851	\$92,149	23%
Total	\$6,271,511	\$1,940,539	\$3,337,641	53%

¹ Support funding for ACIAR activities.

ANNEX 1: PROGRESS AGAINST WORKPLAN - TABLE

Component and Activity		Description	Expected Milestones - 2011	Key Activities Undertaken	Key Achievements - June 2011
Component 1: Agribusiness Development					
1.1	Critical constraints to strategic value chains identified and developed for business action	Conduct 1 or 2 additional value chain analyses Assess the role CAVAC can play in the RGC export strategy	Selection of 2 value chains Mapping and constraint analyses for 1 or 2 value chains Position paper developed for Rice export	The rice export value chain mapping has been finalized. CAVAC will conduct an additional rice value chain analysis in a poor area in Kampong Thom in October.	Inventory of other development initiatives to support the RGC's rice export strategy done and an agreement on collaboration reached. The media market for rural population assessed and analysed and interventions for this market designed.
1.2	Agribusiness partnerships supported to innovatively address constraints	Improve input markets in rice, vegetables and cassava; processing in cassava; tools in rice. Improve availability of efficient and affordable pump units	12 interventions started or ongoing.	At present, there are agreements to support 12 companies and associations.	Interventions to support these partners designed, agreed, and/or started.
1.3	Enhanced farmer services embedded within agribusiness practices.	All companies of 1.2 will be encouraged to add extension activities. Activities will also be addressed in 3.2	Interventions included in 1.2 and 3.2	Engagement with the partner companies to include some form of better sharing information with farmers in most interventions.	A national training delivered for fertilizer retailers. Provincial training sessions on fertilizer ongoing with one company and planned for another one. Pilot vegetable training sessions planned.
1.4	Improved availability and communication of market information between value chain stakeholders.	CAVAC to organise a number of linking events and will encourage companies to improve communication within their network.	Included in 1.2 and 3.3	Main focus is on the information flow from research to retail. A main event is being organised for this. A help desk and a source website are under construction and a set of materials have been designed and produced.	A number of materials available. Event designed, agreement reached with PDA and an event organiser being selected.
1.5	Participatory planning and construction of key infrastructure to address value chain bottlenecks	Initial engagements with market managements have been discouraging. CAVAC therefore initiated public private dialogue pilots to assess potential for this approach. If successful, this initiative can be upscaled.	Dialogue in at least 2 market places established and issues identified and partly addressed.	Research by TAF finalized and analysed. For the time being, no activity is foreseen related to market places.	

Component and Activity		Description	Expected Milestones - 2011	Key Activities Undertaken	Key Achievements - June 2011
Component 2: Irrigation and Water Management					
2.1	Improved capacity of MOWRAM and PDWRAM to participatively design, develop, operate and maintain irrigation schemes.	Intense collaboration with MOWRAM and PDWRAMs in the construction of up to 11 schemes and outsourcing in the detailed design of another group of schemes. Involvement in the water availability studies	Extensive collaboration and subcontracting with all 3 PDWRAMs. Support to PDWRAMs in training as chapter 7.2. Some material support like 3 total stations.	PDWRAM have been supported in carrying out detailed designs and construction supervision. Procurement of survey equipment to support PDWRAMs and MOWRAM. More agreements reached for training in 2011.	PDWRAMs' capability in design, tendering and construction supervision improved .
2.2	Improved capacity of FWUCs to efficiently and effectively operate and maintain their irrigation systems	In 2011 CAVAC will finalise a position paper on how best to improve ownership of irrigation schemes. This will lead to a need assessment and support to all schemes where CAVAC will be involved with. CAVAC will also scale up the Supplementary Investment Fund.	Up to 13 FWUCs have received support and are better able to manage the irrigation schemes.	CAVAC is finalising a study to better understand how ownership works. CAVAC has signed agreements with the PDWRAMs to establish FWUCs at all 9 canals and to train those FWUCs. Proposals have been received for the first round of the SIF.	Early stages of establishing FWUCs. Capacity building by PDWRAM initiated and initial training of trainers done. First pilot round of SIF conducted.
2.3	Selected systems rehabilitated and transferred to effective FWUCs	Depending on the decision of the NSC in 2010, CAVAC will tender up to 11 schemes and commence construction in 2011. On top of that, one or two FWUCs will receive co-funding for improvements.	Up to 11 schemes transferred to FWUCs. 1 or 2 additional FWUCs supported.	Completed detailed design for 7 canals plus one extension. Prepared and completed tender process for all canals. Contracts signed and construction commenced. Signed agreements for PDWRAMs to undertake construction supervision at all canals.	7 canals and one extension - 80% complete. They will be ready for use after August 2011 with communities moving towards double and triple cropping with a total expected area of around 15000 ha.
2.4	Improved models of water management adopted in rain fed areas	If approved by the NSC, ACIAR will initiate a large research project on water management.	Better knowledge of water management available for extension.	On-farm water management study approved by the NSC and now being implemented.	
2.5	Increase use of hydrological data in the planning and management of irrigation systems	One water availability study that has been tendered in 2010 will be finalised in 2011. PDWRAMs will be trained on the use of it. If successful, one more study will be undertaken in 2011	2 water availability studies finalised. PDWRAMs trained.	Implemented a Water Availability Study in Takeo. Developed a DSS to assist canal selection. A workshop held in Takeo with MOWRAM and PDWRAMs. Conducted tender process for water related Organisational Study. Tenders assessed. Discussions with PDWRAMs in Kampong Thom and Kampot underway for 2nd study.	Water Availability Study completed and DSS developed. Initial training at the workshop in Takeo.

Component and Activity		Description	Expected Milestones - 2011	Key Activities Undertaken	Key Achievements - June 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 (for separate approval by the NSC Executive Group) CARF activities will be ongoing Small additional research may be commissioned, if needed.	Details are given in the AWP main text. A summary is as follows: For the 3 approved large research projects, the baselines and trials will have been analysed leading to further research activities. The water use project will have delivered its literature research and first results from the pilots. CARF-9 will have awarded a number of research grants.	The Rice Establishment Project had dry season trials harvested and analysed. Wet-season protocols were accepted by all partners. The Rice Germplasm Project had multi-location trials harvested and analysed. The Horticulture Value Chain Project had their vegetable trials harvested and analysed. Post harvest trials were emphasized. A writing workshop was held to disseminate results.	Baseline survey completed and circulated. Dry season trials finished and analysed. All research partners are working well together. Rice germplasm has been identified for further tests and ultimate release based on its quality. 12 CARF-9 proposals funded.
3.2	Enhanced capacity of formal and informal extension providers to transfer improved technologies and information to farmers	CAVAC has collected and further developed materials for extension. In 2011, the Program will adjust the form to the needs of the extension provider. It will support extension providers in the following categories: village extension workers, input suppliers, large companies, media, FWUCs and NGOs. The Cambodian Journal of Agriculture will receive support.	8 interventions that support a range of extension service providers will have started or continued, leading to improved capacity of the providers to reach farmers.	Hired 9 Provincial Model Household Trainers. 2-day training of model household curriculum developed for implementing in August. Help desk plans developed for implementing in August. Worked with Agribusiness to develop 2-day course curriculum for input suppliers. See also the comments in 1.3	Model farmer household trainings have begun with over 900 households trained in CAVAC's 3 focal provinces. Training materials and methodology developed by CAVAC have also been adopted by 4 NGOs and 3 PDAs (Kandal, Takeo, and Kampot). The Minister of Agriculture ordered many copies of the training resources from CAVAC. Media training resources (a comedy routine and drama) have been released and have an expanded viewing on fertilizer use.
3.3	Partnership program linking researchers, extensionists, farmers and agribusinesses developed and implemented	The extension providers from 3.2 will be linked to sources of knowledge, either directly or via linkage events.	Extension providers from 3.2 will have access to sources of knowledge	The IIRR implemented a 2-week course on participatory extension for the CAVAC trainers and 25 PDA and DOA staff in Takeo. Plans for a linkage event to be held in August were made. Materials for dissemination were produced. Agreements on a accessible website were reached.	An event organizer was being selected to manage this event in Kampot. Initial monitored changes in behaviour by model farmer households have been encouraging.
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 including the Cambodian Journal of Agriculture	Discussions held on upcoming request for funds from CAVAC to be based on strategic resource plans.	CARDI is thinking and acting more strategically in how they conduct their research.

