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STRATEGY FOR AGRICULTURE AND WATER
2006-2010

PREPARED BY
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PHNOM PENH, FEBRUARY 2007

PREFACE

The Royal Government's *National Strategic Development Plan* for 2006-2010 aims, as its main priority, to achieve poverty reduction and economic growth. This will require solid progress in rural areas, where 85% of the population lives. Development of agriculture and agri-business, land and water resources management, and irrigation development – in short, “agriculture and water” (A&W) – will be crucial for such progress.

A large set of activities and projects already have been proposed for A&W, as contributions to the National Strategic Development Plan (NSDP). The NSDP is based on a “sector approach”, but in practice the various ministries of the Royal Government have made the proposals, with MAFF and MOWRAM being particularly involved, as lead agencies in their sectors. However, A&W are broad fields of activity, with linkages to many parts of society, the economy, and the environment. Hence, a sector approach can provide many benefits, particularly in promoting efficient and effective use of resources, and coordinating stakeholders. The Technical Working Group on Agriculture and Water (TWGAW) has been established by the Royal Government to facilitate sector coordination.

The TWGAW has been tasked with preparing a *Strategy for Agriculture and Water*, to meet one of the specific targets of NSDP during 2006-2010. A Strategy Team has been working since January 2006 on the analysis that are necessary to prepare such a Strategy. This document is one of the Key outputs of the Team's work. It will be supported by a *Strategic Program Framework* that specifies in more detail the practical matters of implementation.

We are in a period that is particularly favorable for progress in agriculture and water resources. The Royal Government, in its *Rectangular Strategy*, recognized how important they are for social and economic development, and a number of External Development Partners also are particularly interested in supporting Cambodia's development in these areas. The obvious stakeholders – farmers and rural communities – consistently tell survey teams that improved agriculture and water management are among the top two or three of their needs. And the Royal Government's commitment to good governance, particularly via the decentralization and de-concentration policy, provide an essential basis for development at the “grassroots”, in the rural communities most intimately engaged in A&W.

This strategy is developed based on analysis of current situation of agriculture and water sector, Strengths, Weaknesses, Opportunity and Treats (SWOT) analysis, and the needs of agriculture and water. The strategy is realistic and specific and implementable. This strategy is also developed based on the progress in agricultural and water resources development and competitive of market, in the progress and development of technologies in the region and the world, and the demand of free market economy.

This framework is developed with aim to assist farmer and rural community to increase the food security and income generation, reduce vulnerability, increase surplus of agricultural products for processing and exports and sustainable management and development of land, irrigation and water resources. The five main programme components to be undertaken in this strategy are focused on: (i) strengthening the institutional capacity building and management for agriculture and water sectors, (ii) improving the food security, (iii) improving agriculture

and agri-business (value chain) (iv) improving water resources, irrigation and land management, and (v) improving agricultural and water research, education and extension.

MAFF and MOWRAM propose to all technical departments and relevant ministries and agencies of RGC, to all external development partners and stakeholders to contribute and support to the strategy for agriculture and water. MAFF and MOWRAM look forward to seeing the support and contribution from all relevant stakeholders and external development partners in term of good cooperation and assistance for successful implementation of this strategy for promoting national development during 2006-2010, and to planning for development in the years that follow.

Phnom Penh, Date: March 30, 2007


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Executive Summary

STRATEGY FOR AGRICULTURE AND WATER

1 Introduction

The Strategy for Agriculture and Water (A&W) is required by the *National Strategic Development Plan 2006-2010* (NSDP). After adoption of the Strategy, the next step is to prepare detailed programs for implementation.

The NSDP sets national priorities of alleviating poverty and enhancing economic growth. A major emphasis is *Enhancement of the agricultural sector*. A second major emphasis is *Rehabilitation and construction of physical infrastructure*, which includes “management of water resources and irrigation” as one of its four components¹.

2 Policy and institutional environment

The overall policy environment for A&W is set by, in particular, the *National Poverty Reduction Strategy* and the *National Strategic Development Plan*. The NSDP requires ministries to plan in a sectoral and coordinated manner. Further, the RGC’s *Strategic Framework for Decentralization and Deconcentration Reform* promotes a transfer of responsibilities and resources to sub-national and local levels. Other elements supported to agriculture and water sector development includes the commitment from all partners, adequate policy and legislations, strengthening of institutional frameworks of agricultural and water sector, enabling environment for implementation and empower farmers and rural communities, and strengthening partnerships and ownerships.

The lead RGC agencies in agriculture and water resources are MAFF and MOWRAM respectively. The Strategy will enable the RGC to mobilize and guide support to A&W from External Development Partners (EDPs, or “donors”). A&W are especially important for “grassroots” rural affairs, so important stakeholders are provincial and sub-provincial administrations, community-based organizations, NGOs, and the rural households.

3 Strategic analysis

The Strategy for A&W is based on thorough analysis of strengths, weaknesses, opportunities, and threats. Cambodia’s strategic advantages lie principally in the availability of natural resources and manpower, which at present are under-utilised. Principal opportunities relate to domestic and export markets for agricultural products.

4 Vision and goals for Agriculture and Water Resources

The MAFF and MOWRAM Strategic Development Plans for Agriculture and Water Resources provide the following long term *Vision for A&W*:

to ensure enough, safe and accessible food and water for all people, reduce poverty, and contribute to economic growth (GDP per capita), while ensuring the sustainability of natural resources.

¹ NSDP emphasises: (i) Good government, (ii) Enabling environment for implementation of rectangular strategy, (iii) Enhancing Agricultural Sector, (iv) Rehabilitation and construction of physical infrastructures, (v) Private sector development and employment and (vi) Capacity building and human resources development.

The *Goal for A&W* during 2006-2010 is:

to contribute to poverty reduction, food security and economic growth through (a) enhancing agricultural productivity and diversification and (b) improving water resources development and management.

The Goal will be achieved principally by (1) more efficient use and management of water and land, (2) increased agricultural productivity, and (3) enhanced agri-business processes. Also needed will be (4) institutional capacity building and (5) improved access to knowledge and technology. These five areas of work are defined as programs (see Section 6).

5 The Strategy

There are eight key components of the Strategy.

1. Ensure favourable pre-conditions and build on Strengths/Opportunities

This requires, above all, a strong ***commitment*** by the policy makers relevant ministries and institutions, as well as by EDPs/donors, to support the Strategy for A&W. Other aspects of the national environment – as examples, the RGC’s plans to ***improve governance, strengthen law and order***, strengthening partnership and ownerships, ***integrate Cambodia into international trade, promote private sector investment*** – are essential to a successful Strategy for A&W.

2. Strengthen the enabling environment

The enabling environment for A&W includes relevant policies, laws/regulations, institutional capacity, etc. Good progress has been made – as examples, the National Water Resources Policy, several recently approved laws and sub-decrees in the agriculture and water sector, capacity building in MAFF and MOWRAM. However, ongoing strengthening is required – as examples, ***develop mechanisms to implement policies related to management of land, water, forest and other resources, enact the draft Law on Water Resources Management, and develop MAFF and MOWRAM capacities to enforce Laws*** and associated sub-decrees that are related to water use, watershed management, land and other natural resources.

3. Mobilize natural resources: water, land, soil

One of Cambodia’s key strengths is the availability of land, soil and water that at present are not used or are used inefficiently. The Strategy will include, as examples, promoting ***improved farm water management*** through water harvesting/storage, gravity-fed irrigation systems, and technology such as drip irrigation of crops; promoting ***soil fertility management; protecting water resources from pollution and degradation*** so that they continue to be available for fisheries, ecosystem maintenance, etc.; promoting ***rice-field fisheries and aquaculture***; promoting ***settlement of cultivable land and securing land ownership*** against land theft.

4. Mobilize human and financial resources

Human resources include both RGC officials (at all levels), as well as farmers and other members of the rural households. Cambodia has a large workforce which is growing rapidly, but many people are not fully employed and have limited education or training in useful skills. In addition, many people have limited access to the money needed to purchase inputs (e.g. fertilizer or agricultural machinery), maintain facilities (e.g. pumps), or invest in a business (e.g. a rice mill). Hence, the Strategy must mobilize and make better use of people and money, including as examples promoting ***education, training and extension*** in A&W, the development of ***appropriate technology, more efficient use of skilled people*** such as

extension workers and engineers, better *access to money needed for investment in agriculture and water sector and O&M irrigation systems*, greater *engagement of the private sector* in agriculture, water management and development, and agri-business.

5. Empower people and communities

In addition to mobilizing the workforce (4 above), the Strategy will seek to empower communities to work together and be more self-reliant. This includes, as examples, establishing and supporting farmer development community, *Farmer Water User Communities*, assisting farmers to establish agriculture *cooperatives* and other organizations to market of agricultural products and purchase inputs, promoting the availability of *micro-credit and other funding* sources to allow people to invest in agricultural production and agri-business development, and encouraging *community organizations* (Commune Councils, Village Development Committees, etc., with access to *Commune-Development Funds*) to participate in planning and operation of community projects for water supply, water management infrastructure, communal rice drying facilities, etc.

6. Apply a River Basin approach to water and land

Components 3, 4, and 5 must be implemented in an integrated way to obtain full value. Water resources in most countries are managed within river basins, and river basins provide a better basis for managing water resources than administrative boundaries. Hence, the Strategy will promote *a river basin approach to integrated water and land management*, to complement administrative arrangements based on provinces, districts etc.

7. Increase productivity of agriculture

This element of the Strategy aims to increase production, reduce production costs per unit of output and help to assure product quality. It will help to achieve increased production of high quality products, thus achieving both food security and commercial goals. In addition to actions already mentioned in (4) and (5), elements of the Strategy will include, as examples, *improve the quality of inputs* such as seeds and fertilizers; *reduce harvesting and post-harvest losses*; introduce *innovative agricultural and water management practices*.

8. Extend commercial agriculture

Commercialised agriculture provides the means for rural households and communities to generate cash income, as well as providing a basis for agri-businesses. The Strategy will assist farmers to engage in commercial production by, as examples, providing *information and forecasts* regarding market demand; promoting *new product opportunities*; establishing *value-added processing* facilities; administering arrangements for *product quality assurance* and food safety; facilitating *entry into profitable markets*, particularly via improved transport and storage facilities, marketing infrastructure, bulking/wholesaling arrangements, etc

The eight components can be arranged in a series of four steps which reflects their sequence in time, and the dependence between them (Figure I.1/5.1). The diagram can be thought of as like a house: Step 1 is like the foundations, Step 2 is like the pillars and floor, Step 3 is like the walls, and Step 4 is like the roof – all leading to the GOAL of (for the house) good shelter and health for the family and (for A&W) poverty reduction and economic growth for Cambodia.

The Strategy components already are – to varying degrees – being implemented. The sequence of components therefore reflects changes in the relative effort that should be allocated. At the beginning, more resources should be allocated to the components earlier in

the sequence. This will assure successful implementation of components that are later in the sequence. As time passes, resources should be re-allocated towards the later components.

6 Programs

The Strategy will be implemented in five Programs, each with its Development Goal and several objectives (Figure I.2/5.2). One Program mainly addresses the enabling environment, two Programs address the “mobilization and empowering” elements of the Strategy, and two more Programs mainly address the productivity and commercialization of agriculture. They are:

1. Institutional capacity building and management support program for agriculture and water resources
2. Food security support program
3. Agricultural and agri-business (value-chain) support program
4. Water resources, irrigation and land management program
5. Agricultural and water resources research, education and extension program

The five programs will contain a set of integrated actions designed to achieve the development goal and objectives. As a starting point, the programs have been described as preliminary Terms of Reference for design teams, who will develop the actions during late 2006. Several ESAs have indicated willingness to provide the resources for these design teams, and two have started work.

7 Resource requirements

The amount of money that will be required is estimated to be approximately US\$350 million for the five-year period. Other RGC agencies also are engaged in A&W-related activities, notably rural infrastructure (roads etc.) and land management. Their budgets for such activity will help to implement the Strategy for A&W, but at this stage they should not formally be included in the Strategy’s budget. It is likely that this will become more practicable as the Strategy progressively is implemented, particularly when planning investments beyond 2010.

8 Monitoring and evaluation

A critical component of strategy and program implementation is to monitor the results against the targets or indicators. MAFF and MOWRAM will, as lead agencies, play the principal role in monitoring Strategy implementation for RGC. “Lessons learned” will help to revise the Strategy for the 2011-2015 period, and to direct resources towards priority areas.

