

# Cambodia Agricultural Value Chain Program (CAVAC)

## CAVAC 2013 Annual Work Plan



**Final submission, January 2013, National Steering Committee recommendations included regarding secondary canals, feasibility studies and canal 87. List of canals for construction in 2013 updated.**

## **Continuous learning**

*Market development programs operate in a very complex socio-economic reality; a reality that is driven by human behaviour and economic incentives; by imperfect information and where small decisions on one side of the world can have major impacts on the other side. In this reality it is necessary to continuously monitor and adjust. Throughout its portfolio of activities CAVAC has reached a stage where its ability to understand the results of its activities and its ability to adjust will determine if CAVAC will become successful. This process of learning and adjusting has started in 2012, but will be the main theme for 2013.*

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## Abbreviations and Acronyms

ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AFD	Agence Française de Développement
AusAID	Australian Agency for International Development
AWP	Annual Work Plan
CARDI	Cambodian Agricultural Research and Development Institute
CAVAC	Cambodia Agricultural Value Chain Program
DTL	Deputy Team Leader
FCRMA	Federation of Cambodian Rice Miller Associations
FWUC	Farmer Water User Community
GDA	General Directorate of Agriculture
IFC	International Finance Corporation
JICA	Japan International Cooperation Agency
KAP	Knowledge, Attitude and Practice
MAFF	Ministry of Agriculture, Forestry and Fisheries
MOWRAM	Ministry of Water Resources and Meteorology
M&E	Monitoring and Evaluation
MTR	Mid-term Review
NSC	National Steering Committee
O&M	Operation and Maintenance
PCC	Provincial Coordination Committee
PDA	Provincial Department of Agriculture
PDWRAM	Provincial Department of Water Resources and Meteorology
RGC	Royal Government of Cambodia
SAW	Strategy for Agriculture and Water
SIF	Supplementary Investment Fund
TAF	The Asia Foundation
USAID	United States Agency for International Development
US\$	United States Dollar

## 1 INTRODUCTION

The Cambodia Agricultural Value Chain Program (CAVAC) Annual Work Plan (AWP) 2013 is presented for the 12-month period from 1 January 2013 – 31 December 2013.

This AWP was developed in collaboration with key counterparts and stakeholders. The Plan was also influenced by the findings of the independent Mid-Term Review (MTR) in March 2012.

The following plan details: a short analysis of progress so far and a direction for 2013; implementation strategies; a description of the major activities planned for 2013; and a summary of expected results.

The AWP 2013, and its accompanying annexes, is provided to the National Steering Committee (NSC) for the information, review, and approval.

## 2 PROGRAM DESCRIPTION

CAVAC aims to reduce poverty by increasing farmer incomes in the rice-based farming systems of Cambodia through accelerating the value of agricultural production. The Program is implemented through four components: Agribusiness Development; Water Management; Research and Extension; and Business Enabling Environment. These all work closely together with staff working across a number of components. Responsibility for the implementation of the Program is shared between the Team Leader and Cardno Emerging Markets (Australia) Pty Ltd (the Operational Contractor) under the direction of the Australian Agency for International Development (AusAID) and the Royal Government of Cambodia (RGC).

From 2013, AusAID and the Australian Centre for International Agricultural Research (ACIAR) have decided to rationalise the implementation structures with regards to Research and Extension activities. ACIAR and CAVAC will continue to exchange information and collaborate where possible. The four large Research projects will be formally managed by ACIAR. The same will be the case for the Cambodian Agricultural Research Fund. The Extension activities, for which ACIAR was responsible, will be fully integrated into the CAVAC Program and will be managed by Cardno.

Both the Sector Monitoring Group (SMG) in November 2011 and the MTR team in March 2012 have recommended a 1.5-year extension of the present phase of CAVAC. This AWP 2013 report is based on the assumption that an extension will be granted.

### Box 1: Different Roles, One Goal

The Policy Paper on the Promotion of Paddy Production and Rice Export has become the common roadmap for the RGC and CAVAC activities. Within this framework, it was agreed that the Provincial Departments of Agriculture (PDAs) would take the lead in a number of provincial priorities including the establishment of cooperatives and activities related to the introduction of improved varieties and related farming techniques and that CAVAC would take the lead in other activities, especially those related to agribusiness.

### 2.1 Government Priorities

*The Policy Paper on the Promotion of Paddy Production and Rice Export*, as approved by the Council of Ministers on 25 July 2010, has become a guiding document for the Program. The clear priorities of the RGC to increase yields in paddy production and to promote the export of rice, with a package of support, will continue to be at the heart of CAVAC's activities in 2013. Improved access to irrigation,

better inputs including seed, innovation, better farmer knowledge and support to export are the focus of the Policy Paper and will remain the focus of CAVAC throughout the coming year. The Policy Paper is also well aligned with the Strategy for Agriculture and Water (SAW).

In 2012, the Program has directly funded priority activities under the Policy Paper. The activities are being executed by the Provincial Departments of Agriculture (PDAs) of the three CAVAC target provinces. CAVAC proposes to continue the support to government priorities through the PDAs in 2013.

## 2.2 Mid-Term Review, its Findings and its Recommendations

AusAID commissioned an MTR in March 2012 for which CAVAC produced a status report.

The MTR team expressed confidence that CAVAC was on the right track, effective management structures were in place, and that it was likely that CAVAC would reach its goals. The MTR team also warned against complacency. The team stated that CAVAC still had a long way to go, that internal learning needed to remain a core feature of the Program, and that CAVAC needed to stay focused. The team recommended an extension of the present phase to consolidate gains in agribusiness and extension activities and to allow for another cycle of irrigation investments.

The MTR team reviewed CAVAC's internal projections of potential impact and confirmed that the following figures were realistic.

- > CAVAC may influence the lives of 160,000 households in the three provinces it operates in. This number could increase if potential outreach in other provinces is included.
- > CAVAC's activities in irrigation are likely to allow 32,000 hectares to be irrigated.
- > The average increase in yields for the 160,000 households could be as high as 10%.

## 2.3 Key Elements of CAVAC's Methodology

As the main selection and design criteria for its interventions, CAVAC uses international best practice to achieve maximum *value-for-money* and *sustainability of farmer support systems*. The Program promotes better functioning of support systems, such as the seed market, the rice export system or embedded information in the value chain. The list of the support systems in which CAVAC is active is broad (see Box 2).

The focus on poverty and the pre-condition to be fair and neutral further sharpens the design and implementation of our activities. It also forms the basis for applying principles related to cross-cutting issues such as the environment, gender and disability across all CAVAC activities. When working with the private sector CAVAC is careful to avoid the negative side effects and unfair competition within the market.

### Box 2: CAVAC's Support Markets

#### **Input markets**

Seeds  
Fertilisers  
Pesticides

#### **Agro-tools**

Pumps  
Levellers

#### **Physical market places Knowledge**

Government as a source  
Embedded information  
Model farmers  
Associations and traders  
Wider market systems  
Media

#### **Irrigation**

New schemes  
Ownership of existing canals (SIF)  
Government overview role

#### **Business Enabling Environment**

Government as improvers  
Civil / private sector as improvers

#### **Non paddy markets**

Rice export trading and processing  
Vegetable input markets



As explained more extensively in previous AWP, CAVAC intends to continue applying its operating principles as follows:

- > The main aim of the Program is poverty reduction through improved rice-based farming;
- > The Program is guided by the priorities of the RGC;
- > The focus is on improving Cambodian farmer support systems where sustainability of the farmer support system is a prerequisite;
- > Investments are judged using value-for-money criteria;
- > Activities can only take place while avoiding or limiting negative impacts: on people, on markets and on the environment; and
- > Gender and disability criteria are integrated in the designs of all CAVAC activities.

## **2.4 2013 Main Focuses**

### **2.4.1 Continuation of Initiated Activities**

In March 2013, CAVAC will enter its fourth full year of operation. As the MTR team confirmed, CAVAC has a sound base of activities and therefore 2013 will be, more than anything, a continuation of activities from 2012.

Major research activities will be managed by ACIAR directly. They will remain part of Australian aid to Cambodia, but no longer part of CAVAC's scope. However, CAVAC will implement a program of small research grants called the Action Research Fund. Further information on this fund can be found in Section 3.3.

The Agribusiness activities will remain focused on rice and vegetables. In the input markets (seed, fertiliser, pesticides and agro-tools), CAVAC will remain active in improving availability, quality and information. In the export of rice, CAVAC will continue to support initiatives with high potential, which can become a model for future activities. It will also support export associations within the private sector through the Federation of Cambodian Rice Miller Associations (FCRMA).

CAVAC extension activities have recently merged with the agribusiness activities. CAVAC focuses on availability of information to farmers and how farmers use this for innovation. It will continue to stimulate the early adopters (the innovators and model farmers) to change their practices and influence others. CAVAC will also continue to support the RGC in improving its capacity to deliver extension services.

CAVAC found its niche in irrigation and water management by supporting small and relatively simple irrigation canals. Several of the 2011 canals still have shortcomings and the 2012 canals are not yet fully completed. CAVAC is committed to provide further support to these schemes until they are fully operational. This will require some additional investments in 2013.

From the start of the Program, the Australian government has placed a high importance on the sustainability of the irrigation schemes. Sustainability can only be achieved by active participation of farmers, farmer organisations like the Farmer Water User Communities (FWUCs), local and provincial government partners, and the private sector. Three dedicated Agricultural Advisors will engage with all persons involved to build a strong alliance for genuine sustainability.

The Business Enabling Environment activities have been focused on stimulating public private dialogue where CAVAC initiated a partnership with The Asia Foundation (TAF). Three large provincial consultation meetings formed a promising basis for further activities. The Policy Support Funding Facility will remain in place in 2013, though there have not been many requests in 2012.

After initially searching for the right approach, gender principles have been implemented across all components of CAVAC. Male and female farmers access services differently and by applying a gender assessment to all interventions, CAVAC can improve access for both men and women. Not only is this the case when male and female farmers buy inputs or receive advice but it is also a focus of our support to representative bodies like the FWUCs. CAVAC will continue to scan all activities for potential negative impact on either men or women through its monitoring system and will continue to use a household typology study to explain how men and women benefit differently from CAVAC's activities. A similar approach will continue to be applied for people with a disability.

Environmental compliance will continue to be fully integrated into all CAVAC's activities.

#### 2.4.2 Focus

One of the core messages from the MTR team was to remain focused. In practice, this means that CAVAC should not enter into new value chains and markets, and that it should continue to build on and improve its present activities and resist the temptation to add many new, exciting things to the workplan. Remaining focused also means that CAVAC will continue the shift from provider support to system support, as explained in the previous AWP.

#### 2.4.3 Continuous Learning

The MTR team saw a portfolio of promising activities within CAVAC, but most of them will need adjustments. As explained in Box 3, the need for adjustment is not a failure in the design, but the nature of Market Development programs like CAVAC. In its first two years CAVAC managed to get a good portfolio off the ground. The second part of 2012 and 2013 will determine if CAVAC can turn this portfolio into good interventions. In 2014 and 2015 the focus can then shift to scale and to consolidating sustainability.

#### Box 3: Planning and Market Development

Programs that help the private sector to improve services to farmers always find it hard to explain what they will be doing and what will happen. One reason may be that development organisations generally do not have much experience in working effectively with private companies. However, the main reason is that market development programs try to influence very complex socio-economic systems. Those systems are ruled by complex human behavior of individuals, groups of individuals and their interactions; by economic incentives; by imperfect information and systems where small changes in one part of the world can have large consequences in other parts. In this inherently unpredictable world, companies make investment plans but realise that nothing ever goes according to plan. A plan is just a first step in a process. Small and large businesses constantly adapt and accept failure as an ingredient of success.

Supporting companies and other market actors is potentially a very strong way to create opportunities for the poor. Helping companies with knowledge and risk sharing or by bringing players together can offer great value for money, but only when we play by the rules of the game. These rules are: that we can never take over the responsibilities of the market players; that we have to accept that success and failure are the two legs we stand on; and that we cannot predict or control the system. No one can. We continuously have to observe, learn and adjust.

A part of the world we work in is relatively simple: We know how much fertiliser a paddy needs and we know how to dig a canal or build a bridge. However, the real challenge lies in predicting the world around the input. How is constantly adjusted information on fertiliser use reaching the farmers and how can we get the management and maintenance of irrigation schemes working?

Judge market development programs not by their ability to plan, but by their ability to adjust.

## 2.5 Consultations

With the majority of activities taking place in the provinces, CAVAC's interaction with the RGC is not only with the Ministry of Agriculture, Forestry and Fisheries (MAFF) and the Ministry of Water Resources and Meteorology (MOWRAM) in Phnom Penh but also more and more with the PDAs and the Provincial Departments of Water Resources and Meteorology (PDWRAMs) in the three target provinces. The first step in drafting the 2013 AWP was therefore a round of consultations with the PDA and PDWRAM Directors and the Chairs of the Provincial Coordination Committees (PCCs). Further consultation with the PDAs has taken place in Phnom Penh.

### Box 4: A Different Relationship, Different Contracts

CAVAC is a bilateral program where AusAID contributes 100% of the funds. This requires adherence to certain procedures and influences the way CAVAC can support its public and private partners. These procedures differ from the ones applied on multilateral loan programs, such as activities funded by the Asian Development Bank (ADB) and the European Union (EU).

CAVAC has to comply with both the Cambodian and Australian legislation, where the Commonwealth Procurement Rules and the Commonwealth Grant Guidelines are two central documents. The nature of the initial grant contracts between CAVAC and its partners formed a good basis to comply with the legal requirements, but did not foster the true spirit of a partnership. In consultation with AusAID, CAVAC has initiated a new type of contracts, where the accountability for the proper use of funds is shifted from focusing on the use of inputs to measuring the delivery of outputs. These 'output-based-contracts' are expected to better reflect the true nature of partnership; one that is based on mutual respect and a focus on impact.

### Summary of consultations with PDWRAMs

The following issues were consistent throughout consultations with PDWRAMs in Kampot, Kampong Thom and Takeo:

- > In general there is agreement on the type of schemes and the selection criteria used to determine the validity of schemes.
- > A number of schemes that have been constructed in 2011 and 2012 need additional support to make them fully operational. CAVAC is committed to doing this.
- > All Directors raised the need for continued capacity support.
- > The PDWRAMs need more information on the financial status of the implementation.
- > CAVAC and the PDWRAMs see a need to adjust the tender process to reduce the risk of low performing contractors.
- > Deleting some features of the initial designs or changing some of the features, need to be better discussed with the PDWRAMs.

### Summary of consultations with PDAs

The main focus of the consultation meetings with PDAs was establishing the priorities of the PDAs to implement elements of the Paddy Production and Rice Export Policy.

Most of the proposed activities fit well in CAVAC's approach to develop sustainable systems. This included the establishment of cooperatives, training in rice production, capacity building of the RGC and introduction of new rice varieties.

In line with the Paddy Production and Rice Export Policy, the PDAs also suggested direct support to farmers through farmer field schools, farmer marketing schools and post-harvest management

training. It was discussed that because of its temporary nature CAVAC could support capacity improvements in the RGC agricultural systems, like the government extension systems, but should not take over the role of the government in executing or financing these activities. It was agreed that CAVAC would request the NSC to consider the direct financing of these activities.

All PDAs expressed interest in an integrated farming pilot that was likely to be supported by the on-farm water management research program or could be supported as action research.

Contractual arrangements remain an area of some concern. The new output-based contracts have caused some uncertainties, which will be followed up with meetings to discuss the changes with PDA Directors.

## 2.6 Timeline for 2013 Implementation

**Table 1: Timeline for 2013 Implementation**

Month	Activity
January / February	Start construction of approved irrigation schemes. Submission of the six-monthly report Large internal Monitoring and Evaluation (M&E) review
February	PCC meetings for AWP 2013
June	Large internal M&E review
July	Submission of the six-monthly report
August	Provincial and national consultations for AWP 2014 PCC Meetings Initial selection of irrigation schemes for 2014 construction
October	Submission of AWP 2014
November	NSC Meeting

### 3 KEY ACTIVITIES FOR 2013

#### 3.1 Component 1: Agribusiness Development

This component aims to ensure that agribusiness contributes to the strengthening of selected value chains and equitably shares benefits. Throughout 2013, CAVAC will ensure:

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

**Agribusiness partnerships supported to innovatively address constraints.**

**Enhanced farmer services embedded within agribusiness practices.**

**Improved availability and communication of market information between value chain stakeholders.**

##### 3.1.1 2013 Work Program

CAVAC's Agribusiness Component has three types of activities: 1) Activities that are led by PDAs or the General Directorate of Agriculture (GDA) based on their own priorities; 2) Activities that are joint priorities between PDAs and CAVAC which are jointly implemented; and 3) Activities that are led by CAVAC.

#### Agribusiness Work on the Priority Areas of PDAs and GDA

In 2012, CAVAC experimented with output-based contracts expecting it to lead to a professional relationship with public partners.

#### Activities with PDAs

Key activities with PDAs in 2012 included: the establishment of 13 cooperatives across the three provinces; support to the laser land levelling pilot project in Kampot; field demonstrations; and field days. Please refer to the table below for a complete list.

**Table 2: List of 2012 activities led by PDAs**

No.	Activity	PDA Kampong Thom	PDA Takeo	PDA Kampot
1	Establishing Agricultural Cooperatives (ACs)	X	X	X
2	Field demonstrations of early rice varieties		X	
3	Field demonstrations of medium rice varieties	X	X	X
4	Field demonstrations of late rice varieties	X	X	
5	Field days		X	
6	Farmer Integrated Pest Management Farmers' Field Schools		X	X
7	Rice seed production training		X	
8	Help desk <sup>1</sup>	X	X	X

<sup>1</sup> The help desk activity is discussed in the extension section.

No.	Activity	PDA Kampong Thom	PDA Takeo	PDA Kampot
9	Pilot project-land levelling			X
10	Farmer meeting		X	
11	Pesticide law workshop		X	
12	Cassava study	X		
13	Post-harvest training	X	X	X
14	Agricultural Cooperative capacity building training	X	X	
15	Retailers Training <sup>2</sup>	X	X	X
16	Field demonstration of dry season rice varieties			

At the time of writing this AWP, these activities are still being executed and not all activities have been contracted.

In 2012, CAVAC has been working with the PDAs on the priorities they have identified. It was agreed that these priorities needed to be in the context of *The Policy Paper on the Promotion of Paddy Production and Rice Export*.

All PDAs requested similar support in 2013; therefore most of the activities in the plan for 2012 will be repeated in 2013 with some new activities added, as can be seen in the following table:

**Table 3: Priority areas for the PDAs**

Priority Area	Kampot PDA	Takeo PDA	Kampong Thom PDA
Laser land levelling	X	X	X
Technique / technology demonstrations in rice	X	X	X
Agricultural Cooperative establishment and support	X	X	X
Post-harvest activities in rice	X	X	
Extension methodology related activities / linking	X	X	X
Capacity building for PDA staff	X	X	X
Vegetable related activities	X	X	X
Other	X	X	

### **Activities with GDA**

CAVAC has been actively working with GDA to plan support in the development of a major pest control manual and the implementation of a rice value chain improvement project. The agreements with GDA on these two activities are expected to be signed in the last quarter of 2012. Some activities will still fall under the 2012 AWP, but most will be part of the 2013 AWP.