Component and Activity	Description	Expected Milestones - 2011	Key Activities Undertaken	Key Achievements - June 2011	
Component 4: Business Enabling Environment					
4.1	Improved research and understanding of the enabling environment surrounding key value chains	Additional studies and analyses of issues related to activities undertaken by CAVAC. See AWP text for details.	At least one issue addressed.	Internally reviewed the issues around the value chains in the 2011 AWP. Had discussions with many stakeholders to seek for opportunities to cooperate and to address the issues. Issue of licensing being addressed.	Some issues internally identified. Met and discussed with many stakeholders. Planned to discuss with various other stakeholders.
4.2	Increased opportunity for public private dialogue around key enabling environment issues	Integrated with 1.5		Initial report by TAF on the potential for PPD analysed and the Terms of Reference for a follow-up activity drafted.	Feasibility study of the PPD approach completed. Good interest found by the public sector to engage better with the private sector. Follow-up activities agreed with TAF.
4.3	Strengthened industry representative organisations	Activities will emerge from other activities.		Options have been scoped, but not much potential has been found so far.	
4.4	Increased use of Public Private Partnership investment model	Integrated with 1.5 and 2.3		The public-private partnership is deemed crucial at CAVAC. CAVAC has been promoting and testing several public partnership projects through research collaboration, capacity building training, and dialogue, etc.	
4.5	Policy Support Funding Facility	This facility will support activities initiated by MAFF / MOWRAM / AusAID with approval from the Executive Group of the NSC.	MAFF supported for rice policy activities. TWG supported with basket funding. Other RGC initiatives supported.	The Rice Value Chain Improvement project agreements have been signed by CAVAC and respective implementing agencies. First funding payments have been transferred. The implementing agencies are now ready to start the activities. CAVAC also continued to support MOWRAM in the data collection and processing project for the CISIS. This project has now been completed. CAVAC received 5 new proposals from MAFF, including PDA, and MOWRAM, and they have now been submitted to AusAID for review.	The Rice Value Chain Improvement project proposal approved by the NSC and the project agreements signed. CAVAC's support to MOWRAM for its CISIS project completed. 5 new proposals submitted to AusAID for review.

Component and Activity		Description	Expected Milestones - 2011	Key Activities Undertaken	Key Achievements - June 2011
Cross Component Activities					
5.1	Gender and Disability	The Gender and Disability strategies will guide activities. Both will be mainstreamed in all activities. On top of this one or two dedicated interventions are likely.	Gender and Disability are mainstreamed in all activities.	The Gender and Disability studies were finalized in the beginning of 2011. CAVAC has been considering the recommendations based on the results of the studies and have taken some actions. Recruited a Gender and Disability Specialist. Internal training has been conducted.	The Gender and Disability studies finalized. A Gender and Disability Specialist recruited.
5.2					
5.3	Environment and Disaster Risk Reduction	Environmental strategy will be operational in 2011. Update and provide training on AusAID's revised Environmental Management Strategy. Undertake Environmental Impact Assessments on approximately 10 irrigation schemes	All interventions will have been screened for environmental impacts	Implementing the CAVAC Environmental Strategy. Further review of strategy in light of the draft of the new AusAID guidelines.	Environmental Strategy implemented and EIAs and EMPs undertaken for significant activities.
5.4	M&E	M&E will be an integral part of the work activities of CAVAC. All experts will be involved. In 2011, CAVAC will conduct and commission a number of baselines and impact studies and a more extensive study on the linkage between growth and poverty.	All interventions will have impact logics and monitoring plans. General baseline surveys will have been analysed and shared.	Developed impact logics for major interventions, and conducted a three-monthly review.	Impact logics developed and a three-monthly review conducted.
5.5	Training/seminars/capacity development support	CAVAC will prepare a training needs assessment and training plan for its staff and government counterparts. It is expected that gaps in knowledge and experience need a significant investment in 2011	CAVAC and RGC staff better able to implement activities	Undertook a range of internal and external training programs for staff and counterparts.	Training in a range of important areas including methodology and financial management undertaken.
5.6	Poverty reduction	CAVAC will conduct a detailed study, based on both literature and fieldwork, that will more clearly link CAVAC's activities to poverty reduction	A study to link growth to poverty will be finalised	Undertook a poverty study and worked with representatives from AusAID Canberra and AusAID Phnom Penh to elaborate on this.	A poverty study undertaken and follow up activities designed.

ANNEX 2: PROGRESS AGAINST WORKPLAN – NARRATIVE

This annex has been developed to provide additional narrative information on some aspects of progress against the workplan. It is particularly useful for readers in developing a practical understanding of CAVAC's approach to implementation.

1.1 Component 1: Agribusiness development

Critical constraints to strategic value chains identified and developed for business action

The media market for the rural population and the rice export sector are two new areas in which CAVAC is becoming active.

The media market for the rural population is constrained by the fact that advertisers do not realise that it is a valid market. Current media habit research, on which advertisers use to decide where to place their advertising budget, is based on research focusing on the urban centres. Therefore, the interest and media use of the rural population are not considered. The existing programs are of low quality and on that basis do not merit any sponsorship.

There are no media houses that currently engage with the rural population using creative and entertaining programs based on factual contents. CAVAC's intention is that the intervention with Delight Cambodia will produce a new type of programming delivering a serious message but packaged in an entertaining program. The entertainment value is important as a significant amount of television and radio is consumed through communal watching/listening and the preference is for entertainment.

A focus on the rice export sector is also new in CAVAC. The need to respond arose based on the RGC's Rice Export Policy. The most significant constraint for the sector is that significant investment has gone into establishing suitable mills to product high quality rice for export but there is not much paddy to be processed. Currently, most mills are operating at a low capacity (about 30%). Additional investment is unlikely to materialise unless capacity of the mills is increased to a more optimal level. Currently, millers are focusing on innovative ways to compete with Vietnamese and Thai traders in sourcing more paddy from farmers. It is in this regard that CAVAC has identified a niche to support millers with sourcing mechanisms that would make them more competitive.

Agribusiness partnerships supported to innovatively address constraints

New partnerships in rice seed

To ensure that improved rice seed is available to wet season producers, CAVAC has reached agreements with three associations to demonstrate the viability of improved rice seed varieties for the

wet season. The intention of the intervention is to link wet season seed traders with the intervention to demonstrate the advantages of improved varieties to millers, traders, and farmers.

Currently, the associations are not functioning optimally. Rice seed is sourced from individual members and through traders sourcing seed from companies such as the Agriculture Quality Improvement Project (AQIP) Seed Company and others. Given that seed is currently available, the main objective is to increase demand for improved varieties. A secondary objective is to provide rice seed associations with business opportunities to enhance their commercial outlook and to increase their seed production activities. However, due to the poor performance in the existing rice seed trading system, this is not the primary focus of the intervention. Linked to this intervention is training for small rice seed producers in which rice seed associations and/or individual members can participate.

New partnerships in media

Delight Cambodia is one of the first partners whose AIF application has been approved. Delight Cambodia has previously experienced success in making agricultural programs, and would like to further expand in this niche market. However, Delight Cambodia's staff require a degree of capacity development in this area. Because of the uncertainty of financing productions, CAVAC will contribute to a pilot episode, which will be presented to potential advertisers and/or sponsors.

It is expected that the media habit research and the quality assessment, due to be conducted in the second half of 2011, will significantly contribute to the willingness of sponsors to contribute towards this production. However, to further reduce the risk for CAVAC, Delight Cambodia was required to secure a contract with a television station before CAVAC would contribute funds to the activity. Delight Cambodia was successful in acquiring a contract with South East Asia TV (SEA TV) to broadcast 52 episodes, and, as such, CAVAC will support Delight Cambodia through the AIF.