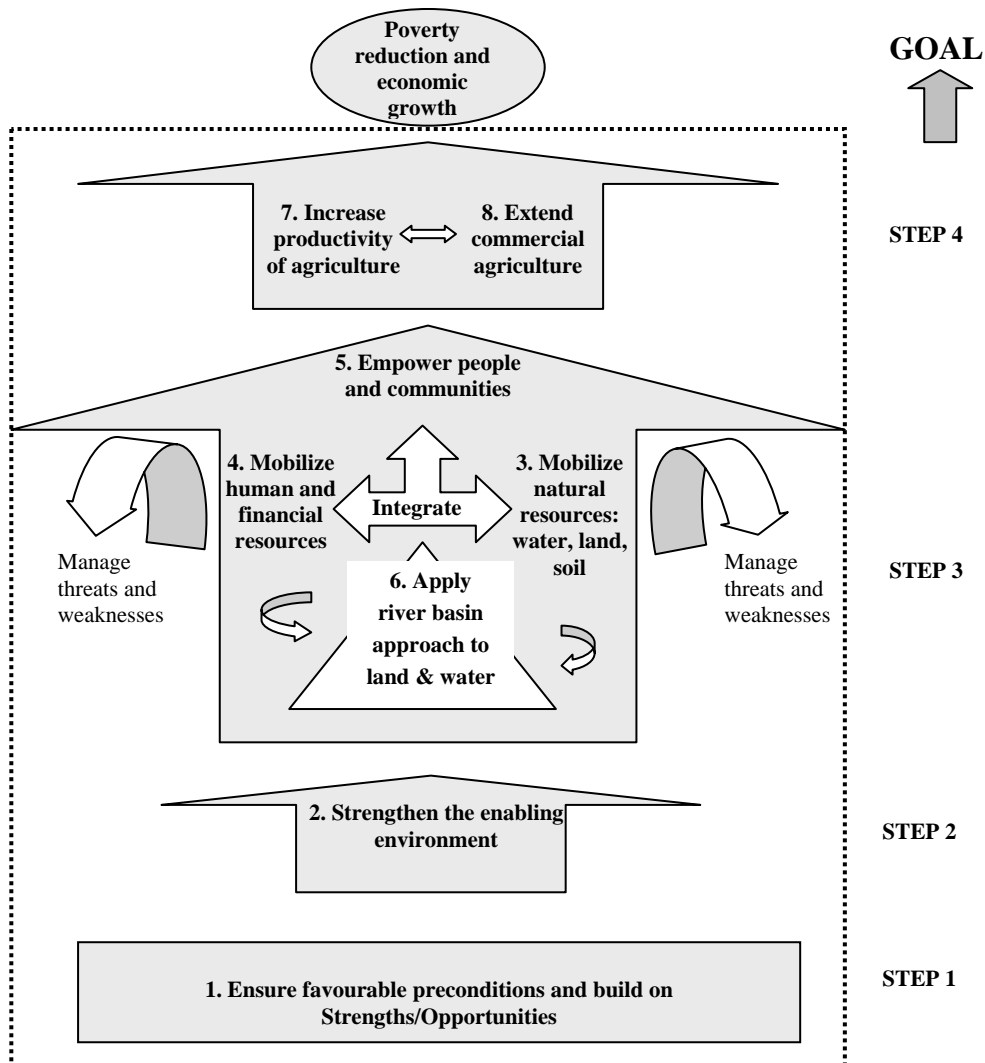


Figure I.1. Strategy: four steps from preconditions to the Goal

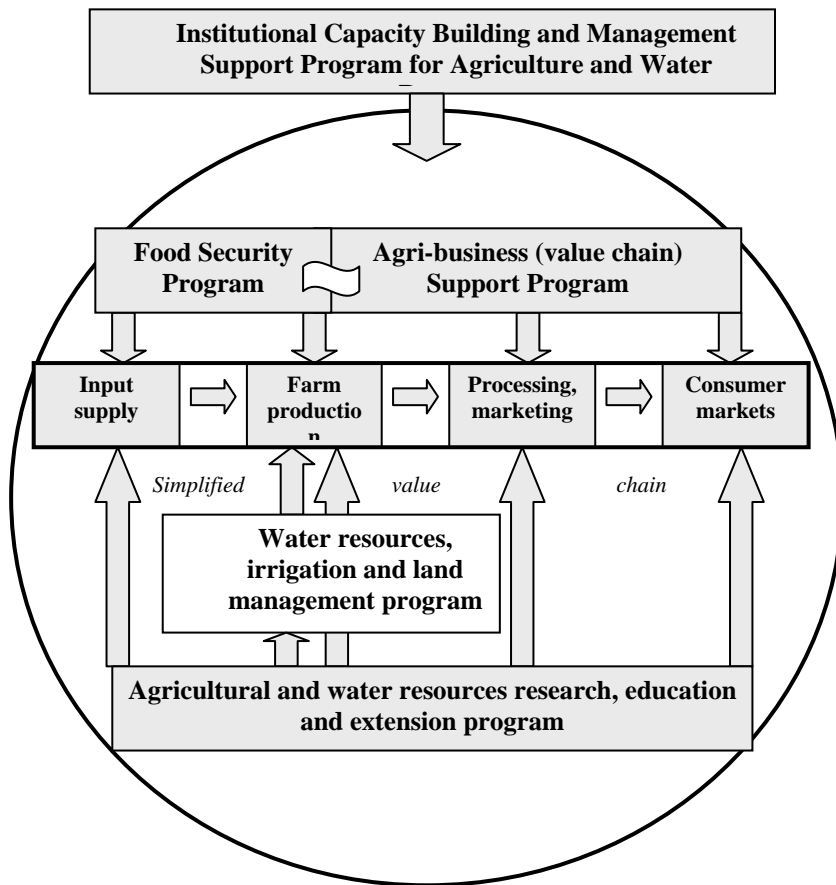


Figure I.2. Program structure of the Strategy for A&WR.

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ABBREVIATIONS

A&W	Agriculture and Water
AEA	Agro- Ecosystems Analysis
CARDI	Cambodian Agricultural Research and Development Institute
CBO	Community-Based Organisation
CMDG	Cambodia Millenium Development Goal
CNMC	Cambodian National Mekong Committee
EDP	External Development Partner
FFS	Farmer Field School
FO/FA	Farmer Organization/Association
FWUC	Farmer Water User Community
GAP	Governance Action Plan
GDP	Gross Domestic Product
ICM	Integrated Crop Management
IWRM	Integrated Water Resources Management
KIT, KITT	Knowledge, Information and Technology (Transfer)
MAFF	Ministry of Agriculture, Forestry and Fisheries
MEF	Ministry of Economy and Finance
MIME	Ministry of Industry Mines and Energy
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MoC	Ministry of Commerce
MoE	Ministry of Environment
MoP	Ministry of Planning
MOWRAM	Ministry of Water Resources and Meteorology
MRD	Ministry of Rural Development
NGO	Non-Governmental Organization
NSDP	National Strategic Development Plan
NWRP	National Water Resources Policy
PIMD	Participatory Irrigation Management and Development
R&D	Research and Development
RBM	River Basin Management
RGC	Royal Government of Cambodia
RS	Rectangular Strategy
SDP	Strategic Development Plan
SRI	System of Rice Intensification
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TOT	Transfer of Technology
TWGAW	Technical Working Group for Agriculture and Water

1 Introduction

1.1 Background and purpose

The *National Strategic Development Plan 2006-2010* (NSDP) was approved by the Council of Ministers on 27 January 2006 and officially launched by Samdech Hun Sen, Prime Minister of the RGC on 15 August 2006. It describes the *Rectangular Strategy for growth, employment, equity and efficiency* (RS), which provides the framework for Cambodia's socio-economic development. With its priority on alleviating poverty and enhancing economic growth, the NSDP places particular emphasis on *Enhancement of the agricultural sector* – one rectangle of the four included in the Rectangular Strategy. It states that “the priority goals in this sector are enhancement of food security, productivity and diversification, and market access for agricultural products. It outlines (para. 4.43) priority strategies for 2006-2010, the first of which is to “speedily formulate and implement a comprehensive Agriculture and Water Resources Strategy”.

A second rectangle of the RS – *Rehabilitation and construction of physical infrastructure* – includes “management of water resources and irrigation” as one of its four components (para. 4.64). The priorities in this component are closely related to agricultural use of water, and therefore to the NSDP's goals for the agricultural sector.

Both agriculture and water resources management are broad fields of activity, in which many Government agencies, External Development Partners (EDPs), and other stakeholders – in particular, of course, rural communities that comprise 85% of the population – have an interest. The NSDP lays particular emphasis (para. 4.40) on the need for a comprehensive and cooperative approach to agriculture and water resources, and preparation of this Strategy contributes to achieving such an approach.

The purpose of this document, then, is to formulate the Strategy for Agriculture and Water (A&W) required by the NSDP. A further phase in the formulation process will be to prepare a Framework for implementation, and the present document provides the starting point. During preparation of the Framework, the present draft Strategy document will be refined. Furthermore, any strategy requires monitoring and updating, and so too will the Strategy for A&W. In 2009/2010, preparation of a National Strategic Development Plan for 2011-2015 is expected to commence. The present Strategy provides an essential starting point for a revised Strategy for A&W, for the next planning period.

1.2 Indicators of success

The NSDP emphasizes the important contribution that A&W play in poverty reduction, food security and economic growth, and it includes several targets related to these. However, other factors influence achievements in these areas, so that the targets are not readily usable for monitoring the performance of A&W management. It will be essential to develop additional indicators for use in the next NSDP planning period.

The NSDP (Table 4.2) sets specific targets for 2010 for the agriculture sector, several of which are relevant to A&W together (Table 1.1). These provide a basis for monitoring the performance of A&W management, although the first three are quite weather dependent.

The Cambodia Millennium Development Goals presented in Annex 1.1 of the NSDP provide another framework for monitoring progress in national development, but none relate specifically to A&W. Otherwise, the NSDP lists priority strategies that only imply a basis for monitoring performance for agriculture (paras. 4.42 to 4.54) and water resources and

irrigation management (para. 4.64). The Ministry of Planning (MoP) has established a framework for monitoring the NSDP, focusing on the “high level” indicators referred to above (see Section 8).

Table 1.1. NSDP indicators relevant to A&W from NSDP 2006-2010

Indicator	2005 estimate	2010 target
Rice production (000 ha)	2,374	2,500
Rice yield (tons/ha)	1.97	2.4
Irrigated area (including supplementary irrigation) ha of rice area)	588,687	650,000
Number of land titles issued to farmers (% total land)	12	24

Source: NSDP 2006-2010 (pp xvii)

Following the guidelines of the MoP for preparing NSDP inputs, the Strategic Development Plans prepared by MAFF and MOWRAM tabulated specific objectives and actions, including mid-term targets (2008 outputs) and final targets (2010 outcomes)². These provide a more detailed basis for monitoring achievement, which is of value for those engaged directly in A&W planning and monitoring.

1.3 Strategy formulation process

The NSDP required that a Strategy on A&W should be prepared during 2006. In response, the TWGAW mobilized a strategy team, which prepared its Inception Note in January 2006. Since then, the process has covered (Figure 1.1, next page):

1. Analysis of SWOT, stakeholders, and the policy environment, reported in the *Strategic Profile* document, April 2006.
2. Development of four Strategy Options, reported in the *Strategy Formulation I* document, May 2006, drawing on the SWOT analysis to identify strategic themes and formulate strategic approaches.
3. Review of the Strategy Options by a Stakeholder Workshop (19 May 2006).
4. Additional refinement of strategic themes by the Team, formulation of an indicative structure (*Strategy Concept Note*, endorsed for further development in June 2006), and review of the process (*Process Plan*, June 2006).
5. Now, at “mid-term” in the process, this draft A&W *Strategy* report is presented. It provides the starting point for the next two steps in the process:
6. Final formulation of Development Programs TORs for Program Design Teams (currently ongoing), to be contracted during 2007. Preliminary draft terms of reference attached to this report (Annex 5).
7. Formulation of national development programs and Program Framework for implementation and resourcing of the Strategy, which sets clear priorities for investment . A draft “*Concept Note*” for this framework process has been prepared and is being reviewed.

² Outputs are tangible, objectively measurable results, such as a Sub-Decree that has been presented to a Minister by a specified date. Outputs are specified for the year 2008, to enable assessment of progress towards the outcomes specified for 2010. Outcomes are less easily measured in an objective way. They describe the social or environmental changes that the planned activities aim to bring, such as an increased ability to design infrastructure using good information about water flows.

It is envisaged that the A&W Strategy will be formally adopted, as contributions to NSDP, in December 2006, while the rest will follow in 2007.