<sup>2</sup> The CAVAC and PDA joint retailer training activity is represented in the below section with the CAVAC priority areas for historic reasons.

## CAVAC-Led Activities

In 2012, the Agribusiness Component has been working on the partnerships and interventions in all support markets. Good progress has been made and almost all support markets have active agreements. All agreements have been designed on the basis of addressing the constraints as identified in the original CAVAC strategies.

CAVAC's interventions in 2012 included fertiliser and vegetable seed retailer training programs. It is now important to learn from these training activities to ensure that the next round of activities benefit from previous experience. It is essential for CAVAC to always remain a dynamic entrepreneurial organisation, with learning as its core, to ensure that impact reaches farmers.

Implementation in 2013 will start by supporting around 25 active interventions representing more than 30 partners varying from companies to associations to PDAs. CAVAC's team needs to work to ensure that these partnerships lead to successful outcomes and sustainable impact. In 2013 CAVAC will build on current progress by adding more partnerships and working on implementing learning as a core organisational value.

An overview of current activities / interventions:

### Rice Seed

- > Agreement with Mr Iv Vanna on establishing a rice seed production company.  
CAVAC has been working with Mr Iv Vanna since 2011. CAVAC's initial support to this partner was on rice seed production training and rice seed business plan development. CAVAC's support in 2011 ended after successful completion of the business plan.  
In the first half of 2012, CAVAC was working actively with Mr Iv Vanna's company, Srov Pouch Meas, Co, Ltd. (SPM) to plan further support to implement the business plan developed in 2011. However, issues regarding land tenure have recently prevented SPM from further implementation. SPM has requested CAVAC to postpone the implementation of the 2012 plan until the situation becomes clearer.
- > Agreement with Mr Sokunthea to study the potential in the rice seed market and to support in rice seed production.  
Like Mr Iv Vanna, Mr Sokunthea has been interested in starting a rice seed business. He has requested CAVAC to assist in understanding the potential in the rice seed market and in improving his company's rice seed production techniques.
- > Agreements with four associations (Champey, Boeung Nimul, Por Samrong, and Kvek Meanrith) to conduct rice seed trials for improved wet season varieties.  
Sre Cheng was not included this year on the request of Kampot PDA. It was replaced with Por Samrong; this association is in its first year of support and therefore has been supported with the Phka Rumduol paddy demonstrations.

Commercial trade of wet season rice seed is limited. Retention of own seed and local exchange play a much more important role. However the potential of promoting better varieties is large. Yields depend highly on the variety and the most in demand varieties are fragrant varieties with export potential. Some of the 10 export varieties that are nominated by the RGC fall within this category and currently CAVAC is working with four associations to demonstrate a high potential wet season variety



(Phka Rumduol) and to create demand for the variety. CAVAC will expand this activity to include more associations where possible and will link the associations to potential buyers / demand-side such as millers and paddy traders.

As initiated in 2011, CAVAC will continue to work with small scale rice seed producers to improve the quality of their seed production by training members of the rice seed associations.

In 2013, CAVAC will closely follow up with the associations and look at opportunities to further support them as required. It is important that lessons are learned from this activity at this stage and implemented in activities for 2013, as three out of four associations will have gone through the complete cycle of support from variety introduction, seed production training to marketing support.

Currently, CAVAC is negotiating with at least two more individuals / companies interested in capacity building support for rice seed production. It is expected that at least one will become a CAVAC partner in 2013.

CAVAC received requests from 15 medium and large dry season rice seed producers for technical assistance through a study tour to learn about best practice in rice seed production. We expect that this activity will continue into 2013.

Encouraging wet season seed producers to change varieties needs the support of local millers and paddy traders. CAVAC will develop interventions with these actors to increase the opportunity for farmers to sell new varieties.

For the wet season paddy production, CAVAC studied the adoption of modern varieties by poor wet season farmers. It is likely that in 2013 CAVAC will implement specific interventions on the adoption of modern varieties for very small producing and under resourced wet season farmers. This will be further supported by assistance to all three PDAs in rice seed production training.

### ***Pesticide Market***

Most farmers use some kinds of pesticides in the dry season and increase the amounts significantly in the wet season. Better knowledge on using the appropriate pesticides in a safe and effective way would not only reduce the environmental degradation, but also improve yields. However, this knowledge is limited and incomplete amongst farmers. The availability of low quality pesticides in the market is recognised by all actors as a significant problem.

CAVAC is working with Nokor Thom in 2012 to develop an information strategy to understand the most cost effective way of improving knowledge of farmers on the safe use of pesticides. It is then expected that in 2013 Nokor Thom will request support in some aspects of implementing this strategy.

SPK plans to train farmers in the safe use of pesticide in which case CAVAC is likely to help SPK in developing information materials.

In 2013 CAVAC will continue to engage with MAFF and the PDAs to ensure that training is aligned with the national legislation on pesticides. CAVAC will support and collaborate with the PDAs on retailer training in the safe use of pesticides. Additionally, commercial partners will be sought to work on the training and quality assurance systems in the distribution networks.



### ***Fertiliser Market***

In 2012 the training of fertiliser retailers with Ye Tak was completed and close to 150 retailers were trained. CAVAC noticed a significant demand for this type of training from other fertiliser companies and successfully negotiated an agreement with 13 fertiliser companies to train their personnel in participatory training approaches. This three week group training will be conducted in October, and will build companies' capacity to conduct their own retailer training program. The companies' involved in this group training represent more than 80% of the Cambodian fertiliser market, both organic and inorganic. This activity is an opportunity for CAVAC to build on its potential to become an effective learning organisation.

An agreement with Bayon Heritage, an Organic Fertiliser Company, has been reached to develop its capacity building in farmer training. This agreement will be implemented in late 2012 and 2013.

CAVAC expects to support Ye Tak who wants to establish a quality assurance unit within the company. Through this collaboration, Ye Tak will become the first fertiliser company in Cambodia that has dedicated staff working specifically to ensure the best quality products for its customers. Additionally it wants to build the capacity amongst its retailers to implement field demonstrations amongst its retailers in rural communities. Implementation of this agreement will primarily be in 2013.

Heng Pich Chhay is likely to work with CAVAC (like Nokor Thom) to design an information dissemination strategy and at same time to improve its capacity to implement retailer training for its village level retailers.

Finally it's foreseen that CAVAC will conduct a fertiliser forum to understand the background of current advisory practices for fertiliser.

### ***Agro-tool Market***

**Pumps:** During 2012, CAVAC was not successful in finding partners for its pump activity. This clearly indicated an oversight in strategy development and CAVAC is currently reconsidering the nature of its activity. However, a few opportunities have presented themselves during 2012 which CAVAC is actively trying to develop. The first step is to develop a new efficient small pump with MOWRAM.

**Laser land levellers:** CAVAC has decided that it will make an offer to the market to support relevant companies that are interested in taking up laser land levelling as a commercial activity.

### ***Vegetables***

CAVAC at the last SMG mission received permission to extend its work in vegetables beyond the three provinces, as vegetables are a crop of only minor importance in Takeo, Kampot and Kampong Thom. With this restriction lifted, CAVAC has become a much more attractive partner and has been able to generate interest for its activities with multi-national vegetable seed companies.

CAVAC is likely to have agreements with two vegetable seed companies: East West Seed International and Pacific Seeds. Both agreements focus on building capacity with collectors and retailers to provide growers with more information to base their variety selection on. The agreement with East West Seed International is more focused on organising demonstrations under the guidance of collectors and retailers.

Research into the vegetable strategy of CAVAC revealed that supplementary irrigation for vegetables only became worthwhile if productivity increased significantly. CAVAC therefore has returned to a productivity focus and has decided to make supplementary irrigation a focus when productivity is at a good enough standard to merit an investment.

### ***Rice Export Market***

The export of rice is a renewed focus of the RGC. Several organisations, such as the International Finance Corporation (IFC), L'Agence Française de Développement (AFD), Deutsche Gesellschaft für Internationale Zusammenarbeit and the United States Agency for International Development (USAID), are actively supporting export or are considering doing so. CAVAC has initiated support to one miller in 2012. These activities will continue into 2013. Export is also one of the markets where CAVAC will go beyond only enterprise support (see 2.4.1).

Activities with Baitong Kampuchea are likely to have started before the end of 2012. This will include CAVAC's support to Baitong's extension workers of their green communities on improved extension methodologies; allowing Baitong to source more paddy from the communities.

CAVAC has an additional activity with the FCRMA to assist its members to find export markets for their products. The activities consist of co-funded export visits to interesting markets and of buyer visits to Cambodia. These activities are conducted in close collaboration with the IFC and other donors.

### ***Media***

CAVAC is aiming to develop the availability of improved agricultural programs through commercial media. To achieve this, CAVAC is supporting a production house, Delight Cambodia, to develop a creative and commercially attractive program that delivers important and accurate extension messages. For companies to place advertisements strategically they need to understand the viewing habits of their target audiences and for input companies, this audience is farmers. CAVAC expects to work with a research company to develop media consumption research for the rural population.

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

Delight Cambodia has secured a contract to broadcast 52 episodes on South East Asia TV channel. It will have shot the pilot episode in 2012, which will be used to bed down sponsoring for the TV program.

Ensuring that sponsorship for agricultural programs will continue beyond CAVAC's activity with Delight requires systemic change. A key issue is that currently no commercial media consumption study has been done focusing on farmers as a separate group. Therefore potential sponsors do not know which program to sponsor and at what time if the rural community is their target group. CAVAC is now in discussions with research companies to enhance their capacity to conduct research amongst rural communities and to demonstrate to research companies the commercial opportunities of including rural communities in their research activities. CAVAC expects at least one intervention on this in 2013.

Table 4: Deliverables for Agribusiness Development Component for 2013 CAVAC-led activities

Support Market	Intervention	Ongoing	Additional	Deliverables
Rice seed	Mr Iv Vanna (SPM)	1		Branding and Marketing Plan (Intervention currently on hold due to issues around investment in land)
	Mr Sokunthea	1	1	Rice seed production training Marketing study
	Four associations	4		Rice seed production training Marketing plan support
	Small seed producers	1	1	Training results analysis Market linkage development
Pesticides	Nokor Thom	1	1	Extension Strategy development for a company
	SPK	1		Extension material development support
	Retailer training with PDAs	1		Develop retailer training methodology with PDAs Implement training
Fertiliser	Ye Tak	1		Develop internal quality system
	Heng Pich Chhay	1		Extension Strategy development Support in retailer training
	Bayon Heritage	1		Staff training in retailer training methodology
	Group training	12		Company staff training in retailer training methodology
	Fertiliser forum	1		Forum between companies and research institutes to discuss recent developments in fertiliser technology
Pumps	Commercial partner		1	Pump efficiency improved for supplementary irrigation in early wet season
	MOWRAM		1	Improve the design of a small irrigation pump
Media	Delight Cambodia	1	1	Pilot to be produced Sponsorship developed New agreements
	Research Company		1	Media consumption research developed for agriculture sector
Rice export	Baitong Kampuchea	1		Capacity development Rice seed production report from Baitong Kampuchea
	FCRMA	1		Rice export market visits
Vegetable seed	East West Seed International	1		Vegetable seed training for collectors and retailers via field demonstrations
	Pacific Seeds	1		Vegetable seed training for collectors and retailers via field demonstrations

## 3.2 Component 2: Water Management

The Water Management Component aims to achieve a sustainable increase in the area and yield of irrigated crops. Throughout 2013, CAVAC will ensure:

**Improved capacity of MOWRAM and PDWRAM to participate in designing, developing, operating and maintaining irrigation systems.**

**Improved capacity of FWUCs to efficiently and effectively operate and maintain their irrigation systems.**

**Selected irrigation schemes rehabilitated and transferred to effective FWUCs.**

**Improved models of water management adopted in rain-fed areas.**

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

### 3.2.1 Lessons Learned During 2012

The water management activities were continued during 2012, building on experiences gained since the beginning of the CAVAC Program. CAVAC supported PDWRAMs to design and develop a number of small and medium size schemes. Seven FWUCs and two Farmer Water User Groups (FWUGs) were established and trained in the operation and maintenance (O&M) of their schemes. Since 2010, MOWRAM and CAVAC constructed and rehabilitated 13 small and medium size schemes and cost shared the rehabilitation of two more. Nine Construction contracts are finished and in four cases the contractor will continue works into 2013. A number of schemes will need additional attention to become fully operational for which new contracts will be awarded in 2013.

In 2012 CAVAC also continued to learn from experiences in developing irrigation systems. From a technical point of view we have learned that:

- > CAVAC needs to work more closely with PDWRAM to improve the structural design of irrigation systems. Improvements needed include: cross drainage, assessment of flood levels and related erosion protection measures of canals and embankments. For farmers to manage their schemes well, primary and secondary / tertiary irrigation infrastructure is required. Design, implementation and cost sharing arrangements (e.g. with FWUCs or water sellers) of the secondary / tertiary infrastructure need to be discussed with farmers during the design stage.
- > Deep canals (as a result of canal excavation through elevated fields) resulting in large land losses should be avoided as much as possible. Costs for O&M of these large embankments and deep canals are often high and difficult for farmers to manage, especially during the first few years after completion when irrigation service fees are not yet fully collected. Pumping schemes, when technically feasible and accepted by water users, are in such cases the preferred option.
- > CAVAC should take sufficient time to assist PDWRAM to study and design appropriate schemes. Land losses can often be reduced or even avoided by providing alternative design options. Hydrological investigations need to be further carried out if flooding and drainage patterns are not well understood and soil stabilisation measures need to be assessed in the case of erosive, soft, and unstable soil types.

- > Proper action during construction and minor adjustments to the design can increase water safety during construction and for future operations. Avoidance of temporary pools of water close to houses is one example.

From an operational and management point of view we have learned that:

- > The development of self-reliant FWUCs needs strong support to build capacity on technical, financial and organisational matters. The capacity building by the provincial departments alone might not be enough. Service providers from the private sector should be considered where appropriate.
- > Choosing inappropriate water diversion structures may lead to cumbersome operations. It is essential for the PDWRAM to adopt designs that take into consideration the farmers' perceptions on what the scheme is supposed to deliver and what farmers are able to manage with initial support from Program staff.
- > A small budget for each FWUC for their first year of activities will provide the necessary means to get them started with irrigation service fee collection. A small office building is required to organise meetings and serve as an administrative office for the FWUC.
- > The private sector (water sellers) can play a major role in the O&M of irrigation systems. There is a great variety in the type and quality of services provided, but further scope for improvement is certainly possible.
- > A FWUC functions better if it is linked with the Local Administration (Commune and Village Chiefs). In the long run, however, it would be better to have an independent FWUC.

### 3.2.2 2013 Work Program

Based on the lessons learned described in the previous section, the PDWRAMs have selected a number of new schemes that will be developed with assistance of CAVAC. The schemes that were completed over the last two years will be further developed in close collaboration with established FWUCs. Table 5 provides an overview of the total number of irrigation schemes and the respective stages of development.

#### Box 5: A Lesson Learned at CAVAC Canals

In 2012, unexploded ordinances were found in two canals. CAVAC had checked with the local community and with available maps. In 2013 CAVAC will, on top of this, seek even further guidance from the responsible government organisations.

As in 2012, if signals of their presence are received, construction will be postponed and in collaboration with the RGC all action will be taken to avoid accidents.

***CAVAC will submit a final list of proposed schemes to the NSC for approval. This list will consist of schemes that have been proposed by the PDWRAMS and where the farmers and local community are eager to contribute and willing to take on long-term maintenance. All schemes will be technically and economically feasible; will have no environmental issues that cannot easily be mitigated and will have no unsolved land issues.***

***The final number of proposed schemes will depend on CAVAC's staff capacity and on financial considerations. The list in Table 5 is based on the assumption that some schemes may not comply with all these requirements during this time. If more schemes are suitable than money or capacity allows, some schemes may need to be postponed until 2014.***

In addition to the construction of a number of new schemes CAVAC will continue to implement irrigation works under its Supplementary Investment Fund (SIF). The SIF is a grant initiative that provides support for existing FWUCs to improve their irrigation systems on a cost sharing basis. In 2012 only two schemes in Takeo received support under this initiative; however in 2013 we will continue to promote the use of the fund in Kampot province.

Part of this completion of schemes from 2012 and before are secondary canals. These canals are needed to assure the full potential of the schemes. Initially it was assumed that farmers or water sellers would take care of these, but in some schemes this is not happening. CAVAC will engage with the communities to see if more support is desirable and needed.

To ensure greater sustainability of irrigation schemes during 2013, more emphasis will be put on the involvement of farmers in the design and construction of the schemes. For the new schemes, farmers will be more involved in the selection of the type of structure and its location in order to increase the sense of local ownership. For the completed schemes, the FWUCs, assisted in some cases by private water sellers, will be more involved in further development of the schemes. CAVAC will assist the FWUCs in the design and construction of secondary canals and structures to ensure the maximum potential command areas of all schemes.

As per NSC recommendations, CAVAC will consider ways to improve timing and execution of the feasibility studies.

Once the construction of their schemes is completed, the FWUCs receive training in the O&M. Training is provided by the staff of the PDWRAMs. It is important to monitor the progress of these training programs. CAVAC will monitor progress in: (i) development of the maintenance plan; (ii) development of the operational plan; (iii) fee collection rate; (iv) process of conflict resolution; (v) expenditures on scheme maintenance; and (vi) changes in farming practices leading to increased agricultural outputs. Based on the outputs of the monitoring program, additional training and assistance will be provided by PDWRAMs and external service providers as required.

The FWUCs established according to the guidelines of the Sub Decree on FWUC<sup>3</sup>, will be registered at the PDWRAM in their respective Province. Once these FWUCs are officially registered, they are entitled to receive a contribution for scheme maintenance out of the Maintenance Fund to be established by MOWRAM. Once the Maintenance Fund procedures are officially endorsed by MOWRAM and the Ministry of Economy and Finance (expected in 2013) compliance with the procedures will be facilitated by CAVAC.

Once a FWUC is capable to operate and manage its scheme, an official handing over document of scheme assets will be prepared and the FWUC will be able to act as an independent entity able to enter into arrangements with external service providers for the delivery of services related to O&M, agricultural extension and scheme improvements.

CAVAC will assess the possibilities and potential of extending the on-farm water management research program that was initiated in 2011. Results of land levelling, improved water management, and canal lining will be analysed and further developed based on farmers' demands and the costs involved.