New partnership in pesticides

Nokor Thom is a Cambodian company currently attempting to deliver services with the sale of pesticides. The constraints are still the same in the pesticide market, and the RGC is very sensitive in regards to pesticides. The intervention, as described in the main text, is aimed at building the capacity of the company through a capacity building program. This program includes a course conducted by experts from of a Vietnamese institute and study tours, organised by Nokor Thom and CAVAC, to relevant sites in Vietnam and Cambodia.

Enhanced farmer services embedded within agribusiness practices

Fertiliser

Yetak, a Phnom Penh-based fertiliser company, in partnership with CAVAC, has delivered the national training for fertiliser retailers. The objective of the training was not only to build the capacity of

retailers but also to increase RGC support through a big public event. Based on favourable comments from the Minister of MAFF, this training was successful.

Now, the focus will be to address the gaps in learning using a participatory training approach. The aim is to build both the confidence of retailers in effectively disseminating information to farmers. To achieve this, a training needs assessment was conducted after the national training with representatives from Yetak. The assessment was conducted among the trained retailers to get an indication of the remaining gaps in knowledge and retailers who had not been trained to understand what they would need to learn.

The first provincial training is planned for August 2011. It will be a two-day training delivered through two modules. The first module will focus on techniques related to the use and application of fertilisers and the second will demonstrate the business case of providing information together with the sale of fertilisers.

Vegetable seed

Using the same basic model as with fertilisers, and replacing the modules on fertilisers with modules on vegetable seed, CAVAC will conduct training to inform retailers of how to answer farmers' most common questions and where to refer them to if the retailers are not able to answer their questions. By inviting vegetable seed companies to the training, CAVAC will also present an open offer to the market to build capacity of relevant companies in delivering a similar training to their retailers.

Improved availability and communication of market information between value chain stakeholders

This is still to be achieved with the media intervention just starting to get into the implementation stage. The fact that there is already a contract to broadcast the program is an optimistic sign.

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

CAVAC and TAF concluded that public private dialogues would be a more useful tool to improve market functioning. This activity therefore will be reported in the BEE section.

1.2 Component 2: Water management

Improved capacity of MOWRAM and PDWRAM to participatively design, develop, operate and maintain irrigation schemes

CAVAC continues to work closely with MOWRAM and the three PDWRAMs, providing specific technical advice as required. During the design of the canals, CAVAC staff provided on-the-job training to all PDWRAM design engineers, particularly in the area of structural engineering.

MOWRAM and PDWRAM officials actively participated in the assessment of tenders, again gaining valuable experience in this area. Prior to the commencement of the canal construction, briefings and capacity building were provided by CAVAC to all PDWRAM construction supervisors. This training covered roles and responsibilities as well as key technical aspects to ensure the quality of the finished works.

CAVAC is now conducting tests on small pump units commonly distributed and sold by retailers to farmers. The objective is to enable retailers, and the PDWRAMs, to better understand the efficiencies of the market place options so that farmers can be better informed of the most appropriate pump investments.

CAVAC has continued to provide equipment to the PDWRAMs to enable them to carry out their duties throughout the project cycle. Each PDWRAM has been provided with a total station to meet its survey needs. This equipment will increase the efficiency of survey work during the feasibility studies, design and construction.

Early discussions have continued with MOWRAM on a regional study tour, possibly to Vietnam. This will be implemented during the second half of the year.

Improved capacity of FWUCS to efficiently and effectively operate and maintain their irrigation systems

Through discussion with MOWRAM and the PDWRAMs, CAVAC has placed contracts with each PDWRAM to establish a FWUC at each of the nine rehabilitated canals. This will be followed by an extensive program of capacity building for each FWUC. While the responsibility for these tasks lies with the PDWRAMs, CAVAC will provide support and technical advice as required. Prior to commencing the work, CAVAC held a three-day training session and briefing for the nine FWUC Specialists, as nominated by the three PDWRAMs.

CAVAC is in the final stages of developing its Ownership Strategy, focusing on lessons learned from similar experience in Cambodia. The strategy will feed into the next round of feasibility studies to enhance sustainability.

CAVAC has made good progress towards implementing the SIF. Targeting Takeo for the first round of funding and working with Takeo PDWRAM, proposals were invited through public promotion of the funding opportunities. At the deadline for submissions, 14 proposals were received. Evaluation has now commenced. It is planned to implement the most promising demand-driven proposals over the next six months. A second round will be rolled out in Kampot and Kampong Thom.

Selected systems rehabilitated and transferred to effective FWUCs

Following NSC approval in February and open tender processes, contracts were placed for the construction/rehabilitation of seven canals. In addition, a 1.5-kilometer extension to the Krapum Chuk

canal in Takeo, rehabilitated by CAVAC in 2010, was also contracted. All contracts were signed in late March and early April with completion expected around the end of June, or early July, weather permitting. Contracts are between CAVAC and the contractors, with PDWRAM engaged for the day-to-day construction supervision. All contractors have made good progress although wet ground conditions in Takeo have made excavation and embankment compaction challenging.

CAVAC has also engaged an Independent Checking Engineer to provide an impartial sign off at the completion of each construction contract.

The canals rehabilitated in 2010 in Kampot and Takeo were formally transferred to the relevant PDWRAMs.

During the construction, some issues with landowners have emerged. These have been successfully resolved through further consultation, but they highlight the sensitivities around informed consent for land required for canal construction. Such processes will be improved for the next feasibility studies. Resolution of land issues has required communities, working through the local authorities, to compensate those giving up land for canal work to enable the construction to commence for the greater benefit of all farmers.

Discussions have also been held with each PDWRAM on the selection of further canals for rehabilitation in early 2012.

Improved models of water management adopted in rain fed areas

Implemented through ACIAR, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) has commenced its work on improving on-farm water management. It held its inception mission in March/April 2011, which included an initial workshop, the preparation of an agreed workplan for implementation and field visits to select suitable sites for demonstrations. This included a visit to the Prey Tonle Canal, rehabilitated by CAVAC in 2010, where discussion were held on the possibility of land leveling trials at this site, building on the CAVAC's investment. Planned activities include:

- assessment of water balance in paddy field;
- investigation into the need for weather stations;
- land leveling demonstrations; and,
- reviewing CARDI's laser leveling equipment and capacity.

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

Under a sub-contract, the Halcrow Group carried out the study of water availability in Takeo, and developed a DSS to assist in the identification and selection of canals most suitable for rehabilitation.

Its work was presented to MOWRAM and the PDWRAMs at a workshop in Takeo in April. Halcrow broadly concluded that there was sufficient water in the Mekong/ Bassac system for irrigation development for the foreseeable future, but that hydraulic capacity of some canals may be a constraint to development at some locations. Further testing and training of the DSS is required.

1.3 Component 3: Research and extension

Priority research and extension activities address constraints in selected value chains

The **Rice Germplasm Project**, led by the International Rice Research Institute (IRRI) and partnered with CARDI and GDA, has continued to screen hundreds of IRRI lines under flooded and non-flooded conditions. Survey data on rice quality was collected from rice growers, traders, and millers. A report was received forming the basis of the future strategy of this project. Twelve lines showed 'very promising' to 'high' yields under BOTH of these conditions (thus if released, allowing for greater drought resistance). These 12 lines were tested for quality at IRRI to ensure that every line meets market specifications for Cambodia and for export. These will be subjected to further multi-location trials in the wet season of 2011. Additional trials testing for flood submergence tolerance with hundreds of CARDI and IRRI lines were conducted to begin a breeding program to infuse the submergence gene into traditional lines. Thus, with drought and submergence tolerance, Cambodian rice germplasm will encompass the ability to still continue to be higher yielding but also to adjust to any global climate changes by the end of the fourth year of the project.