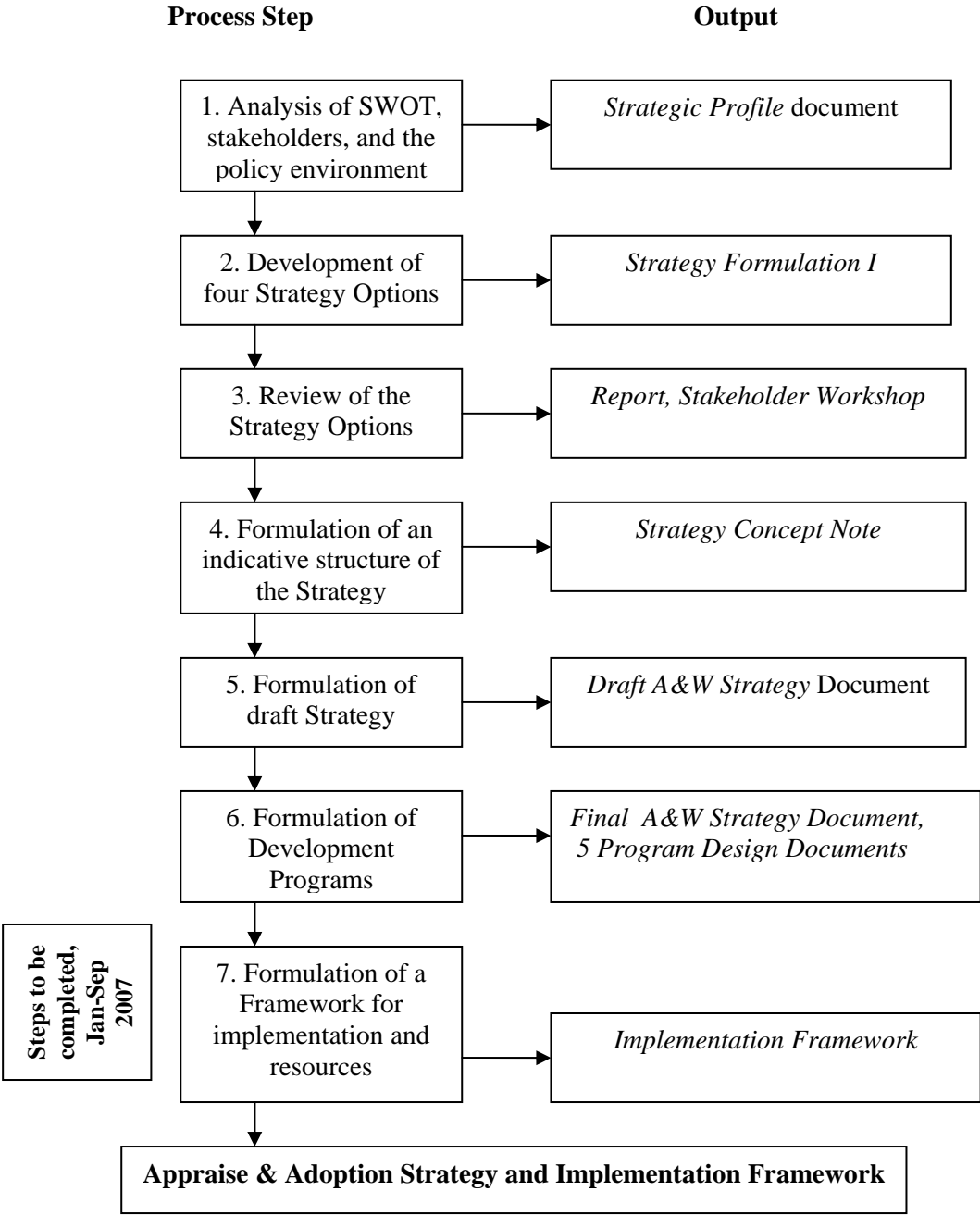


Figure 1.1. Process for formulation of Strategy and Implementation Framework for A&W.

2 Situation analysis

2.1 National policy environment and institutional framework

The overall policy environment for A&W is set by, in particular, the *National Poverty Reduction Strategy* and the *National Strategic Development Plan*. The RGC’s foremost priority is poverty reduction. In addition, a range of cross-cutting policies, such as those relating to administrative reform, gender equity and development of Small and Medium Enterprises, provide a context for action in particular sectors.

The NSDP is organized on a sector-wide, not a ministry-wide, basis, and therefore presses ministries towards planning in a cross-sectoral and coordinated manner. Further, the RGC’s *Strategic Framework for Decentralization and Deconcentration Reform* mandates a progressive transfer of responsibilities and resources to councils at provincial, municipal, district and commune levels. It is acknowledged that Cambodia’s arrangements for public administration presently are not perfect, with some gaps, overlaps and poor coordination of functions. As Decentralization and Deconcentration Reform is further designed and implemented, institutional weaknesses in A&W will be identified more precisely, and the lead ministries will be required to develop remedies.

There is a limited joint strategy base for A&W. A *National Water Resources Policy* was promulgated in 2004, which provides a comprehensive and up-to-date statement of policy related to all aspects of water resources management. The draft Law on Water Resources Management is awaiting action by the National Assembly, which presents difficulties for regulation of water utilisation. Issues related to the international waters of the Mekong River are dealt with under the Mekong Agreement, with the assistance of the Mekong River Commission. The Agreement provides an important, over-arching framework for water resources and flood management along the Mekong floodplain and round the Tonle Sap/Great Lake, and therefore provides a context for the more focused Strategy on A&W.

With regard to land resources, an interim *Strategy on Land Policy Framework* was adopted in 2002, complementing the Land Law of 2001. With regard to agriculture, there are sub-sectoral policies on crops, livestock, agricultural research and development (R&D) etc., supporting the MAFF mandate defined in its Sub-decree 17. The implications of selected key policies for A&WR were analyzed by the B1 Strategy Team (working document *Strategic Profiles*, Section 2) and are summarized here in Table 2.1.

Table 2.1. Policies and strategies with potential impacts on Agriculture and Water Management (from working document *Strategic Profiles*.)

Area of Policy or Strategy	Level of impact	Direction of impact
<i>National/cross-cutting</i>		
National Strategic Frameworks	High	Strongly supportive
Decentralization and de-concentration	High	Supportive
Judicial Reform	High	Supportive
Administrative reform	High	Supportive
Private Investment policy	High	Supportive or restrictive
Public Investment policy	High	Strongly supportive
Gender policy	Medium	Supportive
International and regional institutions	Medium	Largely supportive
<i>Sectoral</i>		
Environment policy	High	Strongly restrictive
Land management	High	Supportive or restrictive
Urban and rural water supply policy	Medium	Restrictive
Disaster management policy	Medium	Supportive
Forestry Policy	Medium	Supportive or restrictive
Food Security & Safety Management Policy	Low to Medium	Supportive
Power sector development policy	Low	Supportive
Fisheries Policy	Low	Restrictive

The institutional setting of A&W is complex. The lead RGC agencies are MAFF and MOWRAM in agriculture and water resources respectively. However, a number of other ministries hold a stake in A&W, such as Ministry of Land Management, Urban Planning and

Construction (MLMUPC), Ministry of Rural Development (MRD), and Ministry of Commerce (MoC). Others, such as the Ministry of Economy and Finance (MEF) and the Cambodia National Mekong Committee, have a less direct but important interest. Because of the linkage of A&W to rural affairs “at the grassroots”, other important stakeholders are provincial and sub-provincial administrations, as well as community-based organizations and NGOs. The ultimate stakeholders, of course, are the farmers.

Of the 18 Joint Technical Working Groups established by the RGC to facilitate cooperation with and among EDPs, one – the Technical Working Group for Agriculture and Water – has a mandate for A&W and set up a strategy team to prepare the A&W strategy.

2.2 Strengths, Weaknesses, Opportunities, Threats

The Strategy for A&W draws heavily on an analysis of strengths, weaknesses, opportunities, and threats (SWOT). The analysis is presented in working document *Strategic Profiles*, and is summarized here in Table 2.2.

The strengths listed in Table 2.2 suggest that Cambodia’s strategic advantage lies principally in the availability of natural resources (water, land and biodiversity for agriculture) and manpower inputs, which at present are under-utilised. Of the ten weaknesses, five relate to natural resources (soil fertility and unreliable water sources) and labour. Hence, they set limits on the extent to which natural resources and labour can be seen as strengths. In particular, the three weaknesses that relate to labour are aspects of the effectiveness with which labour is mobilised in Cambodia. They appear to severely limit the potential value of abundant labour, and firm action will be needed to deal with them.

Four more weaknesses indicate that access to three types of input – capital, information and technology, and access to markets – is limited in Cambodia. The remaining weakness – “the productivity of agricultural labour, land and water is low (resources are used inefficiently)” – is almost an overview statement that summarises the consequence of all the other weaknesses. Taken together, the ten weaknesses give a rather bleak view of Cambodia’s strategic disadvantages in A&W. Three types of input are regarded as weak, while the other two (listed as strengths in Table 2.2) have significant limits placed upon them. On the other hand, we might say that there are many opportunities to develop strengths and overcome weaknesses.

The opportunities have many linkages with the strengths and weaknesses, and relate to four of the five types of input mentioned above. The threats do not, in general, relate to inputs, but principally to the environment in which A&W functions. Hence, they include four that are related to political, governance, social, and legal factors. All of these control whether the environment enables and encourages farmers to invest in and develop the sub-sector, or whether it provides disincentives and obstacles to investment. The risk is, overall, that present commitments to and implementation of reform could falter or not address issues that are of particular relevance to A&W. If this were the case, then components of a Strategy that depended on an enabling environment would be difficult to implement fully. A particular concern is that the RGC’s *Strategic Framework for Decentralization and Deconcentration Reform* may encounter difficulties in implementation, which could hinder implementation of the Strategy for A&W, particularly at sub-Provincial levels.

Table 2.2. Agriculture and Water Management: summary SWOT Analysis

<p>Strengths</p> <ol style="list-style-type: none"> 1. Land resources are available 2. Water resources are available 3. Abundant manpower is available in rural areas at low labour cost 4. MAFF and MOWRAM have good human resources potential 5. Policy and/or strategic frameworks are developing for MAFF and MOWRAM 6. Stakeholders are committed to and recognise the importance of the sector (Government, EDPs, NGOs and farmers) 7. Diverse agro-ecosystems are available, with many land-types and cultivars 8. Developing focus on community empowerment and engagement, through inter alia Community Councils, FWUCs and FOs 9. Agri-business is developing 	<p>Weaknesses</p> <ol style="list-style-type: none"> 1. Institutional capacity, management and project implementation by MAFF and MOWRAM are weak 2. Water resources are highly variable in time and space, and agricultural water management technology is poorly developed 3. There is limited investment capacity or interest in investing in agriculture 4. Technology transfer is weak and farmers and extension workers have a low level of knowledge, access to technology, and skills 5. Soil fertility is low in many the areas. 6. Socio-cultural weaknesses include low community solidarity, vulnerability of farmers to landlessness, a cultural focus on subsistence agriculture: “Rice first, fish second” 7. Information asymmetry (inconsistency) among stakeholders 8. The productivity of agricultural labour, land and water is low (resources are used inefficiently) 9. There is weak access to markets 10. Legal instruments for A&WR are inadequate.
<p>Opportunities</p> <ol style="list-style-type: none"> 1. Improvement of governance, including RGC commitment (the GAP), policy definition and political stability. 2. Market development and integration with the regional and global economy. 3. Strong support from External Development Partners for investment in A&W 4. Science and new technologies 5. More fully exploit natural resources (water and land) that presently are under- or un-utilised 6. Availability of investment funds, including incentives, private funds, and rural credit services 7. Decentralization and de-concentration policy 	<p>Threats</p> <ol style="list-style-type: none"> 1. Market changes, including highly competitive international markets 2. High cost of oil and gas. 3. Political circumstances, including competing demands for RGC funds from other sectors 4. Legal circumstances, including continued failure to enforce laws on land, water, forests etc. 5. Natural disasters 6. Degradation of the environment 7. Failure to implement governance, judicial and other reforms 8. Social and political changes, e.g. social conflict over access to water and land, Labour migration. 9. Decreasing EDP support for A&W

2.3 Sector issues

While carrying out preliminary analysis, the Strategy Team identified some key issues that increase the risk that a Strategy for A&W might not be fully implemented (Section 9, *Strategic Profiles* document). They are, in summary:

1. Priority areas for investment

There is always competition for government funds, with government and EDP attention generally drawn toward community development and the social sector: health, education, empowerment of women, etc. Greater investment by private sources and reduced reliance on public funds and EDPs is therefore an important need in A&W.

2. Relative importance of large, medium, small, household water management systems

There is an ongoing debate regarding the scale of investment that is most effective in Cambodia. Key issues relate to technical feasibility, sustainability, efficiency, and the social and environmental implications of the different scales of irrigation schemes. Of course, it is not a question of one scale or another, but of how to balance them all, and use each where social and hydrological conditions are suitable and economic returns can be increased.

3. Relative importance of rice and other crops

Enough rice production in a season means food security for Cambodia's subsistence farmers. Rice production, therefore, takes priority over non-rice crops in many places. To persuade subsistence farmers to risk planting other crops requires a high degree of confidence that the return will substantially exceed that of rice, that the risk of losing their investment (in seeds, labour, etc.) will be minimized, and that food security is not compromised.

4. Relative importance of irrigable vs. rain-fed cropland

Irrigation is strongly emphasised in the NSDP, but irrigable cropland is, according to FAO figures, limited to less than 20% of the total potential cropland, because of unsuitable topography or distance from water sources, so that a large proportion of cropland is likely to remain rain-fed. Irrigation infrastructure can, perhaps, provide rapid returns and more certain water management where it is applied. However, some people argue that introduction of improved water management technology for rain-fed agriculture would be more cost effective, more easily managed, and have more widespread benefits in the long run. It is not a question of one or the other approach, but of choosing where different technologies are appropriate, how their relative monetary and social benefits compare, and how to achieve equitable investments that benefit the whole rural population.

5. Proliferation of strategies

Various RGC agencies with mandates related to A&W have developed their own strategies. Their priorities are not necessarily consistent, as all agencies focus on their formal mandates rather than the cross-sectoral approach encouraged by the NSDP. There has been limited consultation or coordination as the different strategies were developed, which implies that implementation will face the same fate.

6. Overlapping and unclear stakeholder responsibilities

The responsibilities of the many stakeholders in the sub-sector often are overlapping, fragmented, unco-ordinated, or unclear, particularly at sub-national levels. Government agencies tend to compete for resources and protect their areas of jurisdiction, which discourages collaboration and encourages independent action. NGOs, CBOs, and farmers themselves are also stakeholders and have responsibilities, but these are even more difficult to specify and manage. NGOs, in particular, value their independence from government.