<sup>3</sup> The Sub-decree on FWUC is part of the Water Resources Law of Cambodia and expected to be officially approved by the COM by the end of this year

CAVAC will continue to collaborate with the ADB (AusAID-co-funded) Water Resource Management Sector Development Program (WRMSDP). Cross learning will be beneficial in the fields of O&M, maintenance fund procedures and gender mainstreaming.

Other main irrigation developments are from the Japan International Cooperation Agency (JICA) in western Cambodia, continued support to irrigation O&M and the Cambodia Irrigation Scheme Information System from AFD, and various ADB funded projects in the Tonle Sap Basin. The Cambodia Development Resource Institute will remain an important source of knowledge on the social and economic aspects related to water resources development.

### **3.2.3 Expected Achievements**

By the end of 2013, CAVAC expects to complete the construction and rehabilitation of all the 2011 and 2012 schemes and complete the earthwork of the schemes approved by the NSC in the three target provinces.

Furthermore, the Program aims to:

- > develop a number of medium scale pumping schemes;
- > deliver at least two co-investments with FWUCs through the SIF;
- > improve capacity of all the FWUCs established since 2011;
- > establish and build capacity of new FWUCs at the 2013 irrigation schemes;
- > hand over the full ownership of three to five schemes;

Table 5: CAVAC's Irrigation Scheme Status

No	Scheme Name	Province / District	Survey and Design	Construction main canal	Construction of secondary canals	FWUC establishment and initial trainings	FWUC follow up training	FWUC registration at PDWRAM	Scheme handing over to FWUC
	<b>2010 and 2011</b>	<b>Kampot</b>							
1	Prey Tonle	Banteay Meas	✓	✓	✓	✓	•	•	•
2	O Kak	Banteay Meas	✓	✓	✓ / •	✓	•	•	•
3	Sbove Andeth	Banteay Meas	✓	✓	✓ / •	✓	•	•	•
4	Thnaot	Banteay Meas	✓	✓	✓ / •	✓	•	•	•
	<b>2012</b>								
6	Spean Touch	Kampong Trach	✓	✓ / •	✓ / •	•	•	•	•
7	Prey Leu	Kampong Trach	✓	✓	✓ / •	•	•	•	•
	<b>2013</b>								
8	Hay Sau	Banteay Meas	✓	•	•	•			
9	Reservoir 77	Chum Kiri	✓	•	•	•			
10	Chamlong Chray	Banteay Meas	✓	•	•	•			
	<b>2010 and 2011</b>	<b>Takeo</b>							
11	Krapum Chouk	Koh Andet	✓	✓	✓	✓	•	•	•
12	Kveng Tayi	Koh Andet	✓	✓	✓	✓	•	•	•
13	Tumnub Louk	Koh Andet	✓	✓ / •	✓ / •	✓	•	•	•
	<b>2012</b>								
14	Prey Rumdeng	Kirivong	✓	✓	✓ / •	•	•	•	•
15	So Hang	Borei Cholsar	✓	✓ / •	✓ / •	•	•	•	•
	<b>2013</b>								



No	Scheme Name	Province / District	Survey and Design	Construction main canal	Construction of secondary canals	FWUC establishment and initial trainings	FWUC follow up training	FWUC registration at PDWRAM	Scheme handing over to FWUC
16	Rokarchouk	Prey Kabas	✓	•	•	•			
17	Canal 11	Angkor Borei	✓	•	•	•			
18	Canal 87	Angkor Borei	•	•	•	•			
	<b>2011</b>	<b>Kampong Thom</b>							
19	Angko	Kampong Svay	✓	✓ / •	✓ / •	✓			
20	Thnaot Chum	Baray	✓	✓	✓ / •	✓			
	<b>2013</b>								
21	Canal 6 January (Secondary Canal 2)	Santuk	✓	•	•	•			
22	Canal 6 January (Secondary Canal 3)	Santuk	✓	•	•	•			

✓ = Activity already completed

• = Planned activity for 2013

✓ / • = Activity partially completed and planned for 2013

Further studies about the exact size and design of rehabilitation of canal 87 will be conducted in the first part of 2013.

### 3.3 Extension

Throughout 2013, CAVAC will ensure:

**Extension activities supported to address constraints in selected value chains.**

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

**Partnership programs linking researchers, extensionists, farmers and agribusiness developed and implemented.**

#### 3.3.1 2013 Work Program

##### Institutional Changes

As explained in Section 2, this AWP will no longer report on ACIAR implemented research activities. However, CAVAC proposes a small research fund to support action research. The fund is to be spent on local organisations and used for focused agricultural research that is relevant to the CAVAC Program.

##### Information Transmission Philosophy

CAVAC has designed a model for information and knowledge transfer which reflects how information is disseminated (Figure 1). The figure describes pathways of information transmission, for example, research institutes such as the Cambodian Agricultural Research and Development Institute (CARDI), universities, and other technical departments of GDA have important roles in developing and generating new technical information. The information is normally simplified and passed to PDAs and / or companies who then provide it to input retailers and / or extensionists and then further to farmers. Understanding the (potential) roles of government and the private sector in generating and transferring information to farmers is essential in order to design successful activities. CAVAC has developed several interventions to ensure the sustainable transmission of up to date relevant information to farmers.

##### **Box 6: Preliminary Guidelines for the CAVAC Action Research Fund**

**Definition:** A small research fund to support action research. The fund is to be spent on locally present organisations. It should be used for focused agricultural research that is relevant to the CAVAC Program.

**Duration:** Maximum one year

**Budget:** US\$20,000–30,000 per research

**Potential Applicants:** All institutions and companies based in Cambodia.

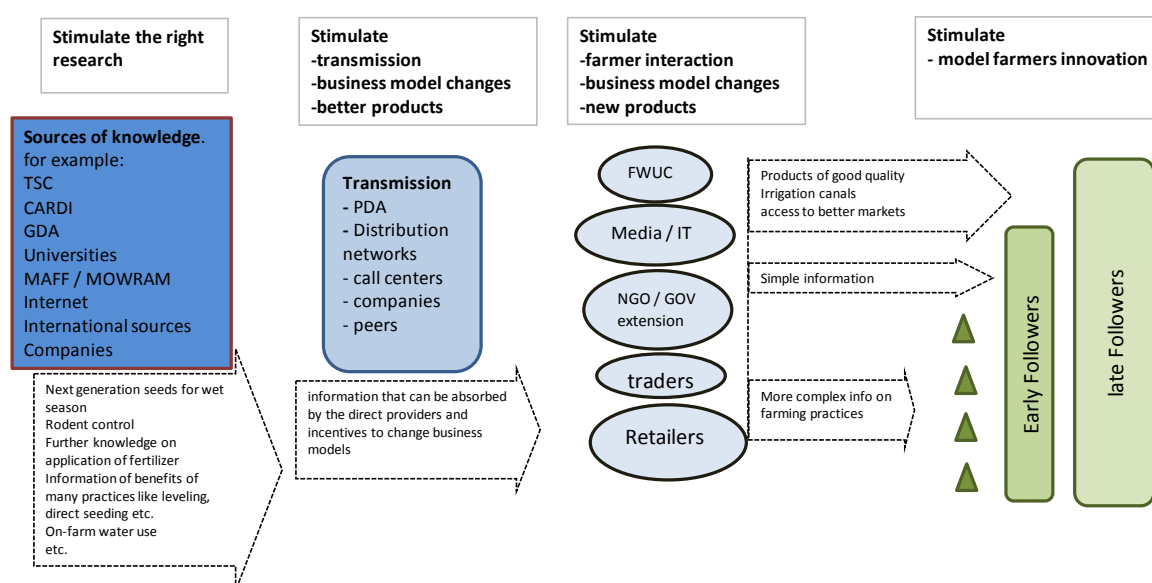
**Process:** CAVAC sets the research questions and invites multiple institutions to submit proposals that are evaluated with quality and value for money criteria. The research questions will be listed after analyses of questions arising from discussions with public and private sector institutions and from internal discussions.

**For example:** The help desk function lacks updated information on a subject. Value chain analyses and impact assessments raise agricultural problems for which there is no answer.

After receiving and evaluating the proposals, CAVAC may adjust the scope to assure maximum quality and value for money.

In some cases cost sharing will increase the likelihood of awarding the contracts.

Figure 1: Information Transfer Pathway



In 2012, CAVAC has implemented several activities related to providing information and knowledge to farmers. These included: model farmer training; support to a private call centre; the PDA Help Desks; renovation of the CARDI website; and organising linking events. For all activities, M&E activities were conducted to evaluate their impact on farmers, to generate lessons learnt and incorporate those into the next round of implementation.

Overall, good progress has been made in extension activities in 2012. Based on the M&E results, service providers have changed their business models such as updating their information for farmers, model farmers have improved their knowledge, and farmers have a better network to look for updated information.

In 2013, CAVAC will continue six major activities being: (1) model farmer training; (2) support to a private call centre; (3) PDA help desks; (4) private companies' help desks; (5) renovation of CARDI website; and (6) linking events.

### Model Farmer Training

CAVAC has worked closely with the three PDAs in providing three-hour focused training to model farmers. In 2012, 4,170 model farmer households were trained on three topics: nutrient management and fertiliser use, weed control, and seed storage using a participatory training approach. For each training session, PDA staff were actively involved in selecting model farmers and as resource persons. CAVAC hired an independent research firm to conduct a large-scale survey (150 samples) to measure the Knowledge, Attitude and Practice (KAP) changes in model farmers who had attended the training. The results indicated that 85% of trained model farmers had better knowledge of fertiliser use and 75% of trained model farmers applied fertiliser correctly to a pretty large extent (30% applied fertiliser correctly during the basal and tillering stages and 45% applied correctly during the basal and panicle initiation stages). However, the impact of training on weed control was minimal. This was because of the complexity of the topic; it was quite difficult for farmers to understand and remember.

In 2013, 5,700 model farmer households will be trained on the same topics. Several modifications will be made according to the findings in M&E. The selection criteria and process will be reviewed and adjusted to better select model farmers to ensure that they have more impact on their neighbours. The content of the training materials, especially on weed control, will be simplified. Contact numbers of PDA staff (help desk and call centre) will be provided in order to foster better linkages between trained model farmers and sources of knowledge. The trained model farmers are asked whether their contact details can be provided to interested input companies. The list of trained model farmers who agree will be provided to input companies that are interested. A study of farmers' KAP changes will be conducted to measure impact of training on farmers.

### **Private Call Centre: Asia Master**

Since the business model of Asia Master is that it generates revenues by providing quality information to farmers, CAVAC has developed a contract with the company to improve the quality of the agricultural information of its database, to improve the capacity of its agents, and to conduct promotional campaigns.

A study on call satisfaction indicated that agents found it hard to provide information that callers needed. In 2013, CAVAC will continue to support the call centre in developing a diagnostic tool which can assist the agents in answering the callers. CAVAC will also continue improving the capacity of the agents. Once the database and the agents are capable of providing good quality information, promotional campaigns will be conducted.

From the start CAVAC realised that success was not assured when supporting call centres in changing both their audience and the content. Taking these risks is done deliberately. CAVAC will continuously monitor if further support is justified. Not all interventions will be successful. That is part of CAVACs approach.

### **Help Desks at PDAs and Companies**

In 2012, the help desks at the three PDAs were established with searchable databases. The intention is that farmers can call the help desk at each of the three PDAs to receive information from agronomists. PDA staff have been trained on how to use the database. The promotion was conducted through local radio shows. PDAs have shown strong interest in the activities and they have developed other promotional campaigns such as publications of name cards and leaflets.

In 2013, CAVAC will conduct a survey on callers' satisfaction. CAVAC will adjust the support based on the findings accordingly. The database will be updated with new information.

As described in the information transfer model, input companies also have an important role in providing information. Based on a focus group discussion, farmers mostly need specific information from input companies. CAVAC will support private companies to have help desks installed at their locations if they are interested.

### **CARDI Website**

The CARDI website has been identified as a good way of communicating with a large number of people. After several discussions with CAVAC, CARDI's management realised that it would be good if the website was uploaded with simple information which could be easily understood by non-technical

persons and if it was equipped with a search function. Under an agreement, CAVAC has supported CARDI to renovate the website. The new website at this time of writing is still under development.

Once a new website is fully operational, an internet-based survey will be conducted to understand the audience and their information needs. Based on the result of the survey, further activities will be implemented to improve the website.

### Linking Events

The purpose of linking events is to create a place where the sources of information such as CARDI, PDAs, and input companies can meet retailers and trained model farmers to share information and visions on agriculture. It is expected that after the events, farmers will contact those sources for further information related to new products and growing techniques. In 2012, two events were conducted in Takeo and Kampong Thom. Each event attracted between 350–500 model farmers, 40–80 local retailers, and 22–33 input companies.

CAVAC will conduct a study to understand how much information is passed through the linking events to farmers. New linking events will be conducted and adjustments will be made based on the study.

### 3.3.2 Expected Achievements

In 2013, all CAVAC activities on the information flows from various sources to farmers will be implemented with an even stronger focus on the quality. More action will be taken to determine lessons learned, such as: studies to evaluate the satisfaction of callers to help desks and the call centre; a KAP study on changes precipitated by the model farmer training; and a study to understand how much information is passed through linking events. CAVAC will ensure that our designs for activities in 2013 will incorporate those lessons learned into the new cycle of implementation.

## 3.4 Component 4: Business Enabling Environment

The Business Enabling Environment Component aims to improve the business enabling environment in Cambodia to facilitate the development of selected value chains. Throughout 2013, CAVAC will ensure:

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

Increased opportunity for public private dialogue around key enabling environment issues.

Strengthened industry representative organisations.

Increased use of Public Private Partnership investment model.

Policy Support Funding Facility utilised to progress activities.

### 3.4.1 2013 Work Program

The Business Enabling Environment Component of CAVAC has become increasingly integrated in the other components of CAVAC during 2012. The five sub-components will contain the following activities in 2013:

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

In 2012, CAVAC undertook an internal evaluation of the following rules and regulations: Draft Law on Associations and Non-Governmental Organisations (NGOs); Draft Sub Decree on Water Licensing; Draft Sub Decree on River Basin Management; Law on the Regime of the Press; Sub Decree on the Establishment of the Press and Quick Reaction Unit; Draft Law on Agricultural Cooperatives; and, the Pesticide and Fertiliser Management Law and related Sub Decrees and Prakas.

In 2013 CAVAC will continue monitoring new rules and regulations and will continue to assess how these new rules and regulations need to be incorporated in all activities CAVAC undertakes.

### **Increased opportunity for public private dialogue around key enabling environment issues**

In collaboration with TAF, CAVAC organised three large public private dialogue workshops: one in each of the three target provinces. The provincial government departments took a leading role, and in all workshops, representatives of the national government were present. All the three workshops revealed issues that would benefit from further dialogue between the public and private sectors.

In 2013 CAVAC and TAF will conduct a new round of consultations with both the public and private sector representatives, and based on the interest, will organise a number of small meetings. In these meetings the issues will be further analysed and roadmaps for solutions will be drawn. At the end of the year, CAVAC may organise a national workshop to disseminate some of the findings. The three provincial public private dialogue workshops are a solid first step in a process for which the outcome is not fully predictable. CAVAC intends to continue the process as long as the signals from participants are encouraging.

### **Strengthened industry representative organisations**

CAVAC has been supporting an industry representative organisation based in Battambang, the FCRMA, in its international rice market development. The support activities include a trade visit of the FCRMA members to a potential international market to better understand the quality standards and other relevant requirements of potential international rice purchasers and a visit of those rice purchasers to Cambodia to understand the rice production process of the FCRMA members.

### **Increased use of Public Private Partnership investment model**

The initial idea to use this model for investments in market places has not proven to be feasible. The model is however widely used in irrigation, where farmers give up land and where sometimes water sellers construct side canals. Within the SIF the joined investment costs are shared with the FWUCs.

### **Policy Support Funding Facility utilised to progress activities**

The focus of the Policy Support Funding Facility was narrowed in 2011. In 2012 CAVAC supported PDA priorities using other budget lines and no application was approved under this facility. In 2013 the policy facility will remain in place in case need for policy support arises.

As in 2012, CAVAC will support the Technical Working Group on Agriculture and Water.

#### **3.4.2 Expected Achievements**

- > CAVAC will select a number of internal policy analyses.

- > In collaboration with TAF, CAVAC will organise a number of small public private dialogue meetings.
- > Through the Policy Support Facility, CAVAC will support MAFF and MOWRAM in specific requests, once approved by the NSC.

### **3.5 Cross-cutting Issues**

#### **3.5.1 Gender and Disability**

Understanding gender equality and incorporating these principles into all of CAVAC's interventions have been a cornerstone of CAVAC's design and will continue to be so throughout implementation in 2013.

CAVAC's Gender Strategy and the gender research that was conducted in 2011 give direction on how CAVAC addresses gender; not as a stand-alone activity, but integrated across all activities.

To date, CAVAC has mainly applied the do-no-harm check, but since July 2011, with the arrival of a full time Gender Specialist, CAVAC has been more actively screening all activities to ascertain how better knowledge on gender, poverty levels, disability or other characteristics of targeted farmers can improve the effectiveness of CAVAC's support systems. For example, so far CAVAC ensured gender balance of model farmers (husbands and wives) in its model farmer household training sessions. CAVAC asked further questions on how gender played a role when male and female model farmers communicated with farmers, and if gender impacted the transfer of information by social networks.

Rather than only looking at men and women and how they benefit from the interventions, CAVAC has broken down the concept of farmers to types of farmers: men, women, poor, less poor, able bodied or with a disability, literate or illiterate, etc. It has developed household typologies around this and is reporting impacts for the different types of households. Though a starting point is often on poverty levels and gender, this approach can easily integrate disability issues.

A gender and disability assessment for each intervention will continue to be used in 2013.

The Disability Action Council advised that there were a large number of groups of people with a disability at the village level. CAVAC has looked for these groups when constructing irrigation canals and not many were found. In 2013 however CAVAC will continue to include representatives of people living with a disability where possible.

#### **3.5.2 Environment**

The environment is a critical cross-cutting issue which has implications for the entire CAVAC program. Programs such as CAVAC have a significant responsibility to ensure its activities are managed in an environmentally responsible way, and comply with an increasing body of regulation.

CAVAC takes this responsibility very seriously, and works to ensure compliance with both Cambodian and Australian environmental laws and policies in the implementation of the Program. In practical terms, this means all activities will be subject to an initial screening process, and some then go on to full Environmental Impact Assessments and the development of Environmental Management Plans. Non-compliant activities are either modified, or where compliance cannot be reasonably achieved, CAVAC will not proceed with those activities.



It is important to recognise that activities may have either positive or negative impacts, or a combination of both. While possible negative impacts are assessed and managed, some CAVAC activities have significant positive impacts, such as the reduction of negative impacts associated with the misuse of pesticides and fertilisers. CAVAC is also contributing to climate change adaptation and disaster risk reduction in various ways including the promotion of drought and submergence tolerant seed varieties. Water availability studies and irrigation works both address the need for a more regular and reliable long-term water supply in the face of less reliable weather patterns.