The **Rice Establishment Project**, led by New South Wales Industry and Investment (NSW I&I) and partnered with CARDI, GDA and the RUA, continued to analyse the baseline survey data for a report due in June 2011. Experimental data collected for wet and dry season rice cultivation was analysed and lessons learned were incorporated into a rice system experiment, which was to have begun for the early wet season rice. Unfortunately, two of the three partners were unable to begin during the early wet season. New innovative machinery from around the world has been imported to allow researchers to experiment with zero tillage, rice drill seeders, land levelers, and rotovators. Through coupling with the private sector and importers, if this equipment is demanded by growers after on-farm demonstrations, hopefully the equipment can become readily available through the private sector.

Part of this project entails releasing spatial databases coupled with an interactive software (Awhere) that allows users to operate these databases almost like a Geographic Information System (GIS) laboratory. CLEAR was released in June 2011 through 25 RGC ministerial departments, NGOs, universities, and donors. The Australian Ambassador was able to grace this launching event with over 85 attendees. This DVD will be further disseminated with training next year. Aruna Technology, a local GIS firm, was the private partner with CAVAC in launching this event.

An agritool survey was conducted by an outsourced company, which provided valuable information on agritools for potential interventions by CAVAC. Land leveling, a much in-demand technology by rice growers with irrigation, is still being investigated as a potential intervention. Additionally, a survey on the pesticide market and value chain was outsourced in 2010. The final study report from this survey was used as a basis for a CAVAC internal pesticide policy paper. Using the results from these two surveys, CAVAC will be empowered to create more knowledgeable interventions and provide the wider service providers with market information.

The **Horticulture Value Chain Project** is led by NSW I&I and partnered with CARDI, GDA and RUA. The scope of the project has been changed from vegetable germplasm development to focus on providing better information to growers and input suppliers. Post-harvest technologies will also be upscaled.

Lastly, the **On-Farm Water Management Project** (led by CSIRO and partnered with CARDI, ITC, IDE and the Technical Service Centre of MOWRAM) has been through a rigorous process of review and this project is now set to begin sometime in the second half of 2011.

Enhanced capacity of formal and informal extension providers to transfer improved technologies and information to farmers

During the past six months, nine trainers were hired (three per province). Over 900 model grower households have undertaken this three-hour focused participatory training, which emphasizes 'Whole Family'. Four NGOs, three PDAs and the Minister of MAFF have adopted both the training resources and methodologies. The training has focused on proper use of fertiliser, herbicide use and seed storage. It has been established that improvement of nutrient management and provision of balanced nutrients would increase yield by 20% given good field management. Based on current Cambodian farmer practice, nutrient management alone might increase yield by 10%. Nutrient management activities include enhancing knowledge and changing of practices by model farmers on proper use of fertilizer. With 900 model grower households trained in just 2.5 months, the impact is expected to be significant since each model grower household has 10-20 'clients' or neighbours whom it could influence. Thus, in the next months, the Program will implement precise M&E to measure the changes.

Partnership program linking researchers, extensionists, farmers and agribusiness developed and implemented

In line with the RGC's Rice Export Policy, CAVAC assisted the GDA and CARDI to re-publish materials on the effective use of fertilisers and pesticides that had been prepared in advance but were not able to be released until the release of the Policy. Thus, agribusinesses and PDAs throughout the country now have access to these materials providing clear science-based recommendations for fertiliser and pesticide use in Khmer for the first time.

The Essential Electronic Agricultural Library (TEEAL), provided by Cornell University, has been provided to CARDI and RUA. During the past six months, RUA has also upgraded its wireless network on campus for all faculty members and students. TEEAL thus is now accessible to the entire faculty and students. In addition, CARDI has put TEEAL on its server and it is now accessible to all scientists providing complete access to these 200+ journals from 1992-2009.

CAVAC has also designed an intervention to support a private call centre, Asia Master, to make better information on agriculture more accessible to farmers. A wide range of existing agricultural content that is understandable to farmers will be used. This content will be improved by agricultural experts and uploaded on the retrievable database of Asia Master. Operators will be trained on agricultural topics by the experts. CAVAC will also support a promotional campaign of the agriculture content in the call centre. The intervention was internally and externally evaluated as a suitable one to be supported by the AIF. CAVAC will support the company's content development, staff training and 50% of the promotional cost. Asia Master will also invest in staffing, other hardware of the system, and the other 50% of the promotion cost.

Discussions with the Kampot PDA team indicated to CAVAC that they fully supported holding an agricultural linkage event. Twelve agricultural input companies also showed interest. The event will be conducted with 500 participants. Those will include PDA, input companies, dealers, retailers, commune chiefs, and model farmers. The event will be conducted to encourage all participants to share information about their contacts, products and services. An advertisement for the expressions of interest in organising the event was released, and six potential event organisers attended a briefing on the event concept, expected output, and procurement procedures. The technical and financial proposals will be submitted by 8 July 2011. The event is expected to be held in late August 2011.

For CARDI website improvement, CAVAC has some difficulty in recruiting an IT person for the task as the duration of employment is too short. However, there is one company, SERVING WEB SOLUTION, who has competence in doing this. They will submit a quotation for the website task and developing a database for a help desk. The help desk will be tested internally and handed over to phone companies, call centres or PDAs if they are interested.

Budgetary support to CARDI

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

1.4 Component 4: Business enabling environment

Improved research and understanding of the enabling environment surrounding key value chains

CAVAC had a number of discussions internally and externally to assess potential solutions and ways to address policy issues surrounding the key value chains in its 2011 AWP. The issues identified include cumbersome delay in licensing for input suppliers, high transaction costs in transportation, and quality standards fertilisers and pesticides. Internally, some strategies and stakeholders were discussed and identified. Externally, CAVAC has engaged with a number of stakeholders such as DAL, DRC, DAE, PDA, PALO, and the Food and Agriculture Organization of the United Nations (FAO), etc.

Through internal and external discussions, many insights on the policy issues and ways to address those issues were collected. CAVAC has now planned to conduct some internal meetings to further discuss these insights and to map out interventions to address and/or mitigate the issues.

Increased opportunity for public private dialogue around key enabling environment issues

In addressing issues surrounding the key business enabling environment, one of CAVAC's approaches is to find ways to ensure that the public and private sectors are engaged, discuss and work together to address red tape and other challenges surrounding the business development process. TAF's Feasibility Study on public private dialogue (PPD) approach generated much discussion. CAVAC is now considering jointly piloting a new project on provincial PPD program with TAF. A draft concept note on this particular program has been submitted by TAF to CAVAC for review. This project is expected to be implemented in the three CAVAC provinces from August 2011. Through this project, a tangible result is expected to achieve by hoping that political support is leveraged at both local and national levels to address the business environment constraints hindering the business development process.

Strengthened industry representative organisations

CAVAC has scoped various options. To date effective opportunities for CAVAC to contribute to this output do not exist, however over time new opportunities may arise.

Increased use of public-private partnership investment model

The Public-Private Partnership Investment Model has not traditionally been introduced and/or implemented in rural Cambodia, especially in the agricultural development sector. CAVAC deems the public-private partnership crucial for bridging business and development gaps. CAVAC is currently promoting and testing several public-private partnership projects through research collaboration,

capacity building training, dialogue, and publication, etc. CAVAC uses these activities to engage the public and private sectors to address business and development challenges that impact the poor.

Policy Support Funding Facility

Under the Policy Support Funding Facility, CAVAC supported MOWRAM's CISIS project and six sub-projects under the Rice Value Chain Improvement Project of MAFF.

CAVAC's support to MOWRAM's CISIS project began in 2010 and was finalised early this year.

Support to MAFF began in June 2011. The six sub-agreements of the Rice Value Chain Improvement Project were signed by CAVAC and six implementing agencies. Training in funds acquittal and reporting has also been provided to each of the six agencies. Five of the six agencies have now received funding and started the project implementation.

In addition, CAVAC received five new proposals under this funding facility: three from MAFF (including one from Takeo PDA) and two from MOWRAM. These proposals have now been submitted to AusAID for review.