Fundamentally, all six issues arise from differences of opinion regarding priorities. This emphasizes that the Strategic Framework for A&W must seek to set clear priorities for the actions and investments that are proposed. In developing the Framework, it will be important also to review past experience in implementing programs related to A&W. This and the preceding section reveal a number of factors (variously, "weaknesses", "threats" and "issues") that may hinder implementation. These obstacles to success will need a "strategic" response by sector managers working in close cooperation.

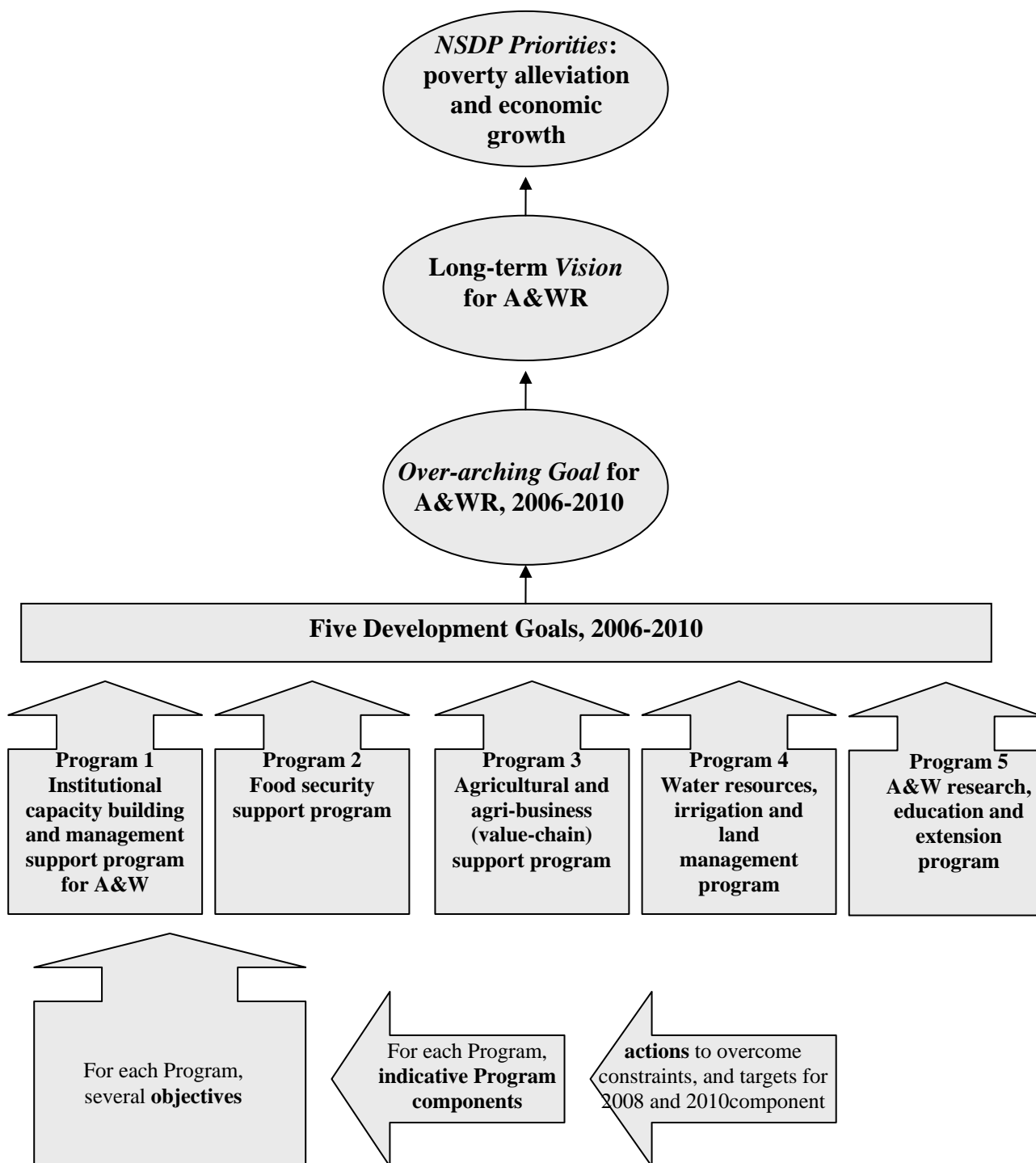


Figure 2.1. “Flow” or component structure of the Strategy for A&W.

3 The overall “flow” of the Strategy: from actions to poverty reduction and economic growth

The top-most focus of the Strategy is to achieve the priorities of the NSDP, poverty reduction and economic growth. The underlying “flow” or conceptual structure of the Strategy is summarized in Figure 3.1. A long-term Vision for A&W expresses how the A&W sectors should contribute to overall national priorities. More specifically, the Over-arching Goal for A&W states what should be achieved in the sectors during 2006-2010. Five Development Goals are specified, which direct attention to five Program areas into which effort will be

focused. Following MoP guidelines, more specific objectives are set for each Program area, and actions are identified that will overcome constraints that prevent the objectives from being achieved. As a means of structuring the actions in an organized and practicable way, indicative Program components, particular areas of activity, also are identified.

4 Vision and goals for Agriculture and Water

The NSDP states that the RGC's priority for national development during 2006-2010 is poverty reduction and economic growth, achieved particularly through enhancement of the agricultural sector. The Strategic Development Plans for Agriculture and Water Resources, prepared by MAFF and MOWRAM, state sectoral visions and goals that contribute to national development. The Strategy Team has used these as the starting point for defining a Vision and Goals, for a joint Strategy for A&W.

4.1 The Vision for Agriculture and Water

The long term Vision for agriculture and water is:

to ensure enough, safe and accessible food and water for all people, reduce poverty, and contribute to economic growth (GDP per capita), while ensuring the sustainability of natural resources.

4.2 Over-arching Goal for 2006-2010

The *Over-arching Goal* for agriculture and water resources management during 2006-2010 is:

to contribute to poverty reduction, food security and economic growth through enhancing agricultural productivity and diversification and improving water resources development and management.

To achieve this Overarching Goal will require particular focus on:

1. Increasing food security and income of rural communities and households
2. Reducing vulnerability of rural communities and households
3. Increasing surpluses of agricultural products for processing and export
4. Sustainable management and development of the Nation's land and water resources

4.3 Development Goals for 2006-2010

The Over-arching Goal for 2006-2010 will be achieved principally by increased agricultural productivity, more efficient use and management of land and water, and enhanced agri-business processes. Institutional capacity building, particularly in the area of knowledge and technology transfer, will be needed. Accordingly, the following *Development Goals* have been set for 2006-2010:

1. *Arrangements that provide a sound policy, legal, institutional and administrative basis for effective work performance in agriculture and water resources development and management.*
2. *Agricultural systems and community arrangements that enable poor and food insecure Cambodians to have substantially improved physical and economic access to sufficient, safe and nutritious food at all times to meet their dietary needs and food preferences for an active and healthy life.*

3. *Agriculture and agri-business that make effective use of inputs and market opportunities, are steadily intensifying and diversifying production, and deliver full benefits to farmers, rural communities, and other stakeholders.*
4. *Sustainable and pro-poor management of water resources, water management facilities, water-related hazards, and land resources that is integrated, efficient, and carried out in a river basin context.*
5. *A comprehensive and coordinated capacity to assemble and utilise agricultural and water-related knowledge, information and technology transfer.*

The first three Development Goals are so placed because they deliver social and economic benefits directly to the community. The last two provide indirect benefit to the community, through building the institutional capacity of the lead agencies to carry out their responsibilities. Nevertheless, the five Development Goals have equal priority for action – they are equally necessary for success in A&W, in other words. The Development Goals lead directly to defining five Program areas, which are described in Section 5.

5 Strategy formulation

When it has been finalized, the Strategy for A&W will define the pathway and steps to be taken to reach the Objectives defined in Section 4.3, and the resources that will be required. Starting from the SWOT analysis summarized in Section 2.2, it is designed to build on the strengths, overcome the weaknesses, take advantage of relevant opportunities, and avoid or counter the relevant threats. It synthesizes the analysis presented in the *Strategic Profiles* and *Strategy Formulation I* documents. A preliminary analysis of the Strategy concept is attached as Annex 5.

5.1 Key components

The analyses carried out by the Strategy Team suggest that there are eight key components of the Strategy. These can be arranged in a logical order which reflects partly their sequence in time, and partly the direction of dependence between them. Other elements are supported to agriculture and water sector development includes the commitment from all partners, adequate policy and legislations, strengthening of institutional frameworks of agricultural and water sector, enabling environment for implementation and empower farmers and rural communities, and strengthening partnerships and ownerships.

5.1.1 Ensure favourable pre-conditions for Success.

These include, in particular:

- a favourable macro-environment, including good governance and a commitment to law enforcement
- commitment to the decentralized arrangements for public administration that are so crucial to effective action at the “grassroots” level of rural communities
- access to international markets through participation in regional and international commerce
- the continued commitment of the RGC and EDPs to investment in A&W

These elements are only partly within the influence of A&W stakeholders, so it is fortunate that they are at present very favourable. If they were not, the Strategy’s chances of success would be much reduced; a significant threat to the Strategy is that governance reforms, particularly in regard to decentralization and deconcentration, might be delayed. To the extent

that these elements can be influenced by sector stakeholders, an important aspect of implementing the Strategy will be to do so.

5.1.2 Strengthen the enabling environment.

The enabling environment for A&W comprises, in particular, the policy, legal-regulatory, institutional and financial arrangements that influence stakeholders' confidence to invest resources:

- implementing policy, laws and other regulatory instruments with relevance to A&W
- building institutional capacity within the relevant government agencies – particularly the lead agencies MAFF and MOWRAM and sub-national entities – including effective coordination among agencies
- establishing arrangements for land tenure and access to water that create confidence for investment
- creating a fiscal/financial environment that encourages private sector investment
- providing and maintaining infrastructure and services, particularly in terms of transportation, communications, and market access, that facilitates market entry
- achieving coordination among ministries and EDPs
- Strengthening partnerships and ownerships

Most of these elements are within the ambit of the RGC, but not necessarily within the more limited scope of A&W. This includes, notably, international arrangements for management of the waters of the Mekong River, which are subject to the Mekong Agreement among the riparian states in the river basin. Earlier analysis, particularly of SWOT, indicate that the Strategy must include action on several elements of the enabling environment. It should be recognized that all the above elements already feature in NSDP.

5.1.3 Mobilise natural resource water, land soils.

The fundamental natural inputs to agriculture are land, soil and water; biological resources, e.g. crop plant varieties and cultivars, are also important (sunlight and CO₂ are also essential, but not controllable). Much cultivable land is not yet in agricultural use and classification or land use mapping for agriculture, and still is covered by forest, shrubland or other natural or semi-natural vegetation. Meanwhile, much land that presently is cultivated produces yields that are low in comparison with their potential. Water availability in both irrigated and rain-fed areas often is the most critical success factor enabling farmers to graduate from subsistence to market-oriented production. Irrigation and other kinds of water control such as water harvesting greatly reduce the risk of crop failure, and enable resource-poor and vulnerable smallholder farmers to engage in more risky, high value production. Elements of this component of the basic strategy for development agriculture and strategy might include:

- identifying, determining the potential utility of, and opening up for settlement cultivable land that presently is unused, using techniques such as Agro-Ecosystems Analysis, Land Use Capability Classification, and river basin planning
- identifying land use planning and mapping
- studying and assessing climate and water potential including climate change, potential of surface water and ground water for crop forecasting and seasonal planning for agricultural production.
- determining the potential utility of presently under-utilised cultivable land, and encouraging more productive use
- sustaining and improving soil fertility by promoting soil and water conservation and appropriate technology for fertility management
- managing water resources in an integrated way(Integrated Water Resources Management-IWRM)

- providing the capacity (infrastructure, management systems, etc.) to efficiently and cheaply deliver water when, where, and in just the quantities needed to exploit the productive capability of land and soil, both in irrigable and rain-fed croplands
- identifying and exploiting new biological resources of agricultural value, and improving them by breeding

Essential aspects of this step are to ensure that critical ecosystems and biological diversity are conserved, rivers and lakes are protected from contamination by agri-chemicals and other pollutants, watersheds are protected against erosion and other forms of degradation, and appropriate steps are being taken to respond to climate change and variability. Natural resources must be used sustainably, and also must be made available on an equitable basis, particularly to poor and female-headed households.