One area where environmental considerations have a particularly significant impact is in the irrigation work undertaken by CAVAC. The activities for 2013 will be subject to feasibility studies, cost benefit analysis, and environmental assessment. Some environmental issues are specific to individual interventions, and others are far broader. Two broader issues are land ownership and / or occupation, and water safety. In 2013, CAVAC, in conjunction with MOWRAM and the relevant PDWRAMs, and with the assistance and advice of a specialist, will ensure land issues are carefully addressed, and will implement water safety programs for communities close to its irrigation works.

### **3.5.3 Monitoring and Evaluation (M&E)**

CAVAC's M&E system is fully operational. All key elements have been developed and tested and so far there has been no indication that major changes are needed in 2013.

In 2013 the system will, even more than previously, be at the heart of management decision, as advised by the MTR team.

Cross-cutting issues will be fully integrated in the M&E system.

### **3.5.4 Expected Achievements**

- > The Gender and Disability Strategies will guide all CAVAC activities and will be mainstreamed in all activities;
- > CAVAC's Environmental Strategy will be fully implemented; and
- > M&E will be an integral part of all CAVAC activities. All experts will be involved.

## **4 Program Management**

The MTR assessment of CAVAC stated that it is a well-managed program which has learnt important lessons about operationalising a new approach within AusAID's systems. During 2013 CAVAC will continue to refine management processes to be able to work more effectively within the constraints of the operating environment whilst ensuring robust, transparent mechanisms which support implementation. CAVAC is in the process of finalising new procedures around the engagement of private sector partners and will continue to make improvements to new contracting systems such as the output based contract model. The MTR report states that as CAVAC matures, a focus on communication and dissemination to key stakeholders should be developed. In line with this recommendation, during the second half on 2012 external resources have been engaged to develop communication materials. In 2013 CAVAC will allocate resources to dissemination in line with Program objectives.



ACIAR's role in the Program has changed over the last AWP period. ACIAR will no longer be involved in the management of activities through CAVAC. The CAVAC team however will continue to collaborate with ACIAR in the implementation of research activities and will continue to cooperate and share information across their Cambodia based interests. All research and extension activities previously managed through ACIAR are now managed by Cardno. Contracts for staff previously managed by ACIAR have been novated to Cardno and will be covered by the head contract with AusAID by January 2013.

Finding flexible mechanisms to effectively work with partners has been a key aspect of the CAVAC management model. As mentioned in the MTR report the constructive relationship between CAVAC and AusAID and CAVAC and the RGC has been a valuable asset for Program Management. CAVAC is committed to build upon these strong relationships as outlined above. The change to output-based contracting and the modifications to the way CAVAC works with provincial partners such as the PDAs (as highlighted in section 3.1.1) will enable our team to work more effectively in partnership to achieve quality outputs to CAVAC interventions. The initial signs are that the change to output based contracts during 2012 has contributed to a more collaborative relationship with partners enabling a focus on successful implementation. CAVAC will continue to monitor the workability of this contracting model and will make modifications to the system as required.

CAVAC has worked to ensure consistency and efficiency in Program implementation through a tailored range of program management systems. Efficiencies are continually being made through consistent review of these systems. This process will continue in 2013 with updates to a number of essential procedural manuals, including the Manual of Operations, CAVAC Imprest Account, Procurement Manual and Program Management and Procedures Manual, being submitted for approval towards the end of 2012 for continued implementation in 2013.

A successful means of fostering relationships and communication with government stakeholders has been the submission of Monthly Progress Reports to the Co-Chairs, Co-Deputy Team Leaders, Director General of GDA and AusAID, and the Monthly Summary Note to PCCs. These reports will continue in 2013.

#### **4.1 Staffing**

CAVAC staffing is now at full capacity with all positions filled. Due to the changes in ACIAR's role in the Program, staff engaged through ACIAR in 2012 will be transferred to the Operational Contractor by January 2013. In 2013 the Program will be managing a larger workload with fewer managers, particularly with the departure of the ACIAR manager responsible for research and extension activities. To assist with these changes a management forum has been established which brings together AusAID (on an irregular basis), managers and staff leaders to discuss pending issues and provide advice on Program planning. This also works to develop and mentor the management skills of those who are showing potential for leadership positions within the CAVAC team.

As previously noted in past Annual Work Plan's, CAVAC has in general engaged well-educated Cambodian experts with little working experience, and as foreshadowed, a significant investment in both internal and external training has been made. This investment has been valuable with the MTR team noting the impact of the 'high-calibre' CAVAC team. Investment in staff development and training will continue in 2013 with a focus on increasing the management skills of long-term, high performing

staff members and increasing the capacity of those who are new to the team. Formal training opportunities are linked to the performance management system in place for staff which enables the management team to monitor and provide recommendations on capacity building strategies for individual staff members and provides a mechanism to mitigate staff retention issues.

CAVAC has conducted a review of environmental management which has generated some changes to the roles and responsibilities of staff working on environmental issues within the CAVAC team. As part of these changes an International Environmental Specialist has been engaged on a long-term basis to provide on-going technical support to the in-country team. Terms of Reference for the locally engaged Environmental Specialist have been modified to reflect these changes.

CAVAC looks forward to working with AusAID on a replacement policy to the Priority Operating Cost scheme. The original scheme identifies a range of specific positions within MAFF, MOWRAM and Provincial Government Departments to work closely with CAVAC, and laid out policies enabling CAVAC to develop an even higher degree of cooperation between public partners.

## **4.2 Stakeholder Collaboration**

Collaboration between RGC, AusAID and CAVAC has been practically achieved through the NSC and by the Executive Committee of the NSC. Collaboration in the provinces has improved significantly since the creation of the provincial offices, the establishment of the PCCs and the move to output based contracting mechanisms. Successful PCC meetings have led to higher levels of engagement both in the planning and implementation of CAVAC activities, and in the preparation of each AWP. In 2013 collaboration will continue through these important national and provincial mechanisms.

At the provincial level CAVAC has funded Rice Policy activities in each province and has worked closely with PDWRAMs on the funding of FWUC establishment process. These collaborations have been instrumental in developing closer day-to-day relationships, which will be further developed in 2013 with practical and operational support.

CAVAC provides both formal and non-formal capacity building opportunities to provincial partners to enable increased engagement on CAVAC's key priorities and improved quality in decentralised service provision. CAVAC staff members provide non-formal, on the job training to their provincial counterparts based on identified needs, and partners provide proposals for formal training opportunities which are assessed by CAVAC on criteria including value for money and capacity requirements.

In addition to funding specific activities, CAVAC has assisted counterparts in providing technical equipment, computer and access to the internet in some provincial locations, and in assisting with transport for various CAVAC related activities. This support will continue through the period of this AWP.

CAVAC maintains constructive relations with many other development partners and will continue to engage informally with similar Programs including: Care Cambodia, IDE Cambodia, SNV, Oxfam, International Finance Corporation Helping Address Rural Vulnerability and Ecosystem Stability Program (Harvest), Asian Development Bank, WRMSDP, JICA, AFD and others.

TAF has been a main partner in the BEE activities in 2012 and will likely continue the partnership with further activities in 2013. At the time of writing, a proposal on further activities was being developed.

### **4.3 Procurement**

It is anticipated that during 2013, expenditure will occur through publicly advertised tenders for construction works, requests for expressions of interest for consultants advertised either nationally or internationally, partnership agreements, competitive quotations, or through grants, depending on the nature and scale of the activity.

A Procurement Plan for 2013 activities will be established and all work-plan related expenditure will be made from the Imprest Account, and will be based on a number of approvals; primarily, the approval of the NSC. It will also be subject to internal CAVAC approvals. Work plan related tasks and relevant documents such as Terms of Reference will be approved by the Team Leader – and on the basis of those approvals, expenditure from the account will be authorised by the General Manager.

The procurement team comprising of an international Procurement Manager together with two national Procurement Officers manage all CAVAC procurement. The Procurement Manual, which sets out in detail the processes and procedures relating to all CAVAC procurement, has been prepared and is continually updated with the latest update approved by AusAID in July 2012.

The quality of the construction contractors procured through the CAVAC open bidding process has continued to be an issue impacting irrigation program implementation. As a means of resolving this issue a pre-qualification process was conducted in September 2012. Firms who wish to be able to bid for CAVAC construction contracts were asked to apply providing information on their capacity and financial management capability. Only firms who have passed CAVAC pre-qualification criteria will be able to bid for construction contracts in 2013.

## **5 ANNUAL WORK PLAN BUDGET – 2013**

Following is the AWP budget for 2013. The total budgeted expenditure equals **US\$7,843,800**, which is to be funded by the CAVAC Imprest Account.

The investment costs in irrigation can highly influence the actual spending, and will only be known with more accuracy once the final selection of schemes has been done and once the detailed designs have been finalised.

Table 6: Annual Work Plan Budget

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

Component breakdown		Description	Activities 2013	Budget (US\$)
1.4	Improved availability and communication of market information between value chain stakeholders		Support to more companies if possible	
			<u>Extension</u>	
			Model Farmer Training	
			Support to call centres	
			Support to CARDI for its website improvement	
			Support to PDAs' Help Desks	
			Support to Private Companies' Help Desks	
			Linking events	
1.5	Participatory planning and construction of key infrastructure to address value chain bottlenecks.	On hold until good opportunities have been found.		\$0
1.6	Government-led rice policy activities	Activities led by the three PDAs		\$450,000
		Activities led by the GDA		\$250,000
Component 2: Irrigation and Water Management				\$5,498,800
2.1	Improved capacity of MOWRAM and PDWRAM to participate in designing, developing, operating, and maintaining irrigation schemes.	Intense collaboration with MOWRAM and PDWRAMs in the construction of schemes and outsourcing in the detailed design of another group of schemes. Involvement in the water availability studies if needed.	Extensive collaboration and subcontracting with all three PDWRAMs including construction supervision. Support to PDWRAMs in training as per chapter 3.2.	\$118,800
			PDWRAMs' survey and design of 2014 schemes	
2.2	Improved capacity of FWUCs to efficiently and effectively operate and maintain their irrigation systems.	Based on the position paper on ownership, CAVAC and PDWRAMs will support FWUCs and other players to improve likelihood of sustainability.	FWUCs establishment and training	\$280,000
			FWUC office construction	\$110,000
			Supplementary Investment Fund	\$100,000
2.3	Selected irrigation schemes rehabilitated and transferred to effective FWUCs.	Depending on the decision of the NSC in late 2012, CAVAC will tender schemes and commence construction in 2013. On top of that, one or two FWUCs will receive co-funding for improvements.	Additional work on 2011 and 2012 canals	\$1,290,000
			Construction of new schemes*	\$3,600,000
			Water safety	
2.4	Improved models of water management adopted in rain-fed areas.		Lessons from the research will be incorporated in CAVAC activities.	\$0
2.5	Increase use of hydrological data in the planning and management of irrigation systems.	One water availability study was finalised in 2011. A new one could be undertaken if requested by PDWRAMs.		\$0

Component breakdown		Description	Activities 2013	Budget (US\$)
<b>Component 3: Research and Extension</b>				<b>\$100,000</b>
3.1	Priority research and extension activities address constraints in selected value chains.	Four large research studies are no longer under CAVAC's scope of work		\$0
		Small additional research may be commissioned as required.		\$100,000
3.2	Enhanced capacity of formal and informal extension providers to transfer improved technologies and information to farmers.	Included in 1.2		\$0
3.3	Partnership program linking researchers, extensionists, farmers and agribusinesses developed and implemented.	Included in 1.2		\$0
3.4	Budgetary support to CARDI.	No longer under CAVAC's scope of work		\$0
<b>Component 4: Business Enabling Environment</b>				<b>\$290,000</b>
4.1	Improved research and understanding of the enabling environment surrounding key value chains.	CAVAC will assess impacts of a number of new regulations for agriculture and specifically CAVAC activities.	Issue studies to be undertaken and where possible activities will be initiated.	\$10,000
4.2	Increased opportunity for public private dialogue around key enabling environment issues.	Activities with TAF where provincial government-led dialogue is initiated	Continued activities from 2012	\$180,000
			Follow up activities if first round successful	
4.3	Strengthened industry representative organisations.	Activities may emerge from other activities.		\$0
4.4	Increased use of Public Private Partnership investment model.	Integrated with 2.2 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.	RGC initiatives supported	\$100,000
<b>Cross Component Activities</b>				<b>\$425,000</b>
5.1 / 5.2	Gender and Disability	The gender and disability strategies will guide activities. Both will be mainstreamed in all activities. On top of this one or two dedicated interventions are likely.	Gender and disability are mainstreamed in all activities.	\$0
5.3	Environment and Disaster Risk Reduction	Revised Environmental Strategy will be implemented in 2012 and continued in 2013.	All interventions will have been screened for environmental impacts. Management plans prepared and activities implemented and monitored.	\$0

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

\*Note: This budget does not include schemes approved in 2012 to be completed in 2013 or expenditure in 2014 for schemes approved in 2013.

## ANNEX 1: IMPLEMENTATION PROCESS AND PROCEDURES

The CAVAC Program Design Document acknowledged that most agricultural constraints had a multidisciplinary character, for example: irrigation schemes would not be successful if not based on a solid agricultural analysis; embedded in existing social structures, in a conducive business enabling environment and with effective demand for the products. Sustainable extension must follow the same business incentives as agribusiness and dealing with agribusinesses require extensive knowledge of farming.

CAVAC is staffed by a team of national and international technical and operational specialists. To apply the team's technical knowledge optimally to each intervention, program management, and as such the AWP, has been divided into tasks that will be executed by multidisciplinary teams. The tasks will be regularly updated. The clear responsibilities within the task force system will allow CAVAC to better serve and collaborate with public and private partners, and make CAVAC more accountable to PDWRAMs, PDAs, MAFF and MOWRAM. The Sector Managers remain the first point of communication for the government partners and have specific responsibilities for maintaining these relations.

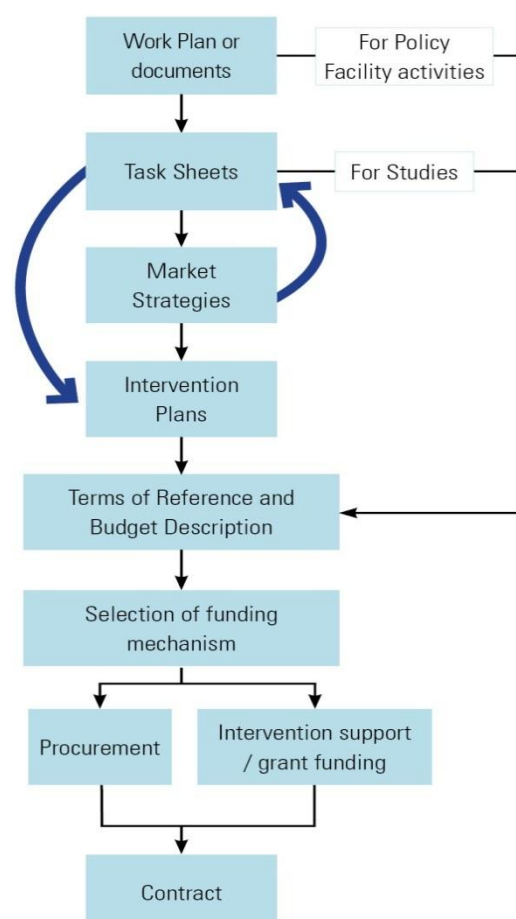
Figure 2 shows the different internal procedures which will ensure that CAVAC's activities remain in line with the approved AWP.

### Market Strategies

Market strategies are central in determining which activities CAVAC will undertake and which activities the Program should not support. For each market (such as dry season rice, rice for export, wet season rice, vegetables and cassava), CAVAC will first establish a market development strategy. Influenced by government strategies, external studies and internal assessments, a market development strategy will determine the key constraints in a value chain or market, and which constraints can and will be addressed. Strategies will focus interventions on the core issues and will avoid supporting interventions that do not address fundamental constraints in the markets. No activities will be undertaken outside of those approved within market development strategies.

At a later stage, market reports will be drafted containing the main developments and impacts in each market.

Figure 2: Process and Procedures





### **Intervention Plans**

Once the market strategies determine what CAVAC should and should not address in each market, CAVAC will engage with public and private institutions and companies to establish where common interests lie and where the Program can support and strengthen these players. Each proposal will be explicitly outlined in an intervention plan that will be approved by both the respective Sector Manager and the Team Leader. CAVAC will only engage with public and private sector partners after intervention plans have been approved. This again ensures all activities are focused to address the fundamental constraints in each market and are fully in line with the approved AWP.

### **Intervention Reports / Activity Closure Reports**

Once interventions come to an end, the Program will produce intervention reports describing the activities. The reports will capture early results and impacts. Later on, higher level impacts will also be added.

### **Impact Logics and Monitoring Plans**

Each intervention or group of interventions will have a unique results chain or impact logic, combined with a monitoring plan. This will allow the Program to follow changes and impacts in a structured way.

### **Contracting**

CAVAC has developed a procurement and grant mechanism that will allow the Program to stimulate private and public sector partners with technical support and investments. The mechanism will ensure program activities comply with contractual and legal obligations. It will allow the Program to engage in a manner that makes it a credible partner to the public and private sectors. CAVAC will use both tender and grant mechanisms. The most commonly used grant mechanisms in 2011 will be the Agribusiness Innovation Fund and the Supplementary Irrigation Fund (Program Design Document, Pages 37, 40 and 41)

## ANNEX 2: FORMAL VALUE CHAIN STRATEGIES AS AT MARCH 2012

This annex contains the following strategies:

- > Rain-fed wet season rice production, summary
- > Dry season rice cultivation, summary
- > 'Poor farmers' – Wet Season Rice Value Chain
- > Rice Export (Annexes available on request)
- > Vegetables

### RAIN-FED WET SEASON RICE PRODUCTION

#### Situation summary

Interviews with farmers showed clearly that the harvest from rain-fed fields is the basis for families' food security and income, but is rarely their only source of income. Most farmers do not show a profit-maximising behaviour, but rather a traditional low risk approach. For example, the rice seed that is used is kept from previous years or locally traded. The varieties that are suitable for the wet season

#### WET SEASON PADDY VALUE CHAIN STRATEGY:

- > Knowledge:
  - Pesticides
  - Fertilizer
  - Farming practices
  - Seed varieties
- > Seeds availability
- > Irrigation pump efficiency

conditions are meeting local tastes but generally have low yields and are less responsive to inputs.

Use of chemical fertilisers and pesticides is not common and, in the case of fertiliser, probably is perceived by growers as not always profitable for the local varieties that they use. However, more and more farmers use small irrigation pumps to protect the paddy from dry periods during the wet season.

The local variety paddy grown during wet season is milled in small local mills which can be found in every village. There is some local trade and some export to Vietnam. These local wet season varieties are not suitable for large scale re-export and therefore are consumed in Vietnam.