ANNEX 3: EXPENDITURE AGAINST WORKPLAN BUDGET

Description		Expected Milestones - 2011	Budget (USD)	Total Expenditure to Date	Total Commitments to Date	% Committed against 2011 AWP Budget
Component 1: Agribusiness			\$365,000	\$22,953	52,253	14%
1.1	Critical constraints to strategic value chains identified and developed for business action	Conduct 1 or 2 additional value chain analyses Assess the role CAVAC can play in the RGC export strategy	\$5,000	\$453		
1.2	Agribusiness partnerships supported to innovatively address constraints	Improve input markets in rice, vegetables and cassava; processing in cassava; tools in rice. Improve availability of efficient and affordable pump units	\$250,000	\$9,200		
1.3	Enhanced farmer services embedded within agribusiness practices.	All companies of 1.2 will be encouraged to add extension activities. Activities will also be addressed in 3.2	\$50,000	\$3,957		
1.4	Improved availability and communication of market information between value chain stakeholders.	CAVAC to organise a number of linking events and will encourage companies to improve communication within their network.	\$10,000	\$9,343		
1.5	Participatory planning and construction of key infrastructure to address value chain bottlenecks	Initial engagements with market managements have been discouraging. CAVAC therefore initiated public private dialogue pilots to assess potential for this approach. If successful, this initiative can be upscaled.	\$50,000	\$0		
Component 2: Irrigation and Water Management			\$3,365,000	\$1,106,952	\$2,150,430	64%
2.1	Improved capacity of MOWRAM and PDWRAM to participatively design, develop, operate and maintain irrigation schemes.	Intense collaboration with MOWRAM and PDWRAMs in the construction of up to 11 schemes and outsourcing in the detailed design of another group of schemes. Involvement in the water availability studies	\$165,000	\$108		

Description		Expected Milestones - 2011	Budget (USD)	Total Expenditure to Date	Total Commitments to Date	% Committed against 2011 AWP Budget	
2.2	Improved capacity of FWUCs to efficiently and effectively operate and maintain their irrigation systems	In 2011 CAVAC will finalise a position paper on how best to improve ownership of irrigation schemes. This will lead to a need assessment and support to all schemes where CAVAC will be involved with. CAVAC will also scale up the Supplementary Investment Fund.	Up to 13 FWUCS have received support and are better able to manage the irrigation schemes.	\$150,000	2,786		
2.3	Selected systems rehabilitated and transferred to effective FWUCs	Depending on the decision of the NSC in 2010, CAVAC will tender up to 11 schemes and commence construction in 2011. On top of that, one or two FWUCs will receive co-funding for improvements.	Up to 11 schemes transferred to FWUCs. 1 or 2 additional FWUCs supported.	\$2,900,000	\$939,457		
2.4	Improved models of water management adopted in rain fed areas	If approved by the NSC, ACIAR will initiate a large research project on water management.	Better knowledge of water management available for extension	see 3.1	\$112		
2.5	Increase use of hydrological data in the planning and management of irrigation systems	One water availability study that has been tendered in 2010 will be finalised in 2011. PDWRAMs will be trained on the use of it. If successful, one more study will be undertaken in 2011	2 water availability studies finalised. PDWRAMs trained.	\$150,000	\$164,489		
Component 3: Research and Extension				\$1,684,511	\$629,184	\$749,184	44%
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 (for separate approval by the NSC Executive Group) CARF activities will be ongoing	Details are given in the AWP main text. A summary is as follows: For the 3 approved large research projects, the baselines and trials will have been analysed leading to further research activities. The water use project will have delivered its literature research and first results from the pilots. CARF-9 will have awarded a number of research grants.	CARF \$197,808	\$418,086		

Description		Expected Milestones - 2011	Budget (USD)	Total Expenditure to Date	Total Commitments to Date	% Committed against 2011 AWP Budget
	Small additional research may be commissioned, if needed.		Pool B - approved \$683,174			
			Pool B - to be approved \$337,529			
			Small research \$92,000			
3.2	Enhanced capacity of formal and informal extension providers to transfer improved technologies and information to farmers The Cambodian Journal of Agriculture will receive support.	8 interventions that support a range of extension service providers will have started or continued, leading to improved capacity of the providers to reach farmers.	Support knowledge base development \$66,000	\$64,618		
			Material production \$54,000			
			Support providers \$55,000			
			Media assessment \$55,000			
3.3	Partnership program linking researchers, extensionists, farmers and agribusinesses developed and implemented	The extension providers from 3.2 will be linked to sources of knowledge, either directly or via linkage events.	Extension providers from 3.2 will have access to sources of knowledge	\$63,000	\$79,480	

Description		Expected Milestones - 2011		Budget (USD)	Total Expenditure to Date	Total Commitments to Date	% Committed against 2011 AWP Budget
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 including the Cambodian Journal of Agriculture	Budget support	\$81,000	\$67,000	
Impreset Account Funding to Support ACIAR Activities					\$4,326	\$4,326	
				3.1	\$547		
				3.2	\$3,671		
				3.3	\$108		
				3.4	\$0		

Description		Expected Milestones - 2011	Budget (USD)	Total Expenditure to Date	Total Commitments to Date	% Committed against 2011 AWP Budget
Component 4: Business Enabling Environment			\$452,000	\$92,274	\$289,299	64%
4.1	Improved research and understanding of the enabling environment surrounding key value chains	Additional studies and analyses of issues related to activities undertaken by CAVAC. See AWP text for details.	At least one issue addressed	\$30,000	\$0	
4.2	Increased opportunity for public private dialogue around key enabling environment issues	Integrated with 1.5		\$20,000	\$6,016	
4.3	Strengthened industry representative organisations	Activities will emerge from other activities.		\$2,000	\$0	
4.4	Increased use of Public Private Partnership investment model	Integrated with 1.5 and 2.3		see 1.5 and 2.3	\$0	
4.5	Policy Support Funding Facility	This facility will support activities initiated by MAFF / MOWRAM / AusAID with approval from the Executive Group of the NSC.	MAFF supported for rice policy activities. TWG supported with basket funding. Other RGC initiatives supported.	\$400,000	\$86,258	
Cross Component Activities			\$405,000	\$84,851	\$92,149	23%
5.1 /5.2	Gender and Disability	The gender and disability strategies will guide activities. Both will be mainstreamed in all activities. On top of this one or two dedicated interventions are likely.	Gender and disability are mainstreamed in all activities.	\$10,000	\$0	
5.3	Environment and Disaster Risk Reduction	Environmental strategy will be operational in 2011. Update and provide training on AusAID's revised Environmental Management Strategy. Undertake Environmental Impact Assessments on approximately 10 irrigation schemes	All interventions will have been screened for environmental impacts	\$100,000	\$27,072	

Description			Expected Milestones - 2011	Budget (USD)	Total Expenditure to Date	Total Commitments to Date	% Committed against 2011 AWP Budget
5.4	M&E	M&E will be an integral part of the work activities of CAVAC. All experts will be involved. In 2011, CAVAC will conduct and commission a number of baselines and impact studies and a more extensive study on the linkage between growth and poverty.	All interventions will have impact logics and monitoring plans. General baseline surveys will have been analysed and shared.	\$75,000	\$15,573		
5.5	Training/seminars/capacity development support	CAVAC will prepare a training needs assessment and training plan for its staff and government counterparts. It is expected that gaps in knowledge and experience need a significant investment in 2011	CAVAC and RGC staff better able to implement activities	\$200,000	\$13,694		
5.6	Poverty reduction	CAVAC will conduct a detailed study, based on both literature and fieldwork, that will more clearly link CAVAC's activities to poverty reduction	A study to link growth to poverty will be finalised	\$20,000	\$28,512		
Total AWP Expenditure (including ACIAR):				\$1,940,539			
Total Commitments:				\$3,337,641	Percentage committed:	53%	