5.1.4 Mobilise human and financial resource inputs

The essential human resources identified in the SWOT analysis are human labour (“manpower”), human knowledge (more broadly, knowledge, information and technology, or KIT), and money. Elements include:

- action research on the sociology and economic status of rural communities, agriculture and agri-business, as a basis for policy analysis and planning
- assembling and providing ready access to KIT on farming practices and agri-business
- assembling and providing ready access to KIT on farm water management and irrigation management
- transferring KIT to potential users in a form and manner that is appropriate to their needs
- assisting farmers to carry out their own experimentation and innovation
- promoting formal education programs in agriculture and water management at tertiary level
- educating and training farmers and others in the agri-business value chain in the technical and business management aspects of their work
- facilitating the participation of women in all aspects of farming and agri-business
- attracting financial resources from RGC, EDPs, NGOs etc. for investments of a public good nature
- creating a favourable environment, confidence, and motivation for investment in A&W by the private sector (from individual farmers through to international businesses)
- providing affordable and low-risk access to investment funds and rural credit for farmers, especially poor and female-headed households

There are a number of areas relevant to this part of the Strategy that are beyond the scope of A&W, such as public health and education facilities in rural areas. A particular issue is the salaries and other incentives paid to ministry staff, which are subject to RGC policy and cannot be controlled by the ministries themselves. Several of the above elements also are outside the mandate of the principal stakeholders, particularly those relating to money, and are perhaps better seen as part of the enabling environment. Hence, with regard to financial aspects, the long-term aim is perhaps that stakeholders make decisions largely within the framework of the competitive market economy, but many years will be needed for that to be achieved.

5.1.5 Empower people and communities

This component of the Strategy is closely related to the preceding input area, but focuses on the capacity for communal/co-operative action in rural areas. It is particularly important in the context of rural communities, whose members are very dependent on each other, especially with regard to managing water delivery systems, product marketing, etc. A very important aspect of empowerment is the ability of communities to avoid or, at least, to mitigate the

adverse effects of natural disasters (damaging floods, droughts and unexpected dry spells, pest and disease outbreaks etc.) Hence, this component includes:

- empowering rural communities to organize and take responsibility for their own socio-economic development, by promoting and facilitating community organizations, training in the necessary skills, and providing ongoing institutional support
- empowering farmer groups to work co-operatively in relevant aspects of the production/value chain, such as purchase of fertiliser, sharing of machinery, accessing reliable market information, and processing and marketing products
- empowering farmers to manage communal water delivery systems (water harvesting, irrigation and drainage infrastructure)
- providing incentives for farmers to invest, by ensuring that the enabling environment – availability of rural credit, access to bulking and processing services, etc. – is helpful
- enabling rural communities to mitigate the adverse effects of natural disasters

It is important that the above aspects of community empowerment are not dealt with separately, for instance by setting up many unco-ordinated community organisations. Community empowerment should become a way of community life.

5.1.6 Apply river basin approach to land and water

Water, land and soil resources must be managed within a framework that enables stakeholders to influence management of the resources on which they depend. The Royal Government's policy is to decentralize public administration to provincial, district and commune levels, and for many aspects of agriculture and water management this will provide a suitable framework. However, natural resources – water, land, soil and vegetation cover – are rarely distributed according to administrative boundaries. The river or drainage basin (for underground water, the aquifer) is the fundamental physical unit within which water moves, as it flows downhill to the sea. Land systems (e.g. mountain range, coastal plain, etc.), soil types, and natural vegetation types generally are controlled by climatic zone, elevation above sea level, and underlying geology (rock type and sediments). Land, soil and vegetation boundaries therefore often cross rivers and the drainage divides between river basins, as well as administrative boundaries. A key exception to this is the soil and vegetation types that are associated with river floodplains, which *do* follow river systems.

River basins are widely viewed as the best unit within which to *manage* water, as an element of the Integrated Water Resources Management (IWRM) concept. However, worldwide experience is that successful river basin management is costly, because it needs additional administrative arrangements for the basin, effective coordination among the public administration units within which the basin is located, and a strong information base. Accordingly, river basin management has been most successful – and has received sufficient funding – where there is major and costly infrastructure such as a system of hydropower dams, where the socio-economic and ecological values of water and associated aquatic resources are very high, where there is competition or conflict among intending users, or where international issues such as the management of navigation or catastrophic pollution events mean that management *must* consider the natural flow of water along a river system.

The RBA concept in the context of the A&W Strategy is as follows:

1. The RBA in the A&W Strategy is primarily for the initial identification of Water and Land resources for mobilisation under the strategy – thus supporting a core part of the strategy and in fact seen as **becoming an essential link for the implementability of the strategy** for without the means of effective mobilisation the strategy will falter.

2. The identification of these resources can probably take the form of a zoning of river basins into at least four zones: e.g. (i) areas suitable for full scale irrigation, (ii) areas suitable for

partial or supplementary irrigation, (iii) areas essentially for rain-fed agriculture with possibilities for water harvesting and/or other water management/conservation measures; (iv) areas for purely rain-fed agriculture (there may be more appropriate definitions of these zones; e.g. in the context of Watershed Management interventions on different scales (micro-intermediate)). These zonings would primarily serve to guide feasibility studies and investments in water management and land mobilisation measures under the strategy. (This is in contrast to a more ad-hoc approach, which would be the case in the absence of the RBA).

3. It is not the intention (as part of the A&W Strategy *per se*) to generally go into the wider aspect of allocation of water resources among competing users (e.g. water for industrial users, hydro-electricity, etc) – but the A&W RBA could be integrated into such a wider approach in some priority river basins, if this becomes agreed with other stakeholders (e.g. for the Mekong and Tonle Sap basins).

4. On this basic ‘water management’ zoning, the RBA approach would ‘overlay’ land and soil classifications, market access factors and possibly environmental concerns relative to agricultural activities. However, these ‘overlays’ would have to be applied in a flexible and pragmatic manner according to possibilities, priority and importance. Not all river basins would thus necessarily apply the full concept – but this would be according to the national priorities and importance of the river basins, which can again vary over time.

5. It is not the intention (not in general at least) to set-up ‘dedicated’ river basin management bodies under the A&W strategy (it’s not our particular mandate), but where such bodies already exist, they would have a role. Otherwise the public management of interventions under the A&W strategy would be the responsibilities of the already existing provincial, district and commune administrations – as appropriate.

The A&W River Basin Approach thus come in several categories e.g. ranging from the full Integrated Water Resources Management Approach (IWRM) at one end - to a much more limited ‘identification only’ exercise at the other end, where the full IWRM approach would only find application in a very few high priority basins."

Within the above guidelines, elements of river basin management could include:

- Ongoing management of the Mekong River waters and floods according to the Mekong Agreement
- Integrated management of Tonle Sap Great Lake and its associated fisheries, biodiversity, and ecosystems
- Identification of other river basins in which management at the basin level may be justified, because there is competition for water or significant risks that water, aquatic/fishery resources, and other instream values might be degraded by uncontrolled abstraction for agricultural use or by agricultural pollution
- Compilation of reliable information on water availability, demand and use within river systems, to enable resource managers to manage water so that it is shared among users in such a way that one user does not cause harm to other users or to the resource itself.
- Compilation of reliable information on soils, local climate, land systems, vegetation patterns, and land use capability, to enable managers to determine where water, land and soil together provide the greatest potential for beneficial and sustainable development of natural resources.

5.1.7 Increase the productivity of agriculture

To increase agricultural productivity, that is, the return received from the applied inputs of labour, fertilizer, water, etc., must benefit all farmers, whether they are producing crops for their own consumption or for sale. In addition to actions already mentioned in relation to inputs of natural resources and KIT, relevant interventions include:

- ensuring that inputs such as seeds have the quality needed to provide high quality production
- supporting more efficient crop production and lower product prices, by facilitating the adoption of better technology (e.g. agricultural machinery) and reducing harvesting and post-harvesting losses
- facilitating the widespread adoption of innovative agricultural practices, such as Integrated Crop Management (ICM) including System of Rice Intensification (SRI)

This element of the Strategy is inter-dependent with the next, because it should reduce production costs per unit of output and help to assure product quality. It will therefore make Cambodian products more competitive in both home and international markets.

5.1.8 Extend commercial agriculture and agri-business

Commercialised agriculture will provide the means for rural households and communities, many of which presently function in a virtual ‘non-cash economy’, to generate the cash incomes they need to improve quality of life. Where commercial opportunities exist, for example near provincial towns and in border areas, “demand pull” very effectively draws farmers into agri-business and away from purely subsistence production. Nevertheless, there are interventions that can encourage entrepreneurial farming:

- providing timely and accurate information and forecasts regarding market trends and demand
- identifying and promoting new product opportunities and customer requirements
- establishing value-added processing facilities
- administering arrangements for product quality assurance and food safety
- facilitating entry into profitable markets, particularly via improved transport and storage facilities, marketing infrastructure, bulking/wholesaling arrangements, etc.

5.2 Sequence of implementation

The eight components of the Strategy are arranged, in the foregoing, approximately in a logical sequence of implementation and inter-dependence. In reality, of course, there is already activity in every component; indeed, MAFF and MOWRAM already are well into the first year of implementation of their SDPs for 2006-2010. In practice, then, the Strategy components already are being implemented at the same time, and it would clearly be impractical to suggest that, for instance, there should be no investment to increase the productivity of agriculture (component 5.1.7) until institutional capacity building (in component 5.1.2) had been completed.

The sequence of components therefore reflects changes in the relative proportions of effort to be allocated. At the beginning, more resources should be allocated to the components earlier in the sequence, because they provide conditions that will assure successful implementation of those components that are later in the sequence. As time passes, continued investment in the earlier components will provide steadily declining benefits. Therefore, resources should be re-allocated towards the later components.

With this qualification, then, the components of the Strategy for A&W can be presented in the form of a simple diagram, which focuses attention on our highest goals: poverty reduction and economic growth (Figure 5.1).

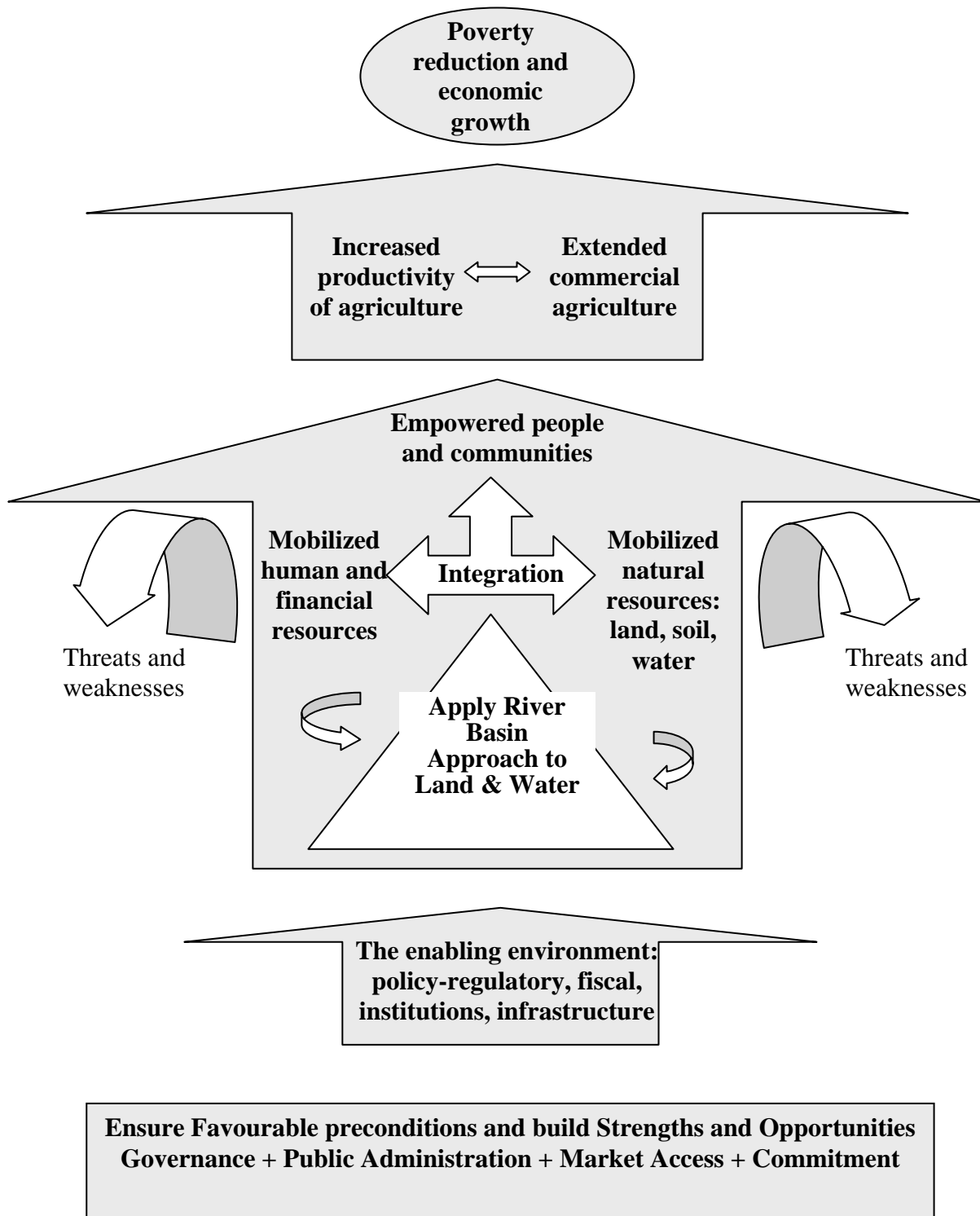


Figure 5.1. Strategy structure: four steps from preconditions to desired outcomes

There are four stages in the whole process of implementation. Firstly, the necessary pre-conditions – including the strengths and opportunities in the sectors – must be confirmed and sustained. As already noted, A&W stakeholders have only partial influence on pre-conditions like good governance, but during 2006-2010 the pre-conditions appear to be rather favourable for the sectors. Secondly, the enabling environment within the sectors must be enhanced, especially through building the capacity of the institutions that will lead implementation of the Strategy. Thirdly, natural and human (including financial) resources must be mobilized and communities empowered to be engaged in implementation, where appropriate within the framework provided by river basins as the fundamental hydrological unit. Fourthly, measures must be taken to increase agricultural productivity and production and extend commercial agriculture (agribusiness). Together, these areas benefit both rural households and communities, including those that produce much of their own food but seek cash income to improve their quality of life, and stakeholders engaged in fully commercial agriculture and at other parts of the value chain, such as processing and export.