Cultivation of 'floating rice' in flood plains has become less and less common. The risk is perceived too high and the returns on labour too low.

#### Potential

It is unlikely that large numbers of farmers will turn into commercial profit-maximising farmers in the next five to 10 years. Thus, that will not be the aim of CAVAC. Presently, yields vary from less than one to close to three tons of paddy per hectare. It is possible and feasible to increase rice yields substantially. A key starting point will be the introduction of improved varieties. Some improved varieties are already available in Cambodia, others will need to be developed and introduced.

The improved varieties should have a similar taste to current varieties but should respond better to inputs, whether organic or chemical fertilisers. Drought, submergence tolerance, and pest resistance are three other desirable qualities; characteristics that will reduce risk for farmers. Stimulating local institutions' identification, development, production and introduction of better varieties with quality seeds can and should be a first step for CAVAC.

In parallel, access to water for irrigation and promoting access to better pest control could improve yields and reduce risks of rain-fed farming.

Driving through CAVAC's provinces during the rainy season makes the importance of rain-fed paddy unambiguously clear—all farmable land seems to be green rice fields. This means that small changes in yields can have a significant impact given the potential outreach.

## DRY SEASON RICE CULTIVATION

### *Situation summary*

Cambodian farmers have developed several mechanisms to use available water for irrigation of rice in the dry season.

The wide variety of dry season irrigated rice cultivation again makes generalisations dubious, but, for the purpose of this document, useful.

On the floodplains of Takeo and Kampot, farmers use fertiliser at rates close to the economical optimal. Interviews with farmers and traders have demonstrated that at present, most farmers have a commercial orientation towards rice cultivation. Varieties are chosen for export demand with high yields (IR 66 / IR504) or high value. Close to the border with Vietnam, farmers use large amounts of pesticides; they control rodents and experiment with other yield enhancers – not always those recommended by research findings. Yields in these areas are on average between five and seven tons per hectare. This gives a good income to rural families. Incomes are even better if available water allows for a second dry season crop. Observations show that these dry season rice farmers invest more heavily in farm mechanisation.

There is also a large group of farmers that choose another way of farming, hereby influenced by a number of NGOs. When these dry season growers follow the elements of SRI, a system of rice intensification (such as using only organic fertiliser combined with elements of botanical pest management), they have reduced input costs, but also more limited yields (often yields will be less than 3 ton / ha).

Use of inputs is, in general, significantly lower in Kampong Thom compared to the other two CAVAC target provinces. This is likely caused by Kampong Thom's weaker links with Vietnamese traders and different but more fertile soil types.

'Recession rice', a particular type of irrigated dry season rice cultivation method, is commonly used in Kampong Thom. Recession rice method involves retaining / storing flood water and continuing to use the moisture after the water retracts. Sediments left by the floods keep the soil fertile, allowing for yields up to four tons per hectare even without the use of fertiliser.

Recently more and more farmers with access to sufficient water have moved to early wet season cultivation combined with a shorter wet season crop. These are among the most commercial farmers.

Direct export of rice is still very small compared to the overall production. Recent investment in milling capacity and the Government's rice export policy show clear intentions. Developing a reliable high

#### **DRY SEASON PADDY VALUE CHAIN STRATEGY:**

- > Knowledge:
  - Pesticides
  - Fertilizer
  - Farming practices
- > Seed availability
- > Fertilizer quality
- > Pesticide availability and quality
- > Irrigation canals

quality value chain from uniform seeds to reliable quantities shipped will require efforts at different stages of the chain.

## Potential

High rice demand from Vietnam is both an opportunity and a risk. It offers an inelastic market where Cambodia can increase production without reducing the price. As such, in the short-term it would be wise for Cambodia to profit from this, whilst also developing alternative export channels to mitigate the risk of a single channel and to increase the tax base.

An average farming family with a first dry season harvest of six to seven tons per hectare and a second rice crop of four tons per hectare is well off. Takeo Province has thousands of farmers like this. The key challenge for dry season rice production is to learn from these farmers and disseminate their successes to similar farmers with much lower yields in a way that creates sustainable agricultural practices.

In an ideal situation all farmers would have access to unbiased and full information to allow them to choose the best solution for their situation. Farmers should also be able to purchase good quality inputs in well-functioning input markets that respect the law and thus, the environment. If on top there are well functioning markets for paddy or rice then yields and profits would increase to levels that significantly reduce poverty. This ideal situation is not a dream, but an achievable aim.

## ‘POOR FARMERS’ – WET SEASON RICE VALUE CHAIN

### System description

From various CAVAC studies focusing on poverty the conclusion is clear that the poorest of the poor (Category 1 poverty) in general are landless and as such do not directly benefit from CAVAC interventions (see the transmission mechanism study). Category 2 poor do have land but small plots and are not able to make significant investments in their rice production without diverting resources from other essentials such as food, healthcare, or education. This study primarily focuses on how CAVAC can include Category 2 poor to ensure that its interventions are on track to address their constraints.

#### ‘Poor’ Wet Season Value Chain Strategy:

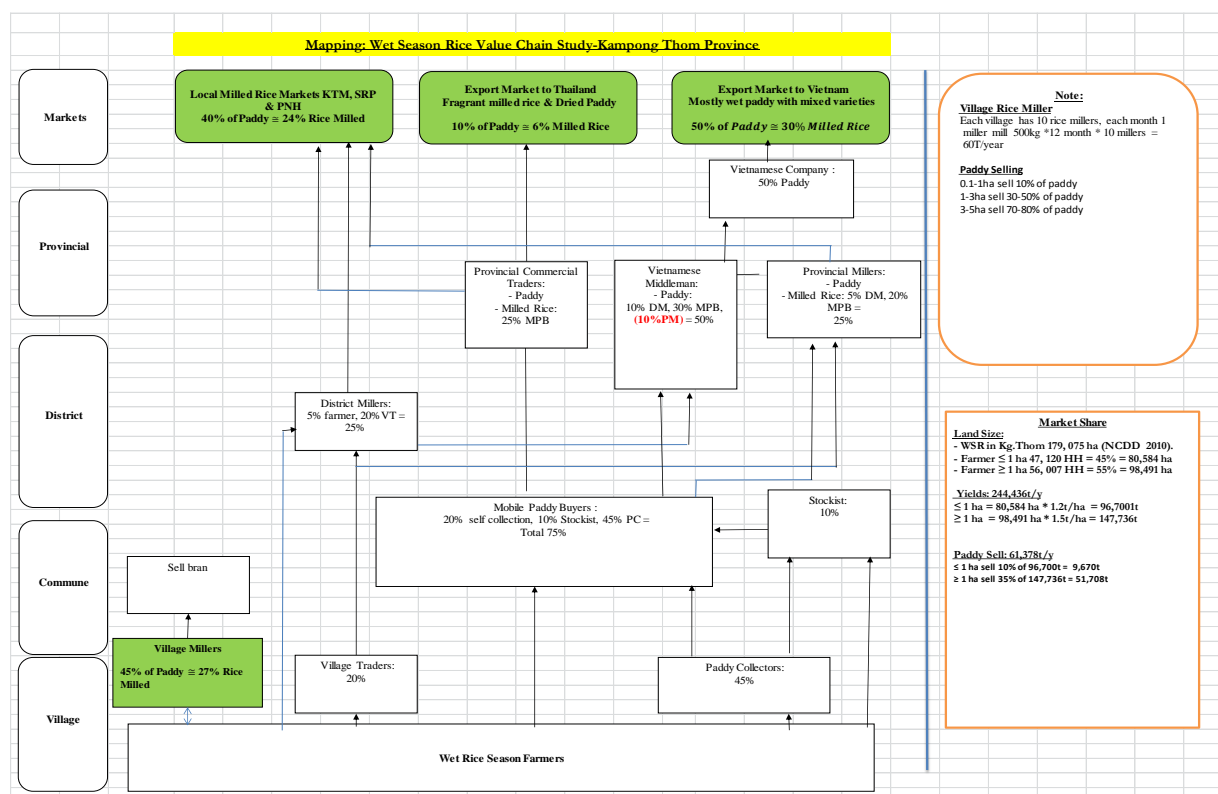
- > Main focus : Seed varieties
- > Similar to wet season

From the CAVAC perspective it’s clear that there are significant differences between wet season producers and dry season producers as reflected in the separate strategies. Through working in the various markets and through a refocusing on poverty, CAVAC thought it necessary to check whether the interventions currently targeting the wet season producers would be sufficient to target the poorest segment of the wet season rice producers.

For this, CAVAC did value chain assessment in the poorest districts of our poorest target province (Kampong Thom) and then extrapolated the results to the whole of Kampong Thom based on the poverty incidence rates of the ID-Poor program.

Below is the value chain map of wet season rice production in Kampong Thom. (Figure 3) What is immediately apparent is the small amount of paddy that is actually traded; it is only 25% of the total yield in the wet season in Kampong Thom.

Figure 3: Mapping West Season Rice Value Chain – Kampong Thom Province



Currently the poorest wet season farmers are in a similar situation as the majority of wet season farmers. They don't use inputs to their fullest potential; the lack of investment is derived from the yield uncertainty. However there are some circumstances that make this a more significant constraint.

Generally the poorer wet season producers live in more remote areas with less access to service markets and therefore more difficult to access with new production methodologies or other technological changes. However they do reach the poorest farmers but the support services required to make the change may not be present or a precondition to have a more commercial outlook on production is not addressed (increased yield certainty).

Looking at the value chain map, the poor wet season producers are represented by the bottom right box, which represents about 45% of the paddy produced. These producers pay for the milling through the bran that is left behind and is sold by the miller as pig feed. The rice is taken back and is used in household consumption of the producer. It is estimated that about 30% of the wet season producers are totally or to significant extent in this system in Kampong Thom. This would mean that there are about one hundred thousand households to a significant extent relying on this system.

### Constraints

To increase wet season productivity there will need to be a greater security in reaching at least a household food security level of rice production. Currently many households are not certain of achieving this level of production and there are three main constraints for this.

**Poor water management**

At the time of the research Kampong Thom was just recovering from severe flooding which in the most affected parts had decimated the harvest. This somewhat skewed the perceptions of respondents. Conversely most wet seasons have a significant dry spell in July-August which can negatively impact yields.

Due to the issues around water management and the significant impacts this can have on yield certainty, farmers are less willing to invest in their wet season production.

**Local consumer preference**

Historically the primary purpose of the wet season harvest has been own consumption. Many wet season farmers still have this perspective and only sell the surplus. Their preference is for traditional varieties which usually are low yielding (max 2 tons / ha) but easy to produce with little inputs.

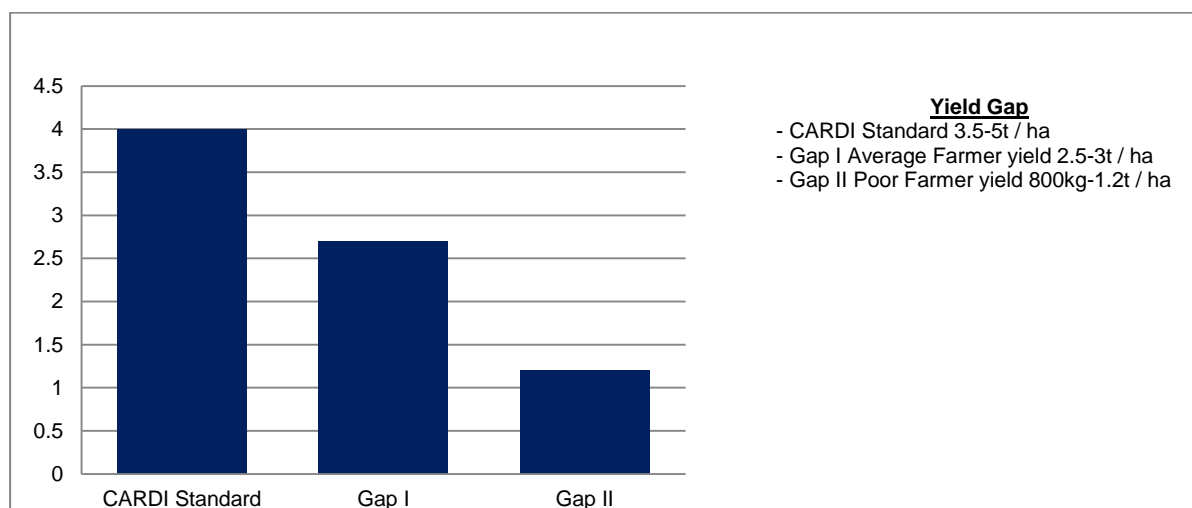
**Subsidiary constraints**

Inputs are being used sparingly due to the uncertainty of increased income if they use inputs. The knowledge on and availability of inputs is limited. It is also noted that farmers who are more commercial in their production outlook in communities that are predominately not are willing to travel significant distances to purchase and get advice on input use. Amongst the particular constraints mentioned by many wet season producers for paddy production are rats. Investment in rat prevention / control will only happen if the first two constraints can be successfully addressed.

**Opportunities**

The wet season rice production is steadily commercialising, this is driven by rapid economic growth over the last years which has increased the availability of information and the reach of service markets reducing the risk of a shift in production. Another factor is the paddy production and rice export strategy of the Royal Government of Cambodia (RGC) which has provided the support services of the Cambodian Government with a much more commercial and conventional outlook on rice production.

Amongst modern wet season varieties, some are fragrant varieties; these are highly valued in the export and the domestic high end markets. This expresses itself in a price differential of between 300 to 500 Riels / kg. Additionally a variety such as Phka Rumduol has an achievable yield of 4 tons / ha for average producers. This has generated a shift towards Phka Rumduol as surplus land not required for own consumption is being used to produce Phka Rumduol.

**Figure 4: Wet Season Rice Yield Gap**

This is now starting to shift towards producers producing Phka Rumduol and with the surplus income buying back traditional varieties to satisfy local preferences. Because of the relatively modest area under Phka Rumduol this has not yet resulted in a shift in price for traditional varieties.

To provide somewhat of a yield certainty the impacts of the wet season dry period and the potential of flooding should be considered. There are two opportunities available; the first is the introduction of flood tolerant varieties, the other is to reduce the cost of pumping water for supplementary irrigation in the wet season.

Significant efficiency gains of 50 % can be made improving the use of existing pumps. This will reduce the cost of pumping water and increase the willingness of poor wet season producers to invest in supplementary irrigation, increasing their willingness to do further investments in improving yield.

Varieties such as Phka Rumduol are moderately flood resistant and therefore further decrease the risk of changing variety.

### ***The strategy***

Many of the activities to reach the poorest wet season producers are already being conducted by CAVAC. Phka Rumduol is being introduced through field demonstrations with associations. Input retailers are being trained and work on pump efficiency is progressing. However to encourage the poorest wet season farmers more needs to be done to ensure that these services are available at the same time.

### **Pathway 1**

The best methodology to reach these farmers is through the demonstration effect of model farmers. By decreasing the cost of pumping, cheaper supplementary irrigation will be available to farmers, it is expected that an additional 5% of producers will adopt supplementary irrigation per annum if the cost of irrigation would increase by (to be determined)%. This would increase the willingness to invest in production and would increase yield by about 10 to 15% based on improved fertiliser use. Practically this would mean that per annum about 3000 producers would improve their yield from 1.3 tons per ha to 1.4-1.5 tons per ha assuming they continue to produce traditional varieties.

## Pathway 2

Farmers that change their variety to Phka Rumduol will probably not do this without the assistance of supplementary irrigation. The changes in variety will potentially double their yield. It's expected that fewer farmers will adopt this more significant change in production, and that only 1500 farmers per year will adopt this in the first year. Due to the significant changes in income this will spread much more quickly through the community and it's foreseen that number will increase by 50% every subsequent year.

To ensure that both Pathway 1 and 2 farmers benefit optimally and increase their yield security, CAVAC will try to introduce appropriate crop protection methodologies against rats.

## RICE EXPORT STRATEGY

### Sector Overview

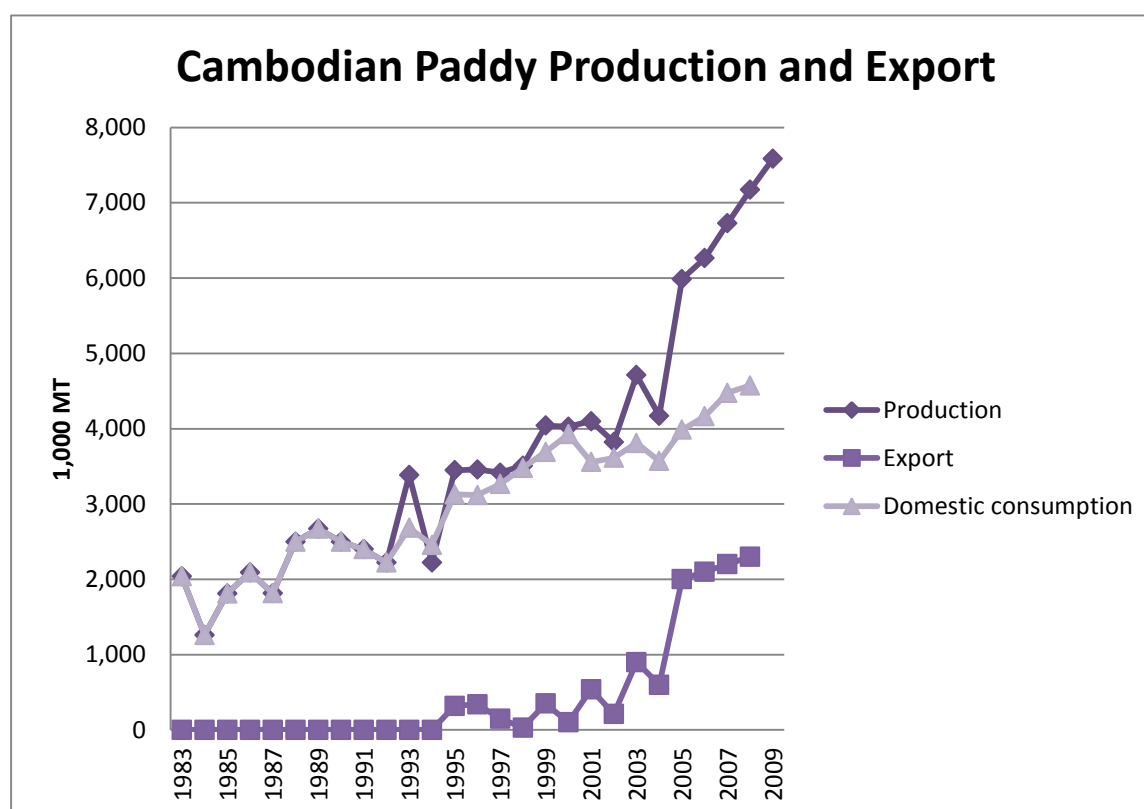
#### Cambodian Rice Export

Cambodia has been exporting a small rice surplus since 1995 when it reached self-sufficiency status. The increased productivity is due to the increase in arable land and the improved yield<sup>4</sup>.