ANNEX 4: RESEARCH STATUS UPDATE

Program	Main Deliverables according to Proposal for 2010 and 2011	Main Deliverables Updated in Annual Plans	Achieved (%)	Reason for Delay	Remedial Action Taken or Planned.
Improved rice establishment and productivity in Cambodia and Australia					
	Activity 1: Analyse the survey data, and evaluate opportunities for improved establishment options (including weed control, irrigation, land levelling, agronomy and machinery) by drawing on the most appropriate results from elsewhere, defining clearly the present and future rice establishment needs of the farmer, agricultural machinery trader and manufacturing communities and use the data for updating project strategy through periodic learning and change workshops publishing the results.	<p>Initial Survey data analysed by September 2010</p> <p>Project strategy devised in September 2010 to incorporate farmer defined priorities</p> <p>Results of the survey will be compiled in a report and subsequently developed for local publications and peer-reviewed journals</p>	<p>0%</p> <p>0%</p> <p>0%</p>	<p>NSW Researcher had personal tragedy</p> <p>Is dependent on baseline survey report</p> <p>Is dependent on baseline survey report</p>	<p>Plans to finish end of June 2011 and thus being able to fulfil all three.</p>
	Activity 2: The existing CARDI soil science laboratory will be improved by provision of upgraded equipment and human capacity building to improve the accuracy of soil analyses for the spatial database inclusion in the CLEAR and for agronomic and germplasm interventions for this and other research projects. This activity will be contracted to Drs. Graham and Nelly Blair.	<p>Equipment purchased, upgraded, and service initiated</p> <p>There will be human resources capacity building of soil laboratory staff in terms of skills and experience in conducting soil analyses</p>	80%	CARDI will import necessary equipment	Has been ordered
	Activity 3: Develop a beta version of the Almanac using existing data bases for release and testing among GIS user groups. Training for this project's	200 beta copies will be delivered with training on its use. Contribution of data to the CLEAR will provide an immediate acknowledgement of individuals' contributions and allow immediate dissemination of data and information	100%		

Program	Main Deliverables according to Proposal for 2010 and 2011	Main Deliverables Updated in Annual Plans	Achieved (%)	Reason for Delay	Remedial Action Taken or Planned.
	partners will enable their inclusion as 'GIS user groups.'	to others.			
	Activity 4: Populate the spatial database of CLEAR with newer data including data obtained by CAVAC in 2009 while increasing the number of users while empowering a greater number of new users through training.	Databases will increase including socioeconomic and other relevant spatial data.	100%		
	Activity 5: Release a first version of the Almanac and trial with Cambodian users, modify and release a second version while maximizing users through greater trainings.	300 users will be further trained on the expanded capabilities and databases of CLEAR Version 1.	100%		
	Activity 6: Drawing on the survey data and experience gained elsewhere (e.g. ACIAR-India, The Philippines, and IRRRI), identify the best-bet weed management approaches that take account of a weed species shift likely to occur as a result of changes in management and establishment practice. Monitor effectiveness of weed management approaches and adapt these as appropriate.	Targeted adaptive trials (20 in total –sites x season) implemented progressively on weed implications of rice establishment integrated with above trials Nature of weed problems in respect to management described; and response options developed.	80%	2 of 3 partners were unable to begin early wet season rice system trials	All partners adjusted the experimental protocols to better fit their abilities and all are ready to begin the rice system trials during the wet season
Enhancing rice germplasm development for transforming production systems in Cambodia and Australia					
	Activity 1: Conduct an ex-ante assessment of farmers' and traders' needs to determine the priorities and strategies for new germplasm development and dissemination. Secondary survey data will also be analysed.	<ul style="list-style-type: none"> Private company recruited to carry out survey. Survey questions developed in consultation with IRRRI's social science department. Historical data collected by PDA obtained 	100%	The survey report was delayed by 6 months.	July 18-19 partner meetings will be held to define the project's strategy based on survey data as well as adjust inadequacies of the partners' involvement.

Program	Main Deliverables according to Proposal for 2010 and 2011	Main Deliverables Updated in Annual Plans	Achieved (%)	Reason for Delay	Remedial Action Taken or Planned.
	Activity 2: Analyse the survey data to prioritize strategies for germplasm development, defining clearly the present and future rice germplasm needs of the farmers in different defined rice farming systems and trader communities and write up as a report to stakeholders	<ul style="list-style-type: none"> Analysis completed and recommendations made for current needs and future trends. Knowledge of different needs of farmers, consumers and traders. 	0%	Late by 6 months Will be done by July 2011	July 18-19 partner meetings will be held to define the project's strategy based on survey data as well as adjust inadequacies of the partners' involvement.
	Activity 3: Through workshops involving government, industry and researchers, identify priorities for germplasm dissemination and design a detailed strategy.	<ul style="list-style-type: none"> Workshops promoting new material held at the end of both the dry and wet seasons. 	0%	Late by 6 months Will be done by July 2011	July 18-19 partner meetings will be held to define the project's strategy based on survey data as well as adjust inadequacies of the partners' involvement.
	Activity 4: Empower PDA staff to conduct appropriate varietal extension activities.	<ul style="list-style-type: none"> Staff trained and resourced to grow demonstration trials in dry and wet seasons. 	100%	Trials began in the dry season through PDAs	
	Activity 5: Train CARDI, GDA, and PDA in conducting on-farm participatory varietal selection.	<ul style="list-style-type: none"> Staff trained to carry out participatory varietal selection (PVS). PVS data gathered, analysed and used for selection. 	100%		
	Activity 6: Development and dissemination of suitable improved germplasm with desired quality for direct-seeded aerobic rice, including those with early vigour and weed competitiveness, and drought tolerance (related agronomy work will be conducted under CSE 2009/037 on rice establishment, component 2 of MSA-FSRP).	<ul style="list-style-type: none"> Breeding lines and elite germplasm with useful genetic variability for target traits such as early vigour and drought tolerance obtained from IRRI, Australia and other centres, with suitable grain quality. At least 400 breeding lines evaluated at CARDI and other stations in Cambodia Breeding lines evaluated in multi-location tests in collaboration with PDA and through PVS 	100%		
	Activity 7: Development and dissemination of suitable improved germplasm with desired quality for rainfed lowland systems exhibiting submergence tolerance carrying the <i>Sub1</i> gene and/or drought tolerance.	<ul style="list-style-type: none"> Breeding lines received from IRRI, Australia and other centres evaluated at CARDI and other hot spots in Cambodia for quality and stress resistance (biotic and abiotic). Promising, high quality lines evaluated in multi-location trials in target rain-fed environments involving PVS 	100%		

Program	Main Deliverables according to Proposal for 2010 and 2011	Main Deliverables Updated in Annual Plans	Achieved (%)	Reason for Delay	Remedial Action Taken or Planned.
	Activity 8: Development and dissemination of suitable improved germplasm having early maturing photoperiod insensitivity with desired quality for irrigated dry-season and supplementary irrigated rice.	<ul style="list-style-type: none"> Breeding lines obtained from IRRI, Australia and other centres A set of 300 breeding lines evaluated for high yield and quality and resistant to brown plant hopper (BPH) and yellowing syndrome of viral diseases in irrigated production system Promising lines evaluated in multi-location trials in collaboration with PDA and through PVS 10 promising lines suitable for dry season cultivation identified 	100%		
	Activity 9: Identify and define the quality of the preferred traditional varieties of rice by understanding their chemical and rheological properties.	<ul style="list-style-type: none"> Knowledge of the quality traits in popular Cambodian varieties. Knowledge of the structure of the grain components and their interactions during cooking to give specific sensory qualities. Knowledge of the volatile and water-soluble compounds that define taste and aroma. 	100% 100% 100%		
	Activity 10: Upgrading current facilities and capacities at CARDI for high-throughput screening of grain quality for both early and late generation material.	<ul style="list-style-type: none"> Small sample polisher bought and installed at CARDI. Spectrophotometer bought and installed at CARDI for analysis of amylose. Instrument for physical quality selected, bought and installed at CARDI. All equipment set up, installed and calibrated. 	0%	CARDI has ordered the equipment but not able to finish purchase	Should be done by December 2011
	Activity 11: Upgrading current facilities and capacities at CARDI for MAS to	<ul style="list-style-type: none"> Equipment and chemicals purchased and marker assisted selection (MAS) laboratory facilities upgraded 		Should be finished late by 6 months	Should be done by December 2011