At all stages, the Strategy aims to address the weaknesses of and threats to the sectors (Figure 5.1). The guidelines for inputs to NDSP placed particular emphasis on this aspect, by requiring that “constraints” be identified, and that sectoral SDPs specify the actions needed to eliminate constraints. The guideline has been followed during development of this Strategy.

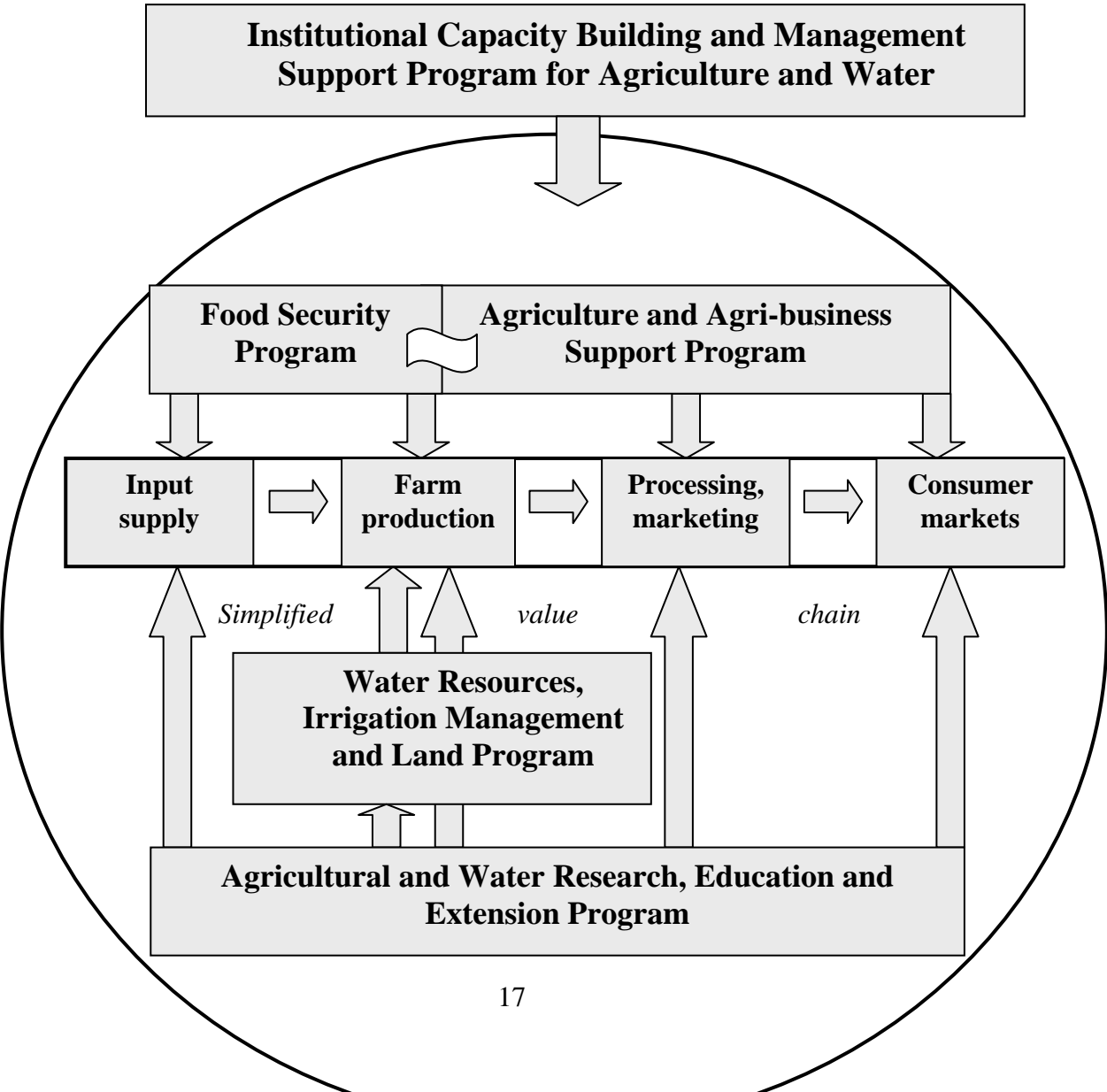


Figure 5.2. Program structure of the Strategy for A&W.

5.3 Implementation by Programs

The Strategy will be implemented in five Programs (Figure 5.2) that aim to achieve the five Development Goals specified in Section 3.3. They can be “mapped onto” the structure outlined in Figure 5.1. One Program addresses the enabling environment, two Programs address the “mobilization and empowering” elements of the Strategy, and two Programs address productivity and commercialization of agriculture. Together, the Programs aim to achieve poverty reduction and economic growth, through the agency of agriculture and water management.

6 Program areas

The Over-arching Goal and Development Goals for A&W during 2006-2010 will be achieved by concentrating effort into five Programs (Figure 5.2):

1. Institutional capacity building and management support program for agriculture and water resources
2. Food security support program
3. Agricultural and agri-business (value-chain) support program
4. Water resources, irrigation management and land program
5. Agricultural and water resources research, education and extension program

As noted in Section 4.3, the five Programs are equally important to achieve successful A&W. Indeed, they are complementary, most notably Programs 2 and 3, which together aim to promote agricultural production for household consumption (to achieve food security) and for sale (to generate income). Thereby, these two Programs will address several components of poverty, which are both monetary and non-monetary in nature.

The rationale for the Programs was developed by the Strategy Team of TWGAW on the basis of the situation analysis outlined in Section 2, the Vision and Goals stated in Section 4, and the Team’s appraisal (Section 5) of the key components that must be included within a Strategy for A&W. All of these have, as the starting point, the RGC’s priority for national development during 2006-2010 – poverty reduction and economic growth, achieved particularly through agriculture. Programs 2 and 3 aim to deliver the NSDP priority outcomes of economic growth and poverty reduction. These outcomes are so important that the Team considered it essential that each should be addressed by a Program. Program 4 aims to mobilize water and land, the two fundamental natural resources available to Cambodian agriculture. The Team’s SWOT analysis showed this to be essential for future development in the sector; in addition, the NSDP’s Rectangular Strategy places particular emphasis on the matters to be covered by Program 4. The Team’s SWOT analysis also showed the crucial need for institutional capacity building and management support, and is the principal justification for Program 1. (Institutional capacity building establishes the enabling

environment, and for that reason is designated Program 1.) Finally, the justification for Program 5 is that the strategic use of up-to-date knowledge, information and technology is essential for Cambodian agriculture to escape from their present status of low technology, low productivity, and high risk of failure – an area of present Weakness but future Opportunity.

For each Program, the following sections present a brief rationale and identify objectives. The objectives are accorded equal priority and importance. The “indicative components” listed in each program are very tentative, and will need much fuller consideration during detailed program design, during the next phase of the process (Section 1.3). At present, indeed, the Program descriptions are indicative, and provide a starting point for Program design. Program design is intended to use small Program Development Teams, working together under the guidance of Task Force B1.

MAFF and MOWRAM already are working in many of the areas included within this Strategy for A&W, in accordance with their SDPs for 2006-2010. It is therefore possible to suggest Program components which could be considered during Program design, as a way of organizing proposed actions into a clear structure. At present, the suggested components are only indicative, and are not listed in any order of priority.

In designing the Programs, it is important to recognize current strengths, and focus effort on eliminating weaknesses. The MoP guidelines for inputs to NSDP require that constraints on achieving objectives – related to the Weaknesses and Threats considered in Section 2.2 – should be identified. This leads to proposing actions to remove the constraints, and therefore make it easier to achieve the objectives. It is at the stage of choosing actions that priorities also must be chosen, by allocating resources to each action that are commensurate with their expected contribution to achieving Program Development Goals and objectives. The proposed actions are presented in the matrix format that was used for the NSDP (Tables 6.1 to 6.4, Annex 3). The tables also show performance indicators (see Section 1.2) and responsibilities.

The Strategy is cross-sectoral but, during the remainder of the current NSDP period, it will be overseen principally by MAFF and MOWRAM. Coordination will be essential with other agencies whose interests and responsibilities relate to A&W. These include the MRD, MLMUPC, MoC, MIME, etc., and organizations like the Royal University of Agriculture.

6.1 Institutional Capacity Building and Management Support Program for Agriculture and Water Resources

6.1.1 Rationale

A&W are central to the Royal Government’s plans for national development, and concern many line ministries and Government agencies, as well as NGOs and the private sector. Although this Strategy for A&W is intended to be cross-sectoral, institutional capacity building inevitably must address the needs of particular institutions. MAFF and MOWRAM are the lead agencies in these sectors; they are both large ministries, with staff at national and sub-national levels. Their mandates extend well beyond agriculture and management of water for agricultural purposes, and they have both executive and enabling/supportive responsibilities. For example, MOWRAM constructs and manages irrigation systems, but also assists farmers to manage irrigation themselves.

This Support Program focuses on capacity building in MAFF and MOWRAM, as lead agencies in A&W. The scope of the ministries’ responsibilities presents large challenges. They have made significant advances in recent years, but they need ongoing strengthening in all aspects of institutional capacity. A fundamental need is for adequate financial incentives –

salaries, allowances, etc. – for staff, but these are determined by RGC policy and are outside the specific control of the ministries. The existing strategic development plans for MAFF and MOWRAM for 2006-2010 already include relevant objectives for capacity strengthening. The two ministries have different needs, and so this Program incorporates components that in many cases are specific to each ministry. Nevertheless, as far as possible the Program will address both ministries.

This Program will proceed at the same time as the RGC's *Strategic Framework for Decentralization and Deconcentration Reform* is being implemented. Inevitably, it must address issues related to institutional capacity at national, provincial, district and commune levels, and to the complex network of inter-relationships at and between the four levels of administration. Commune Councils, as the bodies with the closest links to farming communities, eventually may have particular significance in implementing this Strategy.

6.1.2 Purpose and Goal

The purpose of this Program is to ensure that MAFF and MOWRAM are able to provide efficient, effective and comprehensive support to farmers and the agricultural industry. The Program Development Goal set for 2006-2010 (Section 4.3) is:

Arrangements that provide a sound policy, legal, institutional and administrative basis for effective work performance in agriculture and water resource development and management

The Program addresses all aspects of the institutional capacity that the two ministries need to manage their work efficiently and effectively. These aspects include policy and planning, legal-regulatory frameworks and enforcement, institutional/ organizational matters (including those related to de-concentration and decentralization), mobilization of human resources, administrative procedures and management systems (including, for example, performance monitoring and financial management), information and database management, and coordination with other agencies and stakeholders. Institutional capacity related to research, knowledge, information and technology transfer is sufficiently important that it is considered separately under Program (5), while the technical capacity needed to deliver services is considered under Programs (2) to (4).

6.1.3 Objectives

The Strategic Development Plans (2006-2010) prepared by MAFF and MOWRAM contain objectives which provide the basis for this Program. The following objectives have been synthesized from the two SDPs; the actions needed in each ministry to achieve each objective may be quite different.

1. The policies, plans and legal-regulatory frameworks needed by MAFF and MOWRAM to discharge their responsibilities are fully established and maintained. The ministries have the capacity required to implement policies and plans and enforce laws and regulations for which they are responsible.
2. MAFF and MOWRAM have a sufficient number of appropriately trained staff, the facilities and equipment, and the organizational capacity in planning, administration, and management (financial and contract management, human resources management, information management, engineering and public works, project management, monitoring and evaluation, etc.) that enables them to discharge their responsibilities at national and sub-national levels.

3. MAFF and MOWRAM are carrying out a time-bound plan to implement the Royal Government's policies on de-concentration and decentralization, in their areas of responsibility, and to achieve close coordination of their work.
4. Women and men have equal opportunity in MAFF and MOWRAM to be equipped for and to participate in all aspects of the ministries' work.
5. MAFF and MOWRAM have effective procedures in place to coordinate (at national and sub-national levels) with each other, other Royal Government agencies, NGOs, External Development Partners, and sector stakeholders.

6.1.4 Indicative components

Indicative components of the Program might include (from *Strategy Concept Note*):

1. Institutional Capacity Improvement, (including Priority Mission Groups);
2. Agricultural and Water Resources Information/Data Systems Improvement;
3. Agricultural and Water Resources Legislation Development and Enforcement;
4. Gender and food security mainstreaming.
5. Financial Management Systems (including Medium Term Expenditure Frameworks)
6. Monitoring and Evaluation Framework

6.1.5 Means of and responsibility for implementation

Indicative actions will be required to implement the five objectives. They have been synthesized from the Strategic Development Plans prepared by MAFF and MOWRAM as input to the NSDP. During the next phase of this process, they will be reviewed, revised and specified in more detail in a Program Design Document (TOR, Annex 3). As the RGC's *Strategic Framework for Decentralization and Deconcentration Reform* is developed and implemented, it is likely that the means of and responsibility for implementation of this Strategy at sub-national levels also will need to be further developed.