#### Rice Export Value Chain Strategy:

- > Supporting models (contract farming)
- > Supporting market access
- > Storage systems
- > System 14

Figure 5: Cambodian Paddy Production and Export



Source: ASEAN Food Security Information System

<sup>4</sup> Bingxin Yu, Rice Production Response in Cambodia (Authors' calculations from USDA 2008b)

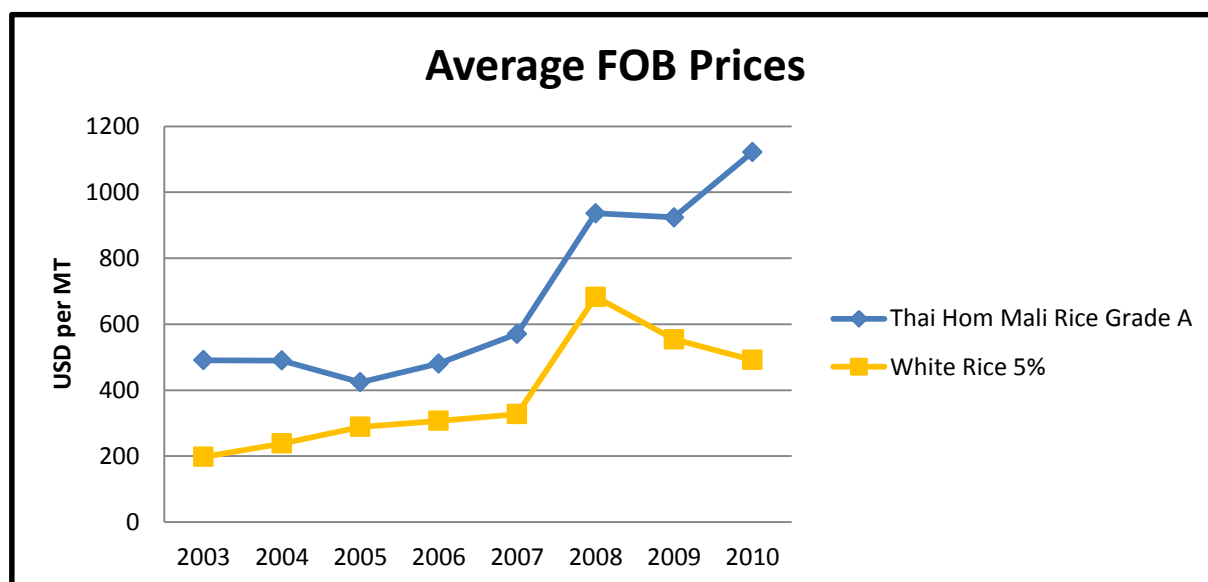


The official statistics in 2009 recorded only 13,000 tons of milled rice or 20,000 tons of paddy rice export, in reality Cambodia actually exported much more milled rice<sup>5</sup>. This is due to the high percentage of Cambodian rice exports travelling through unofficial border trade with Vietnam and Thailand. Cambodia exports paddy rice for milling in Vietnam and Thailand, then Vietnam and Thailand re-export Cambodian rice to the world market. In 2008 the Cambodian Government announced an exportable surplus of 3.2 million tons of paddy which represent a value of \$350-\$400 million. If this paddy had been processed in milled rice locally, it would bring at least another \$75 million while at the same time provide (1) employment opportunities; (2) tax revenue to the state; and (3) rice bran to domestic livestock industry<sup>6</sup>. The key obstacles in Cambodian milled rice export include poor infrastructure, lack of modern milling facilities, and high export clearance charges in Phnom Penh and Sihanouk Ville<sup>7</sup>.

Having seen obstacles and the near-record world rice price in 2008, Cambodia has started investing in its infrastructure. In particular there are significant new investments in both expanding existing mills and new mills. In 2010, the Cambodian Government launched the policy on the promotion of paddy production and the export of milled rice. Cambodia has also removed the requirement for rice export licenses and is now implementing an open agricultural policy to boost rice export to one million tons by 2015<sup>8</sup>.

The price of milled rice is derived from the price of rice set in Thailand, who is the export leader on the international rice market. The below graph (Figure 6) illustrates the price of two types of milled rice: (1) Thai Hom Mali Rice Grade A (Fragrant) – which is the premium quality milled rice; and (2) 5% Broken White Rice. These two types of milled rice are exported by Cambodia.

**Figure 6: Average Free on Board Prices**



Source: Thai Rice Exporters Association

<sup>5</sup> Policy Document on the Promotion of Paddy Rice Production and Export of Milled Rice, 2010

<sup>6</sup> A Road Map for Cambodia Rice Exports by Tom Slayton, Centre for Global Development

<sup>7</sup> A Road Map for Cambodia Rice Exports by Tom Slayton, Centre for Global Development

<sup>8</sup> Rice Today October – December 2010

The trend of international rice prices for fragrant rice is increasing in the 21<sup>st</sup> century based on:

- > Supply and demand: Demand is increasing since many countries in Sub-Saharan Africa and Middle East which are the non-traditional rice consuming countries increase their rice imports substantially;
- > Increasing commodity price of corn, wheat and soya bean;
- > Speculation of rice traders and importers; and
- > Governments' intervention in local countries for food security reasons.

Governments worldwide responded to the increasing rice price by increasing their stocks of rice and stimulating local production.

### **Cambodian Rice Types and Standards**

Out of the total paddy production of 7,585,000 tons in 2009; 80% or approximately 6 million tons are from wet season and 20% or approximately 1.6 million tons are from dry season<sup>9</sup>. In the local market<sup>10</sup>, paddy is classified into three categories: (1) aromatic varieties; (2) mixed varieties; (3) dry season varieties.

- > The aromatic varieties category refers to aromatic long grain types of paddy. Aromatic rice, is mostly considered as premium rice, it accounts for 10% of the total production in Cambodia<sup>11</sup> and is mostly is grown in the wet season. The availability of aromatic paddy based on the total production of 7,585,000 tons in 2009<sup>12</sup> is 758,500 tons. It can be assumed that the aromatic milled rice is 303,400 tons based on a 40% milling yield of head rice<sup>13</sup>. Aromatic rice varieties include Pkar Romdol, Pkar Romdeng, Pkar Romeat (Jasmine type) all are amongst the 10 varieties selected by MAFF for the rice export strategy.
- > Mixed varieties category refers to wet season non-aromatic types of paddy. This category is mixed by long, medium, and short grain-types of paddy. This category's varieties quality is considered as lower (in terms of softness, fragrance, stickiness) than the aromatic varieties and therefore the price is also cheaper.
- > Dry season varieties categories are mostly IR varieties and are perceived as the lowest quality (in terms of softness, fragrance, and stickiness).

<sup>9</sup> CARDI's Report, 2009

<sup>10</sup> Based on CAVAC's survey 2010 in Kampot and Takeo

<sup>11</sup> Rice in Cambodia, Men Sarom 2007

<sup>12</sup> ASEAN Food

<sup>13</sup> EIC's rate

**Table 7: Classified Cambodian Rice Type and Volume**

Rice Type in Market	Production Season	Volume in %	Paddy Volume in Metric Ton (2009 or 7,585,000 ton)	Milled Rice Volume in Metric Ton (2009) based on 40% head rice milling rate
Aromatic (High-end Jasmine type)	Dry Season	–	–	
	Wet Season (Jasmine type)	10%	758,500	303,400
Non Aromatic (Low-end White Rice type)	Dry Season (IR varieties)	20%	1,517,000	606,800
	Wet Season (Mixed varieties)	70%	5,309,500	2,123,800

The production choice of the above rice varieties (Table 7) is normally based on the condition of land, weather, irrigation, and rice seed availability. To understand its profitability, four scenarios are identified as follows:<sup>14</sup>

**Table 8: Scenario 1 – High yield with high price**

Season	Type	Yield (high), kg	Price (high), USD	Gross Income, USD	Expense (high), USD	Profit, USD
Wet	Aromatic	4,000	0.38	1,500.00	600	900.00
Wet	Mixed	4,000	0.30	1,200.00	600	600.00
Dry	IR	5,000	0.28	1,375.00	800	575.00

**Table 9: Scenario 2 – High yield with average price**

Season	Type	Yield (high), kg	Price (ave), USD	Gross Income, USD	Expense (high), USD	Profit, USD
Wet	Aromatic	4,000	0.30	1,200.00	600	600.00
Wet	Mixed	4,000	0.25	1,000.00	600	400.00
Dry	IR	5,000	0.25	1,250.00	800	450.00

**Table 10: Scenario 3 – Average yield with high price**

Season	Type	Yield (ave), kg	Price (high), USD	Gross Income, USD	Expense (ave), USD	Profit, USD
Wet	Aromatic	2,000	0.38	750.00	400	350.00
Wet	Mixed	2,500	0.30	750.00	400	350.00
Dry	IR	4,300	0.28	1,182.50	800	382.50

**Table 11: Scenario 4 – Average yield with average price**

Season	Type	Yield (ave), kg	Price (ave), USD	Gross Income, USD	Expense (ave), USD	Profit, USD
Wet	Aromatic	2,000	0.30	600.00	400	200.00
Wet	Mixed	2,500	0.25	625.00	400	225.00
Dry	IR	4,300	0.25	1,075.00	800	275.00

<sup>14</sup> CAVAC's estimation based on CARDI and AQIP advised application. The details of expenses are in appendix 1.

The above scenarios (Tables 8–11) indicate that the production of aromatic paddy varieties is more profitable with both cases of high and average price when its yield is high. However, the high yield may not be obtained by general farmers who are faced with the lack of input and knowledge. Therefore, the answer to the question of why the aromatic varieties paddy is only 10% of Cambodian total paddy production is that with low yield, aromatic varieties are not profitable for farmers, even though its price is higher than the other varieties.

Cambodian Government has not set a milled rice standard yet. Most rice exporters use Thai standards as their basis for any deal. Milled rice has been mainly categorised in two types – fragrant and non-fragrant; it breaks down further by percentages of the crop being broken. The non-fragrant is synonymous with ‘White Rice’. The bestselling type at the moment is the premium aromatic long grain milled rice, branded as Cambodian Jasmine or Somaly which competes with Thai Hom Mali rice. Apart from aromatic rice, there are rice-types similar to Thai White Rice; these rice types include both mixed varieties and dry season varieties and are subdivided into long grain, medium grain and short grain.

### Government Policy

The Royal Government of Cambodia has launched the policy on the promotion of paddy production and milled rice export with a three-pronged strategy: (1) productivity enhancement, (2) diversification, and (3) agricultural commercialisation. The medium-term objective aims at achieving one million tons of milled rice exports by 2015, the key areas of improvements are:

- > infrastructure building and enhancement (roads, irrigations, energy / electricity and ICT);
- > improvement of extension services and agricultural inputs;
- > land management reform;
- > finance;
- > marketing;
- > farmer organisation; and
- > institutional building and coordination.

To achieve the above objective of the government, General Directorate of Agriculture’s proposed an action plan focusing on:

- > infrastructure:
  - establish R&D, technology generation and transfer; and
  - construct SPS laboratory.
- > marketing system development:
  - promote SPS among farmers, producers and agricultural traders;
  - product quality improvement (pre- and post-harvest management);
  - marketing development (Contract farming);
  - strengthening of agricultural support services; and
  - strengthening laws and regulations.

- > market identification
  - target exports of milled rice to countries providing preferential market access for Cambodia (China, Philippines, Nigeria, and Arabic countries); and
  - target exports of milled rice to developed countries through international trade fair (promote quality, organic, aroma and flavour).

Cambodian government policy on milled rice export includes the promotion of 10 potential varieties as listed in Table 12:

**Table 12: Promoted varieties of milled rice**

No.	Variety Name	Recommended Season	Grain Type	Yield range (t / Ha)	Market grade
1	Phka Rumduol	Rainfed lowland – medium / aromatic	Long slender	3.5	Premium
2	Phka Romdeng	Rainfed lowland – medium / aromatic	Long slender	3.5	Premium
3	Phka Romeat	Rainfed lowland – medium / aromatic	Long slender	3.5	Premium
4	Sen Pidao	Rainfed lowland – early Dry seasons	Long slender	3.5	Premium
5	CAR 4	Rainfed lowland – medium / late	Medium	3.5	No. 1
6	CAR 6	Rainfed lowland – medium / late	Medium	3.5	No. 1
7	Riang Chey	Rainfed lowland – medium	Medium	3.5	No. 1
8	Phka Chan Sen Sor	Rainfed lowland – late	Long slender	3.5	No. 1
9	Chulsa	Rainfed lowland – early Dry seasons	Long slender	4.0	No. 2
10	IR 66	Rainfed lowland – early Dry seasons	Long slender	4.0	No. 2

Source: CARDI

The Ministry of Commerce who plays a key role in Rice Export has also prepared an action plan in support to the national Rice Export policy:

Short-term action plan:

- > conduct a workshop on export procedures (millers association);
- > set up the necessary legal procedures for rice export and one window workforce;
- > enable Camcontrol to do the physical quality checks;
- > prepare standard legal documents and strengthen its implementation for Cambodian milled rice;
- > conduct market studies; and
- > establish paddy-milled rice information office within Green Trade and milled rice associations.

Medium- and long-term action plan:

- > promotion of relevant laws;

- > promotion of the competitiveness law;
- > prepare a clear export competitiveness strategy;
- > conduct market studies and negotiations;
- > capacity building to relevant officials; and
- > organise rice events and encourage rice investors.

### Investment Updates

There are increasing numbers of investments in the rice sector coming from Malaysia, Vietnam, China, and Thailand in 2009 and 2010. Below are quotes from newspapers for reference:

- > BROTHERS INVESTMENT GROUP CO., LTD and American company VSJMAXX signed a US\$5 million joint venture to invest in an animal feed factory and a rice mill. The investment for the rice mill in Oddar Meanchey is US\$3.2 million<sup>15</sup>.
- > Cambodian and a Malaysian state owned company (BERNAS) have a joint venture to form Scham Rice Cambodia Company in order to export rice to Malaysia. This company plans to invest US\$8 million in building a rice mill and start with rice seed production. The future plan is to increase investments to US\$500 million in the next five-years to grow rice in Kompong Thom province<sup>16</sup>.
- > Gongxi Guahong has invested US\$5 million in building a rice mill in Oudong province<sup>17</sup>.
- > Bangladesh is to take Cambodian land on lease to produce rice<sup>18</sup>.

### Constraints and Analysis of Cambodian Rice Export

#### Input level

##### **Limited access to working capital to buy and store paddy**

To buy up the marketed surplus of 3.2 million tons of paddy, which in most locales comes from a single harvest, US\$800 million of financing is required<sup>19</sup>. Bank loan requirements such as collateral, clear financial statements and a bank guarantee are obstacles for most rice millers in getting access to working capital loans given the nature of their emerging family business.

- > A number of commercial banks have started to open more to the rice sector.
- > The World Bank in December 2010 approved a project of US\$2.5 million for Cambodian Agribusiness Access to Finance.
- > The Government has also offered more working capital loans through the Rural Development Bank.

<sup>15</sup> Source: Jia Hua Daily News, August 28<sup>th</sup> 2010

<sup>16</sup> Source: Cambodia Sin Chew newspaper, October 27<sup>th</sup> 2010

<sup>17</sup> Source: Chinese Cambodia Economic Magazine, September 2010

<sup>18</sup> Source: cm226@cornell.edu

<sup>19</sup> Estimated price at US\$250 per Metric Ton paddy

### Lack of reliable supply (Quality and Quantity)

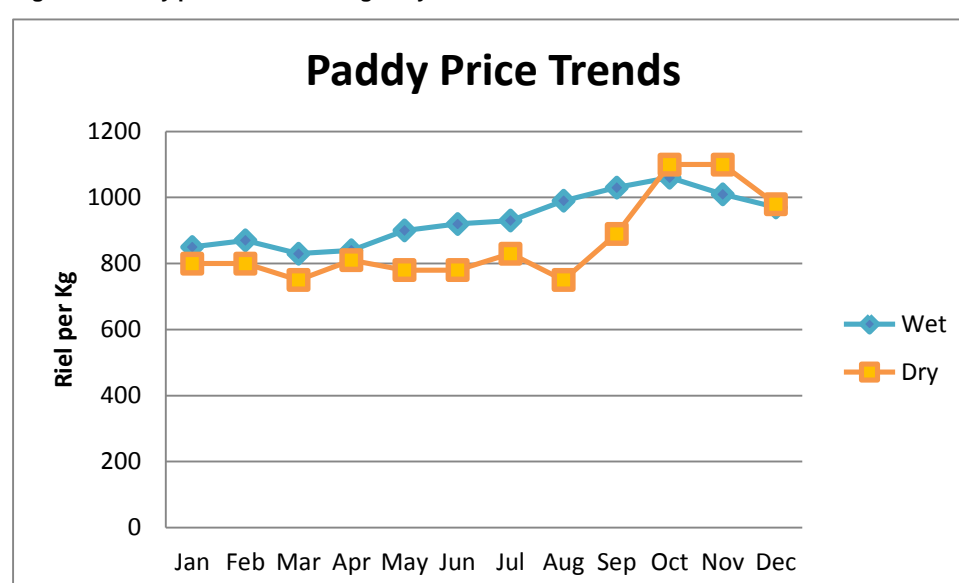
Reliable supply in both quality and quantity is a major concern for many rice millers / exporters. Given this key constraint, some rice millers lose business opportunities because they hesitate to accept long-term agreements with their clients as they are not sure whether they will be able to comply with the quantity and quality conditions in the agreement. The quality of paddy is a key factor in milling profitability. The paddy moisture content has to be less than 14% to avoid a high broken percentage after milling and to ensure the quality of the milled rice. The Paddy surplus should be sufficient to supply one million tons of milled rice for export. However, it requires significant amounts of working capital to buy and store the required paddy given the single harvest of paddy. Currently the single harvest of paddy is bought up by Vietnamese and Thai traders who offer competitive prices and don't have significant quality requirements, conditions favourable to Cambodian farmers. The below table (Table 13) will highlight the paddy production period and availability typically in Cambodia.

**Table 13: Paddy production period and availability during the year**

Month	January	February	March	April	May	June	July	August	September	October	November	December
Varieties available	Wet + Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Wet	Wet	Wet	Wet + Dry
Comments		No collector (Vietnamese new year)		No collector (Khmer & Thai new year)	Beginning of wet season production			Flood				
	Aromatic paddy may be stored at millers					Aromatic paddy is run out of stock at millers						

With Table 12, millers may buy and store the most wanted aromatic paddy for three to six months depending on their working capital availability and their storage capacity<sup>20</sup>. The price of paddy peaks in October and starts decreasing from November or December as illustrated in Figure 7.

**Figure 7: Paddy price trends during the year**



<sup>20</sup> Golden Rice who is one of the 10 large rice mills in the country also faces shortages of paddy after June.

Many rice millers / exporters are looking for solutions to this problem through the formation of networks to supply each other when needed.