Program	Main Deliverables according to Proposal for 2010 and 2011	Main Deliverables Updated in Annual Plans	Achieved (%)	Reason for Delay	Remedial Action Taken or Planned.
	accelerate breeding.	<ul style="list-style-type: none"> MAS protocols adopted for submergence tolerance and aroma. Segregating populations analysed through MAS for submergence and aroma In house capacity for MAS adopted for routine screening of populations for target traits 	0%		
	Activity 12: Train CARDI staff to operate rice grain quality laboratory and analysis and MAS laboratory and adoption of marker application in breeding.	<ul style="list-style-type: none"> On the job training for two CARDI scientists at IRRI for marker application and grain quality analysis for 6 months. Three IRRI staff travel to Cambodia, install equipment and ensure CARDI staff can operate the programs. One CARDI scientist trained in Australia to adopt MAS using gene-based markers. 	0%	IRRI has not issued an invitation to the CARDI staff	Should be done by December 2011
Strengthening the Cambodian and Australian vegetable industries through adoption of improved production and postharvest practices					
Objective 1: To more fully map supply chains for tomato, chilli and leafy vegetables					
1.1	Leafy brassica, tomato and chilli supply chain survey	Report on production, market supply description and quality issues	100%		
1.2	Identify constraints in production and supply chain	Economic evaluation of benefits of interventions published	100%		
1.3	Market and farmer surveys on disease management	Published paper on findings from survey	0%	6 month delay	Should be finished by October 2011
Objective 2: To improve product quality and supply through delivery of technical packages on production, disease management and supply chain management					
2.1	Consult with supply chain partners	Report on focus groups and stakeholder workshop	100%		
2.2	Trial low cost postharvest technologies and cost benefit studies	Suite of recommendations on appropriate low cost technologies	100%		
2.8	Convene national vegetable conference.	Proceedings from the 1st National Vegetable Conference	0%	Delayed 1.5 years	Planned in March 2012
Objective 3: To build capacity of research and extension staff in vegetable production and postharvest research, and plant pathology.					

Program	Main Deliverables according to Proposal for 2010 and 2011	Main Deliverables Updated in Annual Plans	Achieved (%)	Reason for Delay	Remedial Action Taken or Planned.
3.1	Conduct "train the trainer" courses for project, CAVAC, NGO and provincial staff in production and postharvest technologies.	Completion of TOT courses and delivery of farmers workshops.	100%		
3.2	Establish field trials for production technologies including drip irrigation, mulches and raised beds in association with FFS sites	Farmer field schools held in conjunction with field trials.	100%		
3.3	Development of postgraduate study and external funding applications	Scholarship applications and other external funding successful	100%		
3.4	Conduct field surveys in target provinces to determine disease constraints over two growing seasons	1) Map major diseases in target provinces	100%		
		2) Deliver base-line information on disease prevalence.			
		3) GDA, and RUA collaborators capable of conducting disease surveys			
3.5	Undertake farmer surveys to determine baseline level of disease recognition and management	1) Identification of willing participants	100%		
		2) Collated survey results			
3.6	Workshop 1 – Field monitoring for plant disease	1) Deliver workshop and training at RUA.	100%		
		2) Attendance by CARDI and GDA staff			
		3) Deliver course manual for inclusion for RUA curriculum			
		4) RUA staff competent to present material independently			
3.7	Workshop 2 – Plant pathogenic organisms and diagnostics	1) Deliver workshop and training at RUA.	100%		
		2) Attendance by CARDI and GDA staff			
		3) Deliver course manual for inclusion for RUA curriculum			
		4) RUA staff competent to present material independently			
3.8	Workshop 3 - Disease management and research skills	1) Deliver workshop and training at RUA.	100%		
		2) Attendance by CARDI and GDA staff			
		3) Deliver course manual for inclusion for RUA curriculum			
		4) RUA staff competent to present material independently			
Objective 4: To better understand gaps in vegetable extension material and produce appropriate suite of materials suitable for use with farmers and supply chain participants.					

Program	Main Deliverables according to Proposal for 2010 and 2011	Main Deliverables Updated in Annual Plans	Achieved (%)	Reason for Delay	Remedial Action Taken or Planned.
4.3	Collation of existing vegetable information resources in Cambodia	Database of existing vegetable resources produced and distributed	100%		
4.4	Placement of an Australian Youth Ambassador for Development (AYAD) in Cambodia to assist with publications and communication	Successful recruitment of AYAD and completion of assignment	100%		
Improved irrigation water management to increase rice productivity in Cambodia					
The project was unable to begin due to delay in signing MOU by CSIRO			0%		Assuming MOU with MAFF will be signed shortly. They will begin work in July and a joint meeting in August

CARF Projects

No	Project No	Name	Project Title	Duration	Starting Date	Location of Project Activities				Comments
						Kampong Thom	Kampot	Takeo	Other Provinces	
CARF ROUND (6) 2008										
1	APHEDA-193	Thai Chheng Mao	Freshwater pond fish farming	9 Months	Mar-08					Completed
2	CARDI-162	EI Sotheary	CARDI's released rice varieties	2 years	Apr-08					Completed
3	CARDI-163	Som Bunna	Technique and economic impact	3 years	Jun-08	Yes	No	Yes		
4	CARDI-164	Lor Bunna	Reduction of losses of rice grain	3 years	Mar-08				Kampong Cham, Kandal	
5	CARDI-170	Seng Vang	Soil nutrient management	3 years	Mar-08	No	Yes	Yes		
6	DAALI-183	Ing Sina	Maize varieties in rice based ecosystem	3 years	Dec-08	No	No	Yes		
7	PLNSA-187	Din Kim Srean	Cattle production	3 years	May-08				PLNSA, Kandal	
8	RUA-171	Seng Mom	Leucaena as forage	3 years	Apr-08				Kandal	Completed
9	RUA-175	Huot Chanthy	Soy milk	2.5 years	Mar-08					Terminated

No	Project No	Name	Project Title	Duration	Starting	Location of Project Activities			Comments	
10	RUA-176	Cheang Hong	Mushroom production technique	2 years	Jun-08				Svay Rieng, Prey Veng	Completed
11	RUA-181	Buntong Borarin	Fresh orange	2 years	Jun-08					Completed
CARF ROUND (7) 2009										
1	CARDI-206	S Sophany	Selection of waxy maize	3 years	Jun-09	Yes	No	No		
2	CARDI-211	Khay Sathya	Pest management in tomato	3 years	Jan-09	Yes	No	No		
3	CARDI-222	Thun Vathany	Increasing banana production	3 years	Jan-10	No	Yes	No		
4	CEDAC-205	Y Soksophors	Rice market chain	6 Months	Jul-09	No	Yes	Yes		Completed
5	GDA-212	Kong Kea	Seeding method and seed preservation	3 years	Jun-09	Yes	No	Yes		
6	GDA-223	Mean Chetna	Fruit fly in mango crops	3 years	Jan-10	No	Yes	Yes		
7	GDA-224	Ly Sereivuth	Brown plant hopper management	3 years	Jun-09	No	Yes	Yes		
8	GRET-215	Meas Chanty	Black pepper in Kampot	1 years	Jun-09	No	Yes	No		Completed
9	IDE-207	Sieng Kan	On-farm irrigation	2 years	Jun-09	Yes	No	No	Svay Rieng, Prey Veng	Completed
10	RUA-221	Kan Ponhrith	Stung Chinit irrigation	1 year	Jun-09	Yes	No	No		Completed
11	RUA-225	Seng Mom	Forage legume for pigs	2 years	Jul-09	No	No	Yes		Completed
CARF ROUND (8) 2010										
1	GERES-249	Nguon Hong	Establishment of reference alley-cropping systems (integrated with fuelwood trees and local cash crops) in Tramkork, Takeo and Samaky Meanchey, Kampong Chhnang	3 years	June-10	No	No	Yes	Kampong Chhnang	
2	PLNSA-229	Din Kim Srean	Improvement of forages-based beef cattle production through private sector partnerships in Kampot and Takeo	2 years	May-10	No	Yes	Yes		
3	RUA-244	Tho Kim Eang	Epidemiology and Control of Phytophthora Palmivora Butler in durian in the coastal areas of Cambodia	1.5 years	May-10	No	Yes	No		