6.2 Food Security Support Program

6.2.1 Rationale

About 34.7% of Cambodia's population falls below the official income poverty line, with another very large proportion coming just above this measure. About 20% of the population is living below the food poverty line in 2004. Poverty in Cambodia is overwhelmingly a rural phenomenon. Both female- and male-headed households experience similar rates of poverty and not much difference in poverty exists in terms of marital status or ethnicity. Food insecurity is prevalent in all of rural Cambodia and some urban communities, and nutrition is highly inadequate, mainly due to low yields and strong reliance on diets of rice and fish.

This Program contributes to implementing the NSDP, in particular its major focus on "poverty reduction and removal of disparities and reduction in gaps between regions as well as between the haves and have-nots". It focuses on increasing food security and incomes and reducing poverty at household level among the 85% of the population who live in rural areas and depend on agricultural and natural resources and related employment. This will contribute to social improvements and release productive energies that will further develop Cambodia.

The Program complements the Agriculture and Agri-business Support Program, which emphasizes agricultural production for sale and income generation. Other aspects of food security and poverty reduction, such as larger infrastructure improvements, also are considered in other components of the NSDP.

6.2.2 Purpose and Goals

The Program aims to contribute significantly to the fulfillment of the Cambodian Millennium Development Goal 1: *Eradicate extreme poverty and hunger*, and its target: *Halve, between 1993 and 2015, the proportion of people whose consumption is less than the national poverty line*. It will have positive impact on five other CMDG's, through helping to reduce child mortality and improve maternal health (through its contribution to improved food intake, improved sanitation, and water management, nutrition awareness and basic health awareness), improving environmental sustainability through improved, more knowledgeable management of agricultural and natural resources, and empowering women, especially in poor communities.

It aims also to contribute to achieving the Food Security Goal of the NSDP: *to ensure that poor and food insecure Cambodians, by 2010, have substantially improved physical and economic access to sufficient, safe and nutritious food at all times to meet their dietary needs and food preferences for an active and healthy life*. NSDP states that fulfillment of this goal requires concerted efforts among various sectors, with focus on:

- Increasing and ensuring food availability
- Improving food accessibility (involving incomes and affordability)
- Ensuring optimal food use and utilization through health and nutrition education.

An important aspect of achieving food security is to empower households who are most at risk to protect themselves against disaster. For instance, at-risk communities can establish and maintain rice banks and other types of "safety net". It is also necessary to ensure that at-risk households have full access to assistance from governmental and other sources, both to deal with disasters and to develop their long-term capacity to increase food production. Enabling and training people to interact with elected representatives and governmental agencies, from Commune Councils upwards, will help them to obtain assistance and advice. In the long run, this will enable them to better use their own resources to achieve food security.

The Program Development Goal set for 2006-2010 (Section 4.4) is:

Agricultural systems and community arrangements that enable poor and food insecure Cambodians to have substantially improved physical and economic access to sufficient, safe and nutritious food at all times to meet their dietary needs and food preferences for an active and healthy life.

6.2.3 Objectives

To achieve the Program Development Goal, four objectives have been defined:

1. An increasingly productive and diversified agricultural system that is capable of assuring food security for the nation and delivering an acceptable quality of life for rural communities, especially the poor.
2. Intensified and diversified food production by smallholder farming households, particularly those that are food-insecure, based on their own crop and grazing lands, and access to common property resources of land, fisheries and forests
3. Community groups, particularly of food-insecure households and women, who are empowered to gain full benefit from governmental assistance programs, provide their own "food-security safety nets" such as rice banks, and represent their own interests in political and administrative environments.

4. Policies and information on aspects of food security related to agriculture and water management that effectively guide public administration at all levels.

6.2.4 Indicative components

Indicative components of the Program might include:

1. Improved food production for smallholder farming and food insecurity households through intensification and diversification from their own agriculture and livestock production and common property of land, fisheries and forest
2. Improved nutrition and basic health awareness and practices for previously food insecure persons.
3. Empowered community groups and local community of food insecure people.
4. Increased empowerment of women in food insecure households.
5. Improved policies and information system on food security
6. Pro-poor tourism support to food security.

6.2.5 Means of and responsibility for implementation

Indicative actions will be required to implement the objectives. They draw on the Strategic Development Plan prepared by MAFF as input to the NSDP, and on the various documents drafted by the TWGAW Strategy Team. During the next phase of this process, they will be reviewed, revised and specified in more detail in a Program Design Document (TOR, Annex 3).

6.3 Agricultural and Agri-business (value chain) Support Program

6.3.1 Rationale

Agriculture is the main source of food for Cambodian people, 85% of whom live in rural areas. Crop and livestock farming is a major contributor to the economy, accounting for nearly 20% of GDP in 2005, and ricefield fisheries and aquaculture contribute an additional 3-4%. A significant proportion of production is consumed by farming households themselves, so assuring food security is critically important to them. However, any surpluses – especially when value is added – provide cash income to pay for education, health care, and other amenities. Poverty is concentrated among the rural poor and urban poor people who have left rural areas to seek work. Therefore, increasing agricultural productivity and total value-added production offers an effective and potentially rapid means to alleviate poverty and enhance the quality of rural life.

Agriculture's (crop and livestock) share of GDP has declined as other industries have grown. Nevertheless, there are significant opportunities for expansion of agriculture, particularly by development of commercial farming – agri-business – to provide products to sell in both domestic and international markets. For instance, 70% of Cambodia's consumption of fruit and vegetables presently is imported, providing an obvious opportunity for "import substitution". On the other hand, farmers in border areas, who have the advantage of cheaper transportation, are able to sell their production into neighbouring countries, and obtain good profits. To take advantage of opportunities for import substitution and export will require effective development of markets and of linkages between farmers/producers, wholesalers, and consumers. Assured product quality and reliability of supply will be needed to support this, as well as new and diversified crops (e.g. preferred rice varieties, or crops that can be certified as organically grown) that meet the rapidly changing demands of consumers.

Increased production and diversification of agriculture will provide a basis for downstream value-added processing. There are further opportunities for profitable developments in other places in the agri-business value chain. For instance, "upstream" services (e.g. seed supply,

manufacture of machinery) are needed, while “downstream” marketing facilities such as transportation must be improved. Thus, there are many opportunities for the private sector, and also for farmers working cooperatively, to add value to agricultural production. All these opportunities create employment, both on-farm and off-farm, and provide sources of cash income for workers and households involved in all stages of the value chain. To take advantage of these opportunities will, of course, require financial resources, so that mechanisms for providing investment funds – rural credit, etc. – will be needed.

Overall, a strengthened agricultural value chain can serve as a dynamic driving force for economic growth and poverty reduction. The importance of agriculture is recognized by the priority that it receives in the NSDP. The Strategy is national in scope, but market opportunities vary from region to region, in response to differences in distance to markets, transport infrastructure, etc., as well as differences in soils, water availability, climate, etc. The Strategy must avoid favouring some parts of the population above others, but nevertheless will need to identify and prioritize locations where investments in agri-business can have the greatest socio-economic benefits, and develop equitable means to encourage investment in such locations.

This Program complements the Food Security Support Program, which emphasizes production of food for household consumption.

6.3.2 Purpose and Goals

The underlying purpose of this Program is to increase income, to develop and extend markets for agricultural products, and also to ensure food security for poor Cambodian people. The principal means of doing this will be to improve agricultural productivity and production, and promote agri-business. These will require activities of a “public good” nature, particularly to empower rural communities to take greater control over their own circumstances. However, a fundamental purpose is to engage the private sector in all stages of the agricultural value chain, by removing constraints and increasing incentives, so that entrepreneurs provide an increasing range of goods and services. Assuring access to international and regional markets for agricultural products will be a critical requirement, as will improving access to sources of investment finance.

The Program Development Goal set for 2006-2010 (Section 4.3) is:

Agriculture and agri-business that make effective use of inputs and market opportunities, are steadily intensifying and diversifying production, and deliver full benefits to farmers, rural communities, and other stakeholders

6.3.3 Objectives

To achieve the Program Development Goal, four objectives have been defined:

1. Provision of inputs and services, including financial services and water management services, that enable cost-effective, environmentally sustainable and profitable agricultural production.
2. Adoption of “best practices” for cropping, animal husbandry, aquaculture and crop water management that achieve cost-effective production, ensure the quality and safety of products, and sustain the productive capacity and quality of soil and water resources.

3. Facilities for product handling, post-harvest processing, and marketing that provide market access, sales opportunities, and off-farm employment for farmers and rural communities, and agri-business opportunities for the private sector and farmer organizations.
4. Practices for the quality control and quality assurance of agricultural products that ensure that product quality and safety meet the standards required by the target markets.

6.3.4 Indicative components

Indicative components of the Program might include (from *Strategy Concept Note*):

1. Input supply programme (including credits schemes, seeds, fertilizers, agriculture machinery...etc) - aimed at agribusiness support in these areas, and focused on mobilizing the private sector to provide services.
2. Farm production program (including crops, small rubber plantation, livestock, crop water management and aquaculture programme) - aimed at agribusiness support in these areas.
3. Processing and Marketing (including agro-processing, post-harvest and agri-business programme) - aimed at agribusiness support in these areas.
4. Producer and consumer markets development (including Food Safety, quality control and assurance, information...).
5. Farmer organization Development (also part of extension)
6. Rural Credit Programme for Agriculture and Water Development.
7. Crop insurance component
8. Agro-tourism

6.3.5 Means of and responsibility for implementation

Indicative actions will be required to implement the objectives. They draw on the Strategic Development Plan prepared by MAFF as input to the NSDP, and on the various documents drafted by the TWGAW B1 Strategy Team. During the next phase of this process, they will be reviewed, revised and specified in more detail in a Program Design Document (TOR, Annex 3).

6.4 Water Resources, Irrigation and Land Management Program

6.4.1 Rationale

Land, soil and water are the most fundamental inputs for agriculture. However, land and water resources presently are utilized inefficiently in much of Cambodia, and there are many areas in which cultivable land at present is not used. A crucial issue is the need for legally enforceable rights – secure land titles – to occupy land, without which farmers are reluctant to invest in intensified or diversified production. This issue must be tackled effectively before there can be sustainable increases in agricultural production. Full utilization of land depends also on the ability and willingness of farmers to provide other inputs – labour, knowledge and technology, and enough money to buy good seed, fertilizer, etc.

As noted in Section 5.1.3, water availability is often the most critical success factor in enabling increased agricultural production. Therefore, land development for agriculture has greatest socio-economic benefits where water is available in sufficient quantity, or can be provided by harvesting, seasonal storage, inter-basin transfer, or groundwater withdrawal. Tools such as Land Resource Inventory, Land Use Capability appraisal and planning (including assessment of market potential and access to markets), climate and water potential study and Agro-Ecosystems Analysis (AEA), can help to identify locations in which farmers

and government agencies can invest resources in land and water resource development to produce the greatest possible return. These “land-related” tools must be applied in conjunction with the “water-related” tools of Integrated Water Resources Management, River Basin Management and water allocation (see below) to ensure the optimum use of both resources, together. As noted in Section 6.2.1, the Strategy must promote equitable development. Nevertheless, inventory and analysis of land and water resources will indicate where there are opportunities for regional specialization in different types of agriculture, and will tend to encourage investment in the most potentially profitable areas.

More efficient and productive water management is possible on much of Cambodia’s presently irrigated, potentially irrigable, and rain-fed croplands, using available technologies. Supplementary irrigation during the wet season has been the principal means of increasing production and reducing risk, on about 20% of cropland in use at present. Full dry season irrigation is practiced on only 7-8% of present cropland. An NSDP target is to increase the irrigated area to 25% of cropland by 2010 (Section 1.2). Because of topographic and hydrologic constraints, perhaps 20% of total potential agricultural land is economically irrigable using the irrigation methods traditionally used in Cambodia. However, many other technologies for crop water management (including, for example, water harvesting, conservation tillage, low-volume drip irrigation) are used in other countries, and are practicable in Cambodia.

As water resources are more intensively used, there is a growing danger of competition and conflict among users – farmers, fishers, urban and rural water supply providers, hydro-power generators, etc. There is also a growing risk of resource degradation and ecological damage by over-abstraction and contamination of rivers and lakes by agri-chemicals and other pollutants. To counter this, the techniques of Integrated Water Resources Management (IWRM), River Basin Management (RBM) and water allocation have been developed. These techniques require substantial resources and strong institutions, and international experience shows that they take long periods of sustained effort to succeed. Nevertheless, they should be applied in Cambodia where competition for water threatens to cause conflict among users or to damage the resource. The Mekong River, as a major international water resource, already has some effective arrangements for basin-level water resource and flood management, through the mechanism of the Mekong Agreement. Integrated management of the water and aquatic resources (fisheries, seasonally flooded forests, etc.) in the Tonle Sap basin is essential now, if degradation of the resource is to be avoided. Integrated management of several other basins may become necessary as potentially conflicting water resource developments are planned. However River Basin approach in this strategy is defined as follows *effective use of land and water resources for agriculture and its related uses at river basin level from technical, economical and environmental viewpoints*, because full-scale RBM can not be tackled by this strategy due to limited time and resources (excluded transportation, hydropower, industrial use...etc).