## **Production level**

### **Limited credit for mill modernisation**

Cambodia has approximately 1,000 commercial mills that mostly have capacity of no more than 2.5 tons / hour<sup>21</sup> and operate no more than 10 hours per day. Recent investment in milling facilities has established approximately 10 large rice mills with a capacity of more than 9 tons per hour<sup>22</sup>. However, this capacity is still not sufficient to mill one million tons. Mill modernisation requires a high level of investment and high management ability.

Some rice millers partner with private investors to develop their milling facilities.

There has been attention from the Government and Development Partners into the matter. Rural Development Bank has budgeted \$16 million for loans to rice millers. Recently, Rural Development Bank has also received \$23 million in funding from three domestic banks, BIDC, FTB, and Canadian Banks<sup>23</sup>.

Agence France de Development: L'Agence Française de Développement (AFD) will also launch a €15 million finance guarantee project for the development of milling facilities in partnership with commercial banks.

The World Bank in December 2010 approved a project of US\$2.5 million for Cambodian Agribusiness Access to Finance.

### **High milling costs because of expensive energy costs**

The energy cost is \$0.18–0.37 per kilowatt in Cambodia while \$0.05 in Vietnam. And energy cost is the main cost-driver in milled rice price.

Rice husk technology may be a solution, and this technology has been used by a number of rice mills in the north-western provinces of Cambodia.

There are also investments from China in hydro-electricity where the energy cost is expected to be lower in the next five years.

### **High export clearance charges**

There are separated procedures for rice export with the Ministry of Economy and Finance – Directorate General of Customs and Excise; Ministry of Commerce – CAMCONTROL and MAFF (Committee for the Promotion of Agricultural Export) that results in high formal and informal fees.

One of the government improvement plans is the institutional building and coordination to facilitate the promote rice export. The Ministry of Commerce is the lead Ministry in forming one window rice export application.

<sup>21</sup> JICA 2001

<sup>22</sup> Appendix 2: List of large rice mills / exporters in Cambodia 2011 (CAVAC)

<sup>23</sup> Phnom Penh Post, Tuesday 16 November, 2010



### **Lack of management knowledge**

This constraint occurs even more with small and medium rice mills<sup>24</sup> who wish to emerge and become rice exporters. Management knowledge is vital in managing the enterprise efficiently and also in dealing with international trade.

Some development partners (IFC, AFC and EU) are working on rice miller's capacity building as it also links to their intervention on rice mill modernisation. To be able to get a loan to upgrade their milling facilities, rice millers should have a certain capacity to do so.

### **High transportation cost (including informal road fees)**

The fee is \$15 / ton / 100kms; double the cost in Vietnam and nearly four times the cost in Thailand. The cost of transporting rice from the rice miller to the port involves many informal fees along the road. This accounts for approximately 50% of the total transportation fee.

The Ministry of Commerce's proposed action plan to promote milled rice export has also highlighted the measures to ease the matter.

The transportation fee is also expected to decrease in the next 5 years once the ASEAN railway is in place.

### ***Lack of national grade standard and quality control***

Generally paddy grains are immature and the broken percentage is around 20-30% broken in the domestic market due to over and uneven drying of paddy. In the urban market, rice may be classified in Grade 1 and Grade 2 based on the appearance of the rice. The rice for export has to be (1) in whole grain (No broken rice); (2) the grains are of uniform size; and (3) uniform colour<sup>25</sup>.

Rice importers from developed countries are very concerned about quality assurance and food safety handling. All food businesses within the EU and US, except primary producers, have to operate food safety management procedures based on Hazard Analysis Critical Control Point principles. Other potential rice importers from ASEAN countries and China also have to comply with their region's SPS regulations. Lately, Cambodia and China have just signed a Memorandum of Understanding regarding Phytosanitary requirements for Cambodian milled rice exports to China. Thus, a barrier to further export growth in SPS sensitive products like rice into all potential markets relates to sanitary conditions, analytical surveillance, the lack of certification and product traceability.

The Ministry of Agriculture's General Directorate of Agriculture is planning to establish quality control infrastructure (SPS) and to promote the quality among farmers, producers and agricultural traders.

The Ministry of Commerce also plans to install quality control facilities and draft the quality standard sub-decree.

<sup>24</sup> The commercial mills are generally divided into three classes based on their hourly capacity: small – 500-700kg, medium – 700-1,200kg, and 'large' – more than 1,200kg. DAI (2008)

<sup>25</sup> According to Mao Thora, Secretary of State, Ministry of Commerce

## Market level

### Lack of export market knowledge and competitive strategies

Cambodia is a new player in the international milled rice trade. Therefore, the lack of export market knowledge and the lack of networks are key challenges.

Most large rice millers / exporters invest in trade by organising trips to the potential export markets such as US, EU, Canada, etc. However, their trade visits are more focused on the Cambodian community overseas.

A study of the EU market led by the Trade Promotion Department funded by the AFD was conducted in late 2010.

With the below table of cost comparison with Thailand and Vietnam in the milled rice industry (Table 14), it indicates that Cambodia's competitiveness comes from lower cost of paddy production and tax incentives to the European market. Cambodia loses in competitiveness to Thailand and Vietnam in energy cost, trucking and clearance, and sea freight.

Table 14: Cost Comparison of Milling Cambodian Paddy with Thailand and Vietnam

<b>Cost Comparison of Milling Cambodian Paddy</b>						
	<b>High-end (Jasmine Rice)</b>			<b>Low-end (White Rice)</b>		
	KH	TH-KH	VN-KH	KH	TH-KH	VN-KH
<b>Marginal Costs (\$/T-FOB)</b>	<b>781</b>	<b>718</b>	<b>715</b>	<b>523</b>	<b>460</b>	<b>457</b>
Paddy *	925	963	963	633	671	671
Energy	90	26	19	90	26	19
Other Direct Costs	25	25	25	25	25	25
Trucking & Clearance	35	15	20	35	15	20
Sale of sub-products	-294	-311	-311	-260	-278	-278
<b>Possible Gross Margin (\$/T)</b>	<b>89</b>	<b>282</b>	<b>105</b>	<b>-28</b>	<b>90</b>	<b>38</b>
Sale Price (\$/T) **	870	1,000	820	495	550	495
<b>FOB Cost Competitiveness (\$/T)</b>	<b>0</b>	<b>-64</b>	<b>-66</b>	<b>0</b>	<b>-64</b>	<b>-66</b>
Sea Freight (\$/T)	0	-10	-10	0	-10	-10
Tax on Imports to Hong Kong	0	0	0	0	0	0
Tax on Imports to EU	0	228	228	0	228	228
<b>Overall Cost Competitiveness (\$/T)</b>						
If export to Hong Kong	0	-74	-76	0	-74	-76
If export to EU	0	154	151	0	154	151

Source: EIC calculations, based on interview with industry's players

**Note:** KH = Mill Cambodian paddy in Cambodia; TH-KH = Mill Cambodian paddy in Thailand; VN-KH = Mill Cambodian paddy in Vietnam; \$ / T = US dollar per metric ton of head rice; Negative sign in 'Cost Competitiveness means the cost is lower by that negative amount; Head rice rate is assumed to be 40%; \* Paddy price is assumed to be US\$370 per ton for Jasmine type and US\$273 per ton for White paddy rice type; \*\* Based on indicative international market price.

### Rice Export Strategy

In Cambodian Rice Export, the focus should be in the aromatic rice value chain. The main reasons for selecting aromatic rice are:

- > higher profitability;
- > best export potential;
- > the price's trend is increasing; and
- > aromatic rice are wet season varieties in which more producers are more likely to be poor.

According to the Provincial Department of Agriculture in the three target provinces of CAVAC, in 2009 the estimated aromatic paddy production is approximately 12,000 tons in Takeo, 250 tons in Kampot, and 24,000 tons in Kampong Thom. The aromatic paddy production in the three provinces represents only 5% of the countries aromatic paddy production or 0.4% of total paddy production in Cambodia.

Eventually it's expected that yields of aromatic varieties will increase from currently 1.5–1.8 tons per hectare to closer to three tons per hectare. CAVAC's rice strategy focuses on the improvement of input supply market, thus enabling the yield of paddy to increase as this would further increase the profitability aromatic paddy and would assist farmers in achieving a higher income<sup>26</sup>. In general there is potential to increasing aromatic rice production by increasing acreage. Therefore, by targeting constraints in the production of aromatic rice, it would potentially assist poor farmers in reducing poverty.

Within the constraints of aromatic rice exports and taking into consideration activities being conducted by other donors within the rice value chain, CAVAC considers working on the following two constraints.

- > lack of reliable supply, quality and quantity; and
- > lack of export market knowledge and competitive strategies.

First, by tackling the above constraints at the millers, it is likely to contribute to the development of the output product market for farmers. As mentioned in the constraints section above, the improvement of export markets knowledge among millers / exporters will help increasing the export of milled rice as the millers / exporters would understand better the requirements of the targeted export markets to be able to prepare their competitive strategies in those markets. Ultimately, the increased export of milled rice is expected to improve the paddy market through the increased demand and the incentives of good quality products. Furthermore, the maintaining of paddy supply to millers may help in maintaining favourable paddy price for farmers. For example, the warehouse receipt system may be an intervention where the millers can secure paddy supply for the whole year and the farmers have more choice in selling their paddy. With better knowledge of export market, millers / exporters may also be the key actors in linking input supplies with production and output product markets that will finally improve the quality in the long term.

Second, there is not much support at the moment from other development partners and agencies. CAVAC's expertise of paddy production would be the most suitable to contribution to the linkage of input supplies with production and output product markets.

## VEGETABLES

The structure of the provincial vegetable value chain (Figure 8) can be confusing, with one actor having many roles. This lack of specialisation is often indicative of a nascent value chain.

The structure of the vegetable value chain in Takeo and

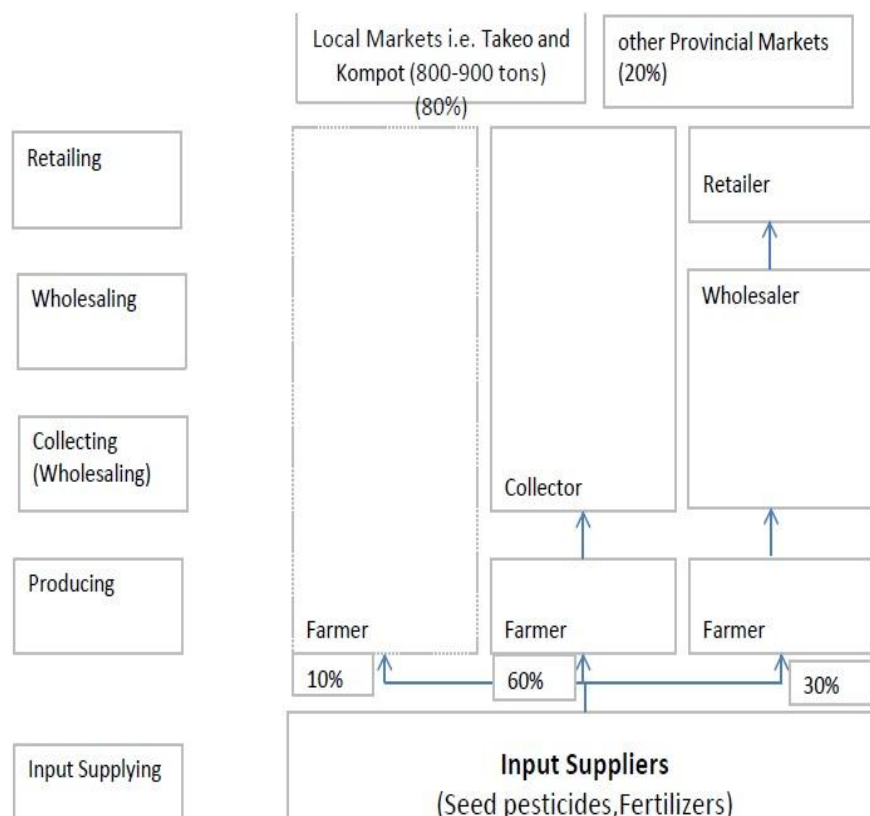
### Vegetable Strategy:

- > Knowledge through seed sellers
- > Irrigation
- > System 15

<sup>26</sup> As in table 2 and 3

Kampot provinces are similar. Sales from a farmer to a collector are the predominant channel, and the collector combines the functions of collecting, wholesaling and retailing. The minority of the crop (20%) is transported outside of the local district to the provincial capital and Phnom Penh.

**Figure 8: Provincial Value Chain Map for Vegetables**



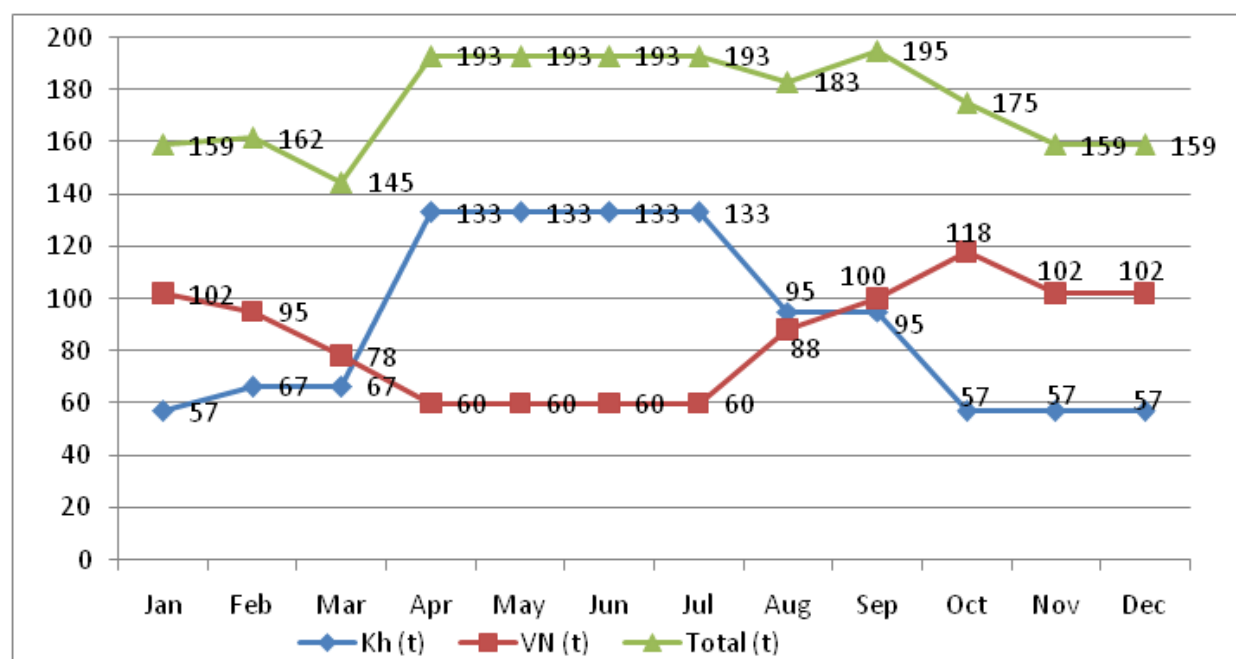
### Seasonality of demand and production

A key finding of the value chain analysis in vegetables is that the industry is rapidly growing with quotes of a 10% per annum increase, indicating that the vegetable sector in Cambodia is showing signs of rapidly expanding. This anecdotal evidence is supported by field observations of producers transforming their rice fields into vegetable plots by raising the level of the land through land filling of their rice fields.

This growth rate is supported by the demographics of Cambodia with an annual population growth of 1.7%. Significantly Phnom Penh has a wealthier middleclass that diversifies its diet away from a one which consists mainly of rice and fish. The national per capita consumption of vegetables is 30.8kg while in other South East Asian nations it can be up to 120kg / capita / year. Urbanisation and the increased spending power of the middleclass in Phnom Penh means that the domestic market has the largest growth potential.

For many products, supplies from Vietnam are supplements for domestic production rather than direct competition, meaning that excess demand is supplemented by imports from Vietnam. This has to be classified with the exception of temperate vegetables such as carrots, cabbages, potatoes and onions which will remain to be sourced for the medium- to long-term from Vietnam, as there are no significant production areas with an appropriate Agro-Ecological Zone in Cambodia.

Figure 9: Daily vegetable supply to Phnom Penh



The supplemental nature of Vietnamese vegetables can be derived from Figure 9 the gap between total demand and Cambodian supply is the potential for Cambodian vegetable to supply to Phnom Penh after the demand for temperate crops has been deducted

Potential growth:

The per capita consumption of Cambodia compared with its neighbours is relatively low while the WHO recommended intake is 146kg / capita / year. Comparing the Cambodian per capita consumption with most of its neighbours indicates that there is still latent demand to be accessed (see Table 15), although at a lesser level than the WHO recommended consumption.

Table 15: Cambodia and neighbouring countries per capita consumption of vegetables

Country	Per Capita Annual Vegetable Consumption in 2007
Cambodia	30.8kg
Myanmar	61.0kg
Lao	117.2kg
Vietnam	80.0kg

(Source FAOSTAT)

Based on the data supplied by traders and importers of vegetables, the per capita consumption of vegetables in Phnom Penh is 50kg per annum<sup>27</sup>. This relates well to the national average of 2007 as it is expected that vegetable consumption in the most affluent area is significantly higher than the national average.

<sup>27</sup> Based on a population of 1.3 million based on the 2008 census of Cambodia

To summarise – the market demand for quality vegetables is constantly increasing which is reflected by comments from traders. Statistics on national vegetable consumption indicate significant potential for increased per capita consumption in Phnom Penh and probably the provincial markets.

Vietnamese vegetables supplement Cambodian vegetables. Cambodia does not have suitable productive land available in temperate agro-ecological zones to substitute for temperate vegetables to be imported from areas such as Dalat in Vietnam. This reduces the potential demand for Cambodian vegetables by a significant amount every day.

Depending on seasonal characteristics of demand and the seasonality of production, the opportunities for domestic vegetable production varies with the largest potential in the late dry season and early rainy season and at the end of the rice wet season rice crop. Both periods have specific constraints which limit production.

### Constraints

The seasonality of agricultural production determines that not all constraints are experienced throughout the year at the same intensity. Obviously the lack of irrigation water is felt more severely at the end of the dry season than in other periods in the year. On the other hand for many input dealers, input trading is a seasonal activity. The rice planting season is, for many dealers, the opportunity to get into the market. As the rice season progresses the demand for inputs decreases and a significant amount of input dealers cease being active.

Not all constraints are felt equally by all actors. Most are specific for an actor or have different severity of impacts between actors. The below table (Table 16) summarises all recorded constraints and attempts to provide an assessment of the severity of the impact per actor and per cropping season. This will enable CAVAC to target interventions specific to a particular season or part of a season providing a tailored intervention plan.