No	Project No	Name	Project Title	Duration	Starting	Location of Project Activities				Comments
4	RUA-245	Chuong Sophal	A study of occurrence and potential impact of plant-parasitic nematodes on rice and vegetable yields in different rice ecosystems in four Cambodian provinces	3 years	June-10	Yes	Yes	Yes	Kandal	
	CARF ROUND (9) 2011									
1	CARDI-273	Ty Channa	Collecting plant genetics resources for food and agriculture	3 years	1-Jun-11	No	No	No	Ratanak Kiri, Mondul Kiri	
2	CARDI-274	Lim Vandy	Improved productivity of aromatic rice varieties with fertilizer best practice in rainfed and irrigated lowland rice cropping system	3 years	1-Jun-11	No	Yes	Yes		
3	CelAgrid-281	Seng Sokerya	The use of betel nut, neem, and cassava leaves as helminth control agents to improve the production of village chickens in Cambodia	2 years	1-Jul-11	No	No	Yes	Kandal	
4	KCNSA-227	Tith Bunchhoeun	Effect of Nitrogen dose and seedling number per hill on the growth and yield on prateah lang soil type, Kampong Thom	3 years	1-Jun-11	Yes	No	No		
5	MCU-264	Kong Vannak	Postharvest handling, storage, and processing of cassava roots in Cambodia	3 years	1-Jun-11	Yes	No	No	Banteay Meanchey	
6	MCU-267 (student)	Kim Chinda	The usage nitrites and/or nitrates and vacuum packaging in sausage at Kampong Svay and Stung Sen in Kampong Thom	0.5 years	1-Jun-11	Yes	No	No	Banteay Meanchey	
7	GDA-252	Kong Kea	The effectiveness of sulfur fertilizer application on rice production in irrigated intensified cropping area	3 years	1-Jun-11	Yes	Yes	Yes		
8	GDA-268	So Thavarith	Study on the infestation of cassava mealy bug and its biological control	3 years	1-Jun-11	Yes	No	No	Kampong Cham	

No	Project No	Name	Project Title	Duration	Starting	Location of Project Activities			Comments
9	PDA-KCH-254	Kim Chantha	Comparing growth and yield of rice in alternate aerated and anaerated conditions on Prey Khmer soil and Kampong Seam soil	3 years	1-Oct-11	Yes	No	No	Kampong Cham
10	RUA-256	Hok Sen Samphea	Enhancing pond productivity for small scale aquaculture by introduction of periphyton	2 years	1-Jun-11	No	Yes	No	
11	RUA-261	Chuong Sophal	A study of weed damage potential on rice yield in different rice ecosystems in Cambodia	3 years	1-Jun-11	Yes	Yes	Yes	
12	RUA-266	Kong Thong	Making tropical fruit wines for rural households to generate income	1.8 years	1-Jun-11	No	No	Yes	Kampong Cham

Abbreviations:

APHEDA	Australian People for Health, Education and Development Abroad
CARDI	Cambodian Agricultural Research and Development Institute
CEDAC	Cambodian Center for Study and Development in Agriculture
CelAgrid	Centre for Livestock and Agriculture Development
DAALI	Department of Agronomy and Agricultural Land Improvement (Currently General Directorate of Agriculture)
GDA	General Directorate of Agriculture
GERES	Groupe Energies Renouvelables, Environnement et Solidarités
GRET	Groupe de Recherche et d'Echanges Technologiques
IDE	International Development Enterprises
KCNSA	Kampong Cham National School of Agriculture
MCU	Mean Chey University
PDA-KCH	Provincial Department of Agriculture - Kampong Cham
PLNSA	Prek Leap National School of Agriculture
RUA	Royal University of Agriculture

ANNEX 5: CAVAC AND THE SAW LOGFRAME

	Indicators	CAVAC Contribution
<p>Overall Goal:</p> <p>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 small and medium enterprises (SMEs) 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 overlap entirely. As these are high level impacts, results can not be expected within the first two years of operation. CAVAC will contribute to indicators 1, 2 and 5. Additionally, the Program is currently in the process of making a good contribution to indicator 9. Two canals were rehabilitated in 2010 and seven other canals are being rehabilitated. Once the rehabilitation is complete, more than 10,000 ha of farming land will receive 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 continued to support MOWRAM with the CISIS exercise. This exercise was completed earlier this year. The NSC also approved MAFF's Rice Value Chain Improvement Project proposal. The overarching agreement and the agreements between CAVAC and the six implementing agencies have been signed and first funding packages have been paid. CAVAC has now received five new proposals from MAFF, MOWRAM, and Takeo PDA. These new proposals have been submitted to AusAID for review.</p>
<p>Output B (Institutional Capacity Building and</p>	<ul style="list-style-type: none"> • Facilities and equipment are improved; • An increase in performance and output in organisational capacity in planning, 	<p>Global Positioning System (GPS) units have been provided to MOWRAM through the CISIS project.</p>

	Indicators	CAVAC Contribution
<p>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>	<p>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;</p> <ul style="list-style-type: none"> • Information systems are implemented; • 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>Total Stations have been lended to PDWRAMs.</p> <p>CAVAC has continued tp provide on-going capacity building support for MOWRAM, MAFF, PDWRAM,and PDA officials.</p>
<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; • Research, Education and Economic (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. The fourth large research project, on-farm water management, is set to begin sometime this year. 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 	<p>CAVAC is implementing seven canal rehabilitation projects that provide reliable water supply for farmers to increase agricultural production and so to improve food security.</p>

	Indicators	CAVAC Contribution
	<ul style="list-style-type: none"> • Food security concepts are integrated into development programs and policy. 	
<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>Working with provincial authorities, CAVAC has planned and is implementing seven canal rehabilitation projects in three provinces. By August 2011, CAVAC will have rehabilitated nine canals, opening up approximately 15,000 ha for double and triple paddy production. Further studies have planned for 2012 canal work.</p> <p>A Water Availability Study was carried out in Takeo to assess the available water for increasing irrigation development.</p> <p>CAVAC has been working with provincial authorities to establish and train FWUCs.</p>

	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 continued to assess input markets required and improved existing relationships and initiated new relationships with a number of input companies to improve agricultural efficiency.</p>

ANNEX 6: STAFFING UPDATE

The following table indicates the current status of staffing for CAVAC as against the positions identified in the contract between AusAID and CARDNO. It also shows the AusAID appointed Team Leader and positions filled by ACIAR.

Table 1: 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	
Office Manager / Program Officer	Lim Chakrya	Full Term of CAVAC	
Finance Officer (provincial)	Ly Visakha	Full Term of CAVAC	Commencing 15 August
IT Officer	Kim Chanthoeun	Full Term of CAVAC	Commencing 15 August
Translator	Cheavong Sokearith	Full Term of CAVAC	Commencing 25 July
Environmental Specialist		Full Term of CAVAC	Interviewed – no suitable candidate
Gender Specialist	Thea Sophy	Full Term of CAVAC	Commencing 1 August
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	
Horticultural Value Chain Development Specialist	Ty Sopheavy	Full Term of CAVAC	
Provincial Agribusiness Coordinator 1	Saint Srey / Yong	Full Term of CAVAC	Srey has resigned. Sorphea will

Position	Name	Period of Engagement	Notes
	Sorphea		commence 1 August.
Provincial Agribusiness Coordinator 2	Ping Sodavy	Full Term of CAVAC	
Provincial Agribusiness Coordinator 3	Ouk Nimul	Full Term of CAVAC	To commence 4 July
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	Advertised / interviewed twice. No suitable candidates
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	
BEE			
Business Enabling Environment Specialist	Kim Sangha	Full Term of CAVAC	
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 Riquen	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, eight program drivers and two part time cleaners have been engaged under the reimbursable budget.