**Table 16: Summary of Constraints**

Constraint	Input Dealers		Farmers		Output Traders	
	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Lack of availability	X	X	XX	XX		
Availability of Low Quality Inputs	XX	XX	XX??	XX??		
Insufficient knowledge on usage	X	X	XX	XX		
Insufficient labeling	X	X	XX	XX		
Poor distribution channels	X	XX?				
Insufficient knowledge on production techniques	X	X	XX	XX		
Insufficient knowledge on quality of inputs			XX	XX		
Insufficient knowledge			XX	XX		

Constraint	Input Dealers		Farmers		Output Traders	
	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
on crop rotation / cultivation techniques						
Insufficient irrigation available			(maybe drainage)??	XXX		
Poor Packaging and storage					X	X
Transport costs informal and formal					X	X
Insufficient local production					X	XXX
Product Quality			XX	X	XX	XX

### Market Development Strategy

CAVAC will assist in the continued development of the vegetable market. Currently the market is expanding at a significant rate in the vicinity of 10% per annum. This is probably in line with the growth in domestic production. A key constraint is the seasonality of production with wet season production being able to satisfy about 50% to 70% of consumption in Phnom Penh and other provincial markets, while in the dry season this varies from 35–45%.

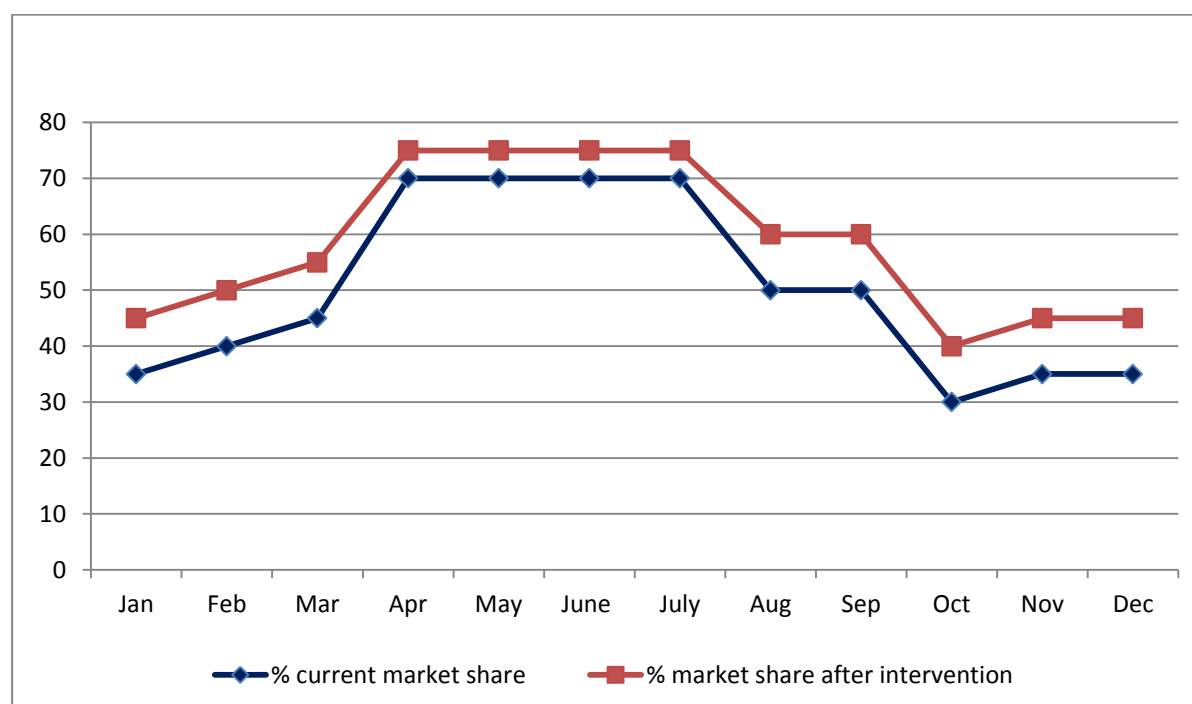
By improving the availability and knowledge on the use of agricultural inputs CAVAC will increase yields by 10–20% and will also increase quality. This will further enhance the profitability of vegetable production and will accelerate the transition from rice into vegetable production which is already occurring. In the initial stages the focus will be on increasing production of vegetables primarily at the end of the rainy season and the beginning of the dry season.

The major constraint later in the dry season is the availability of water. Providing irrigation to vegetable producers to extend the growing period at the end of the dry season could be a strategy at a later stage. By increasing yields and quality the strategy will achieve an import substitution effect due to the supplemental nature of Vietnamese vegetable supply to Phnom Penh.

The major constraint for transport to other provinces and Phnom Penh is quality and the definition thereof. Due to separate market development, different quality grades have evolved as each market has traditionally been supplied by its own peri-urban area. Better quality vegetables provide better market access to the producers by enhancing competition for their vegetables. The enhanced quality vegetables have better storage and transport characteristics allowing for a wider transport radius and a larger potential demand for the products.

The import substitution impact will not be evenly distributed as the contribution of temperate vegetables to the Vietnamese exports will be relatively higher in the early rainy season. The target is to provide a 5–10% increased share on the provincial and Phnom Penh markets for domestic vegetables – as illustrated in the graph (Figure 10) below.

Figure 10: Market Share of Cambodian Vegetables on the Phnom Penh Market



## Conclusion

The market development strategy for vegetables will have a two pronged approach. It will partly be an import substitution strategy, and it will also be growth strategy to further support the potential for increased capita consumption of vegetables.

There are two different markets / market categories;

- > Phnom Penh and provincial capitals – these are the markets with the best growth potential in the short term. The new middle class here is diversifying its diet, to the benefit of vegetables. New opportunities in the urban centres mean that population growth is more substantial here than in the rural areas. Although these markets tend to be more quality conscience, it's unclear how big an impact improved quality will have on the market development.
- > How the district / village markets supply to these very local markets is unclear at this stage. Whether these are supplied by overflow products from the more commercial producers or from surplus products from home gardens needs to be established. The focus at this level of markets is much less on quality and much more on availability.

CAVAC will work with input supply companies to enhance the availability of inputs such as fertiliser, seed and pesticides. The impact will be to increase yield / ha by 10–20%, the expected price effect will be limited due to the rapidly expanding market and the potential for import substitution. The yield effect will improve income with existing producers which will encourage more producers to venture into vegetable production. Improved extension by model farmers and improved information by retailers will improve the usage and effectiveness of the inputs. Combined this will increase the yield but also the quality of the crop.

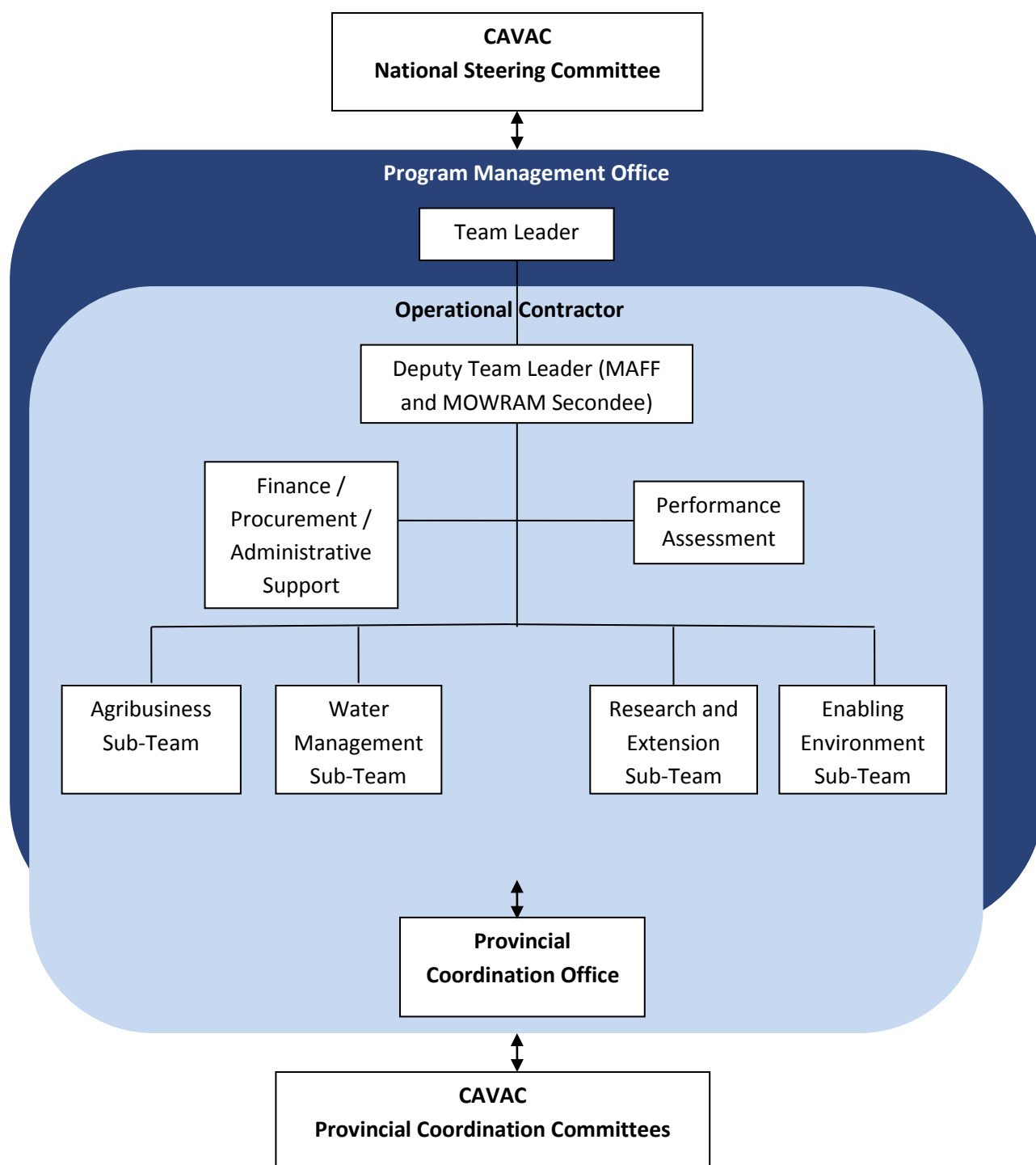
At the end of the dry season the availability of water is the key constraint. Alleviation of the water constraint through irrigation will be key to extending the growing period into the end of the dry season.



Provision of sustainable cost effective irrigation will be a key intervention area for a second phase of vegetable intervention.

The numbers of farmers initially impacted in the clusters in which CAVAC will focus its interventions will be worthwhile but limited. This merits a focused cost effective approach optimising the resources CAVAC deploys.

## ANNEX 3: CAVAC ORGANISATIONAL STRUCTURE



## ANNEX 4: REVISED GUIDELINES FOR POLICY SUPPORT FACILITY

### Introduction

Funding activities nominated by NSC members (AusAID or the Royal Government of Cambodia) may be considered from time to time. The purpose of this facility is to support key shared policy objectives and the ongoing implementation of the SAW and the Policy Paper on Paddy Production and Rice Export.

This scheme provides funding for activities not included in the CAVAC annual work plan, and will be based on separate approvals. The Facility will focus on issues which have relevance to CAVAC, reflect key shared policy priorities, and include a capacity development aspect.

The terms and conditions of funding under this scheme will be flexible, and determined by the NSC on a case by case basis.

### Assessment Process

The process of assessing Policy Facility applications will be as follows:

- > Applications may be forwarded to CAVAC by an NSC representative from AusAID, MAFF, MOWRAM, or directly submitted to CAVAC by PDA, PDWRAM and other stakeholders.
- > CAVAC will review the proposal and make a recommendation to the assessment panel.
- > Applications may be assessed by either:
  - the full NSC, or, between NSC meetings, by
  - the NSC Executive Committee or their delegated representatives, comprising an AusAID representative, a MAFF representative and a MOWRAM representative.

### Assessment Criteria

Applications for funding under the Policy Facility will be assessed against the degree to which they address the following criteria:

- > relevance to SAW / Rice Policy priorities and other RGC / AusAID priorities;
- > relevance to CAVAC objectives;
- > capacity development; and
- > while needing to differentiate proposals from the ongoing core roles of the RGC, applications will also be assessed against the degree to which they complement and add value to these core activities.

The Policy Facility will **NOT** fund activities which:

- > are inconsistent with MAFF and / or MOWRAM policy;
- > are inconsistent with AusAID or CAVAC policies or objectives;

- > are associated with the drafting of laws and / or regulations (but may fund policy research to inform the development of laws and / or regulations and the implementation of laws and regulations where they are closely aligned with RGC and AusAID's joint priorities); and
- > are considered as routine or planned core business of RGC, funded by the national budget.

Final approval can only be given if:

- > There is agreement from MAFF, MOWRAM and AusAID, or
- > Agreement from two of the above, and the third either abstains or fails to respond within seven days.

Approval will not be given if the representatives from one or more of MAFF, MOWRAM or AusAID indicate that they do not support the application.

### **Applications**

Applications should include (but are not limited to):

- > name and details of the applicant;
- > activity title;
- > objectives and intended outcomes;
- > a detailed activity proposal clearly describing all intended activities;
- > how the proposal addresses the selection criteria;
- > implementation / management processes and procedures;
- > risk management plan;
- > a detailed budget;
- > work plan / activity timeline;
- > financial management processes and procedures; and
- > date and signature.

## ANNEX 5: MONITORING SHEET

		1-Apr	Targets	% achieved	1-Jul	Targets	% achieved	1-Oct	Targets	% achieved	31-Dec	Targets	% achieved
<b>Agribusiness</b>													
<b>PDA-led activities</b>													
Number of field demos in rice			Details to follow			Details to follow			Details to follow			Details to follow	
Early wet season													
Wet season													
Dry season													
Number of field days conducted													
Laser-land levelling (Integrated pilot)													
Cooperatives established and supported													
Post-harvest activities in rice													
Extension methodology related activities													
Help desks supported													
Vegetable related activities													
Other activities if any													
<b>GDA-led activities</b>													
Major Pest Control Manual developed			Details to follow			Details to follow			Details to follow			Details to follow	
Rive value chain improvement project													
Other activities if any													

		1-Apr	Targets	% achieved	1-Jul	Targets	% achieved	1-Oct	Targets	% achieved	31-Dec	Targets	% achieved
CAVAC-led activities													
Rice seed													
	Medium seed producers supported		2			2			2			2	
	Associations supported		4			4			4			4	
	Small seed producers trained					10			15				
Pesticides													
	Pesticide companies supported		2			3						3	
	Pesticide retailer training provided					5			10			15	
Fertiliser													
	Fertiliser companies supported		3			5			5			5	
	One fertiliser forum conducted					1							
Pumps													
	Pump producers / sellers supported					1							
	Activity with MOWRAM	Activity initiated	1								A pump design finalised	1	
Media													
	Media companies supported		1			2			2			2	
	A pilot episode produced and shown					1							
	Research companies supported					1							
Rice export													

		1-Apr	Targets	% achieved	1-Jul	Targets	% achieved	1-Oct	Targets	% achieved	31-Dec	Targets	% achieved
	Partners supported		2			2			2			2	
	Vegetable seed												
	Vegetable seed companies supported		2			2			2			2	
	Vegetable seed retailer training provided					2			4			6	
<b>Irrigation and Water Management</b>													
	2011 and 2012 irrigation schemes finalised												
	Leading to farmer households having access												
	Leading to hectares able to irrigate												
	2013 Irrigation schemes constructed								6			6	
	Irrigation schemes studied and prepared for 2014								4			4	
<b>Research and Extension</b>													
	Action research funded					1			2			3	
	Extension activities started related to:												
	Model farmer training											400	
	Leading to farmers being supported											4000	
	Sources of information supported					1							
	Linking activities conducted					2							
<b>Business Enabling Environment</b>													
	Public-Private Dialogue activities / events conducted								3				

## ANNEX 6: PROPOSED LUMP SUM SUPPORT PACKAGE FOR DTLs

### Aim of the proposal:

*To foster a greater level of interaction between CAVAC and the two ministries MAFF and MOWRAM.*

### Introduction

Presently CAVAC Deputy Team Leaders (DTLs) have a wide range of tasks for which they can claim costs. The current procedures for claiming these costs are cumbersome and obstruct a fruitful and effective engagement between the two Ministries and CAVAC.

It is proposed that CAVAC pays a monthly lump sum amount to allow the DTLs to effectively execute their tasks. The lump sum is to cover all operational costs. Payments will be conditional to fulfilling the following tasks.

### Mechanisms

- > CAVAC and the DTLs agree on the expected level of support provided by the DTL to the Program and the amount of the accompanying financial remuneration.
- > CAVAC pays a lump sum on a monthly basis, providing the DTL performs the agreed tasks.
- > If for some reason the DTL is not able to provide the agreed support, the payments will be temporarily put on hold until the DTL is able to dedicate the time required.
- > The DTL can delegate some of the tasks to colleagues.

### Proposed tasks for both DTLs

#### *Monthly*

- > provide a focal point within the Ministries for all issues related to CAVAC;
- > circulation of CAVAC monthly reports and ad-hoc information relevant for Ministry officials; and
- > fulfil requirements from the Co-chairs.

#### *Yearly*

- > review AWP and coordinate provision of feedback within the respective Ministries and Provincial representatives;
- > organise pre-NSC meetings, NSC meetings and meetings with the Co-Chairs; and
- > participate in PCC meetings.

#### *On request*

- > support and facilitate relations with stakeholders including with the three target Provincial Governments, Provincial Departments, with other departments within MAFF and MOWRAM and with other Ministries;



- > advise CAVAC on content and operational issues including Government policy relating to CAVAC implementation areas;
- > assist in solving issues if and when they arise; and
- > assist departments within MAFF and MOWRAM to apply for CAVAC's grant facilities such as the Policy Support Facility and accessing capacity building opportunities through the CAVAC training and workshop budget.

*Specifically for the DTL from MAFF*

- > arrange invitations for the NSC meetings;
- > contribute to the Public Private Partnership meetings;
- > assist in the development of documentation related to CAVAC extension activities including providing technical advice and comments on content and layout; and
- > coordinate and advise on CAVAC direct support to the funded PDA priority activities.

*Specifically for the DTL from MOWRAM*

- > review and advise on selection of schemes;
- > review and advise on design of schemes;
- > participate in pre-qualification of tenderers eligible to tender for CAVAC irrigation schemes; and
- > participate in the tender process for awarding construction contracts.

**The lump sum monthly payment will cover operational costs that include:**

- > Cambodian based travel related to CAVAC activities (including per diems, hotels, and transportation);
- > administrative costs including copying, printing etc.;
- > communication costs related to conversations with CAVAC staff and with government officials when representing the CAVAC Program;
- > meeting costs;
- > costs related to representing CAVAC at government and non-government forums;
- > preparation costs for high level visits to CAVAC activities; and
- > secretariat function led by the DTL from MAFF.

Additional claims can be submitted for costs that are not included in the above.