Management of water resources and watersheds commonly must be carried out cooperatively, or within a regulatory framework that avoids over-use or degradation of natural resources through uncontrolled use by individuals and private enterprise. A water resource or watershed normally will provide the greatest net benefit if resource users work together, particularly where land holdings are small and inter-mingled, where the natural paths of water flow are poorly defined or have been modified by human activity, or where the watershed is very prone to degradation because of fragile soils or vegetation cover. The approach of Participatory Irrigation Management and Development (PIMD) is well-established in Cambodia and will be extended. Other arrangements for promoting cooperation at community level, for example to manage sensitive watersheds or communal forest resources, are being

developed in Cambodia. They also must be extended. Commune Councils provide an obvious means of promoting community-level cooperation in resource management.

Soil and water are basic resources for farmers, but they may also present severe hazards – soil erosion and degradation, damaging floods, and droughts or unexpected dry spells – which lead to a very conservative, risk-averse approach to farming. There are many techniques for soil conservation, flood management, and drought mitigation which can be applied in rural Cambodia; such activities commonly require collaboration at community level, and this Program aims to empower community action in this area.

6.4.2 Purpose and Goals

The purpose of this Program is, fundamentally, to increase the productive use of cultivable lands and associated water resources, particularly by increasing the efficiency and effectiveness with which water is managed for crop growth. Although NSDP specifically emphasizes irrigation, the Program will address both irrigable and rain-fed croplands. It aims to encourage investment into the areas (that is, both geographical locations and crop types) in which the greatest socio-economic benefits can be attained, while ensuring that soil and water resources are not degraded by over-use and competition. It has a strong focus on promoting social equity, particularly with regard to enabling and safeguarding access to land, and assisting farmers to avoid the adverse effects of natural hazards. It also aims to facilitate cooperation among farming communities, particularly with regard to managing community-owned facilities.

The Program Development Goal set for 2006-2010 (Section 4.3) is:

Sustainable and pro-poor management of water resources, water management facilities, water-related hazards, and land resources that is integrated, efficient, and carried out in a river basin context.

6.4.3 Objectives

To achieve the Program Development Goal, seven objectives have been defined:

1. Water resources are being developed and used in a way that considers river basins as the fundamental physical unit for management, minimizes degradation of aquatic resources and avoids competition among users, and where appropriate uses the techniques of IWRM and RBM.
2. Land resources have been inventoried and appraised for their agricultural potential, and procedures have been developed to integrate the development and management of land, water and related resources to achieve the optimum use of all of them.
3. Cultivable and pastoral lands with the greatest agricultural potential have been brought into production, and are being used sustainably to produce farm products that provide the best return on investment.
4. Farmers of both irrigable and predominantly rain-fed croplands are better able to manage, harvest and use water (including supplementary irrigation), over a total area that is increasing by at least 20,000 ha/year.
5. Farmers have secure tenure to their land.

6. Rural communities are able to avoid or respond without serious loss to the adverse effects of damaging floods, droughts or unexpected dry spells.
7. Agro-Ecosystems Analysis in irrigation systems, social land concession and economic land concession.

6.4.4 Indicative components

Indicative components of the Program might include (from *Strategy Concept Note*):

1. Integrated, river basin-based Water and Land Utilization Planning
2. Agro-Ecosystems-Analysis-Based Irrigation System Development (based on 1)
3. Improvement of climatologic information
4. study water potential for agriculture
5. Irrigation System Rehabilitation and Development (based on 1)
6. Participatory Irrigation Management and Development (incl. water use efficiency);
7. Participatory On-farm Water and Agricultural Management Training and Extension;
8. Land Allocation and Tenure Program
9. Flood and Drought Preparedness Program (based on 1)

6.4.5 Means of and responsibility for implementation

Indicative actions that will be required to implement the five objectives. They draw on the Strategic Development Plan prepared by MAFF and MOWRAM as input to the NSDP, and on the various documents drafted by the TWGAW B1 Strategy Team. During the next phase of this process, they will be reviewed, revised and specified in more detail in a Program Design Document (TOR, Annex 3).

6.5 Agricultural and Water Research, Education and Extension Program

6.5.1 Rationale

There is a huge global base of knowledge, information and technology (KIT) related to A&W. Cambodia's own research efforts, notably by CARDI and the Technical Departments, are adding to it. This KIT provides the ability to extend traditional knowledge and farming practices, diversify agriculture, and increase productivity. However, there are many areas in which additional knowledge or improved technology are required, or where existing KIT is not used effectively. Furthermore, emerging issues – for example, the need for water harvesting and conservation techniques in rain-fed croplands, or for improved post-harvest processing and marketing to add value – bring additional needs for KIT that is appropriate to Cambodia's agricultural industry.

A particular aspect of KIT is the knowledge about the rural/farming sector that is needed as a basis for policy analysis and planning. There is an ongoing need for practical research on changes in rural/farming communities, the agricultural industry, the economics of agriculture and water management, and other issues that will guide the Royal Government as it refines the policy environment. As the impacts of climate change and variability become more obvious globally, it is increasingly important to forecast effects on agriculture in Cambodia, and to design measures to mitigate adverse impacts and gain benefit from positive ones.

KIT is of little value if it is not used. MAFF and MOWRAM have many extension workers and field personnel whose job is to help farmers apply KIT on their own farms. However, many constraints limit their effectiveness. These include, for example, limited training of extension workers and a lack of facilities like demonstration farms. Hence, mechanisms to

transfer KIT to the “grass roots” need strengthening. For example, the Farmer Field School has shown great promise as a means of educating farmers and transferring technology. At the same time, farmers must be empowered to take responsibility for their own community affairs, for example through continued establishment and strengthening of Farmer Water User Communities and all types of Farmer Organizations, and appropriate capacity building of commune councils. An important element of KIT may be to assist farmers to carry out their own experimentation, develop their own innovations, and ultimately to transfer their own KIT to other potential beneficiaries.

This Program covers all aspects of obtaining and using knowledge, information and technology. These include research, gathering of existing KIT from other countries, further education and training of scientists and extension workers, extension services to farmers, enabling farmers and community-based organizations to participate in activities such as irrigation management, etc. It includes, too, collection of information about rural society, agriculture and agribusiness, and agricultural markets for agricultural products, as a basis for planning and policy development. The Program will cover traditional concerns such as developing improved crop cultivars, and will be extended to new and emerging issues, such as improved processing technology, enhancing the productive role of women, and increasing the efficiency of crop water management. The *Master Plan for National Agricultural Research* provides important guidance. The various components and phases of the Program must be coordinated, particularly those covering agriculture and water management.

6.5.2 Purpose and Goal

The purpose of the program is two-fold: firstly to ensure that RGC officials, farmers, and other agri-business interests have access to and are equipped to use the best available knowledge, information and technology related to agriculture, agri-business and water management, and secondly to enable rural communities, commune councils and other community-based organizations to participate effectively in aspects of agriculture, agri-business and water management that require communal action.

The Program Development Goal set for 2006-2010 (Section 4.3) is:

A comprehensive and coordinated capacity to assemble and utilise agricultural and water-related knowledge, information and technology transfer.

6.5.3 Objectives

To achieve the Program Development Goal, four objectives have been defined:

1. a sustainable and responsive capacity for research, science and technology, consisting of facilities that are adequately resourced, well managed, co-ordinated, and staffed by sufficient trained and motivated scientists/technologists
2. an up-to-date knowledge/information base and technological capacity, that is based on a cost-effective combination of national research and development, field experience, and information gathered from international sources
3. an effective and comprehensive capacity for educating and training research and technical RGC staff, farmers, and others engaged in agriculture, agri-business and water management, and for transferring appropriate technology to potential beneficiaries

4. an effective, nation-wide capacity to empower and train rural communities and commune councils to participate in and take responsibility for communal aspects of agriculture, agri-business and water management

6.5.4 Indicative components

Indicative components of the Program might include (from *Strategy Concept Note*):

1. Crops and water research (including irrigation, crop water requirements, Land/Soil Fertility, Land classification and crop zoning);
2. Rubber Plantation Research;
3. Livestock and Animal Husbandry Research;
4. Water potential Study;
5. Introduction of new innovation irrigation technology for agriculture
6. Agro-industry Development Potential Research;
7. Sociological and economic analysis of rural communities and farming enterprises
8. Pest Control and Management Research;
9. Agricultural Engineering
10. Pre and Post-Harvest Technology Research.
11. Farm Management and Integrated Farming Systems Research
12. Agricultural Extension Policy and Regulation Development;
13. Farming Systems Development;
14. Participatory Training and Extension (ToT, FTOT, FFSs, Field Day and Field Demonstration, Participatory On-Farm Water Management-PIMD concept);
15. Participatory On-Farm Water Management (PIMD methodology);
16. Extension Training Centre Development for Agriculture and Water
17. Media Development; and
18. Agro-Ecosystems Analysis (including for irrigation and land
19. Development of Farmer Organisations (FAs, FWUCs..)
20. MAFF and MOWRAM Human Resources Development, including Agricultural and Water Resources Graduate Degrees.
21. Agriculture and Water Management Training Programme; and
22. Farmer Training Programme in Agriculture and Water Management (based on Farmer Field School model).

6.5.5 Means of and responsibility for implementation

Indicative actions will be required to implement the four objectives. They draw on the Strategic Development Plans prepared by MAFF and MOWRAM as input to the NSDP, and on the various documents drafted by the TWGAW B1 Strategy Team. During the next phase of this process, they will be reviewed, revised and specified in more detail in a Program Design Document (TOR, Annex 3).

7 Resource requirements

The resources required to implement the Strategy for A&W are somewhat different from those required by agriculture and water resources management themselves. Strategy implementation requires, in particular, human resources, administrative/ management capacities in the agencies involved, facilities and infrastructure, and information/knowledge bases – all of which require money to pay for them. Access to that money depends upon the belief of stakeholders that they will benefit from the Strategy. At present, – as stakeholder analysis in the *Strategic Profile* document showed – key stakeholders, especially RGC leadership, EDP representatives, and farmers, have this belief and are motivated to direct resources towards A&W.

The financial resources – money – needed to implement the Strategy will be defined during the Program Design phase. However, even at this early stage of the 2006-2010 planning period, many resource commitments have been made by the principal stakeholders, so that there are constraints on what can realistically be proposed.

The scale of the financial resources that will be required is estimated to be approximately US\$350 million for the four Program areas (Table 7.1). As noted in Section 2.1, other RGC agencies also are engaged in A&WR-related activities, notably rural infrastructure (roads etc.) and land management. Their budgets for such activity will help to implement the Strategy for A&WR, but at this stage they should not formally be included in the Strategy’s budget. It is likely that this will become more practicable as the Strategy progressively is implemented, particularly at the stage of planning investments during 2006-2010.

There is no reason why the entire US\$350 million should come from RGC and EDP sources. Many of the benefits of the Strategy can be regarded as merit or public goods, for which government can reasonably be expected to pay. These include, for example, the social benefits to the nation as a whole of food security for poor households, conservation of water resources that otherwise might be degraded by uncontrolled exploitation, or the provision of national information on soil and land resources, which no private interest could afford to collect. On the other hand, many outputs and outcomes of the Strategy could be regarded as private goods, for which the direct beneficiaries can be identified and who might reasonably be expected to pay. These could include, for example, extension and technology transfer services, water management infrastructure, or product market information. At present, RGC policy is for the costs of irrigation management to be transferred progressively to beneficiaries. There are, therefore, many issues that must be considered – the appropriate sources of funding to provide public and private goods, the appropriate fees for particular goods, the rate at which costs can be transferred from the government to the beneficiaries, and so forth. These are to a considerable degree a political decision, and will require additional discussion during the program design phase, and probably thereafter.

Table 7.1. Indicative costs of Program areas, 2006-2010.

Program area	Total cost (US\$million)
1. Institutional capacity building and management support program for agriculture and water	50
2. Food security support program	50
3. Agricultural and agri-business (value-chain) support program	100
4. Water resources, and irrigation and Land management program	100
5. Agricultural and water resources research, education and extension program	50
Total	350

Financial resources to implement the Strategy are expected to come principally from the national (RGC) budget and from official development assistance provided by EDPs. NGOs are expected to provide relatively small but nevertheless significant financial resources for rural development, particularly directed towards poverty reduction in the poorest communities. A key aim of the Strategy is, of course, to encourage investment by the private sector and farmers themselves. However, such private investment will be a result (“output”) of the Strategy rather than a resource or “input”, and (like NGO investment) is beyond the immediate control of the agencies responsible for implementation.

8 Monitoring and evaluation

A critical component of strategy and program implementation is to monitor the results that are achieved, against the targets or indicators that have been set. Section 1.2 discusses the “indicators of success” established by NSDP that are relevant to the Strategy for A&W. Because the NSDP indicators are very “high level” (Table 1.1), the mid-term (2008) output indicators and end-period (2010) outcome indicators listed in Annex 3 will be particularly important for monitoring and evaluating Strategy performance.

The NSDP *Monitoring Framework* established by the MoP provides the context for monitoring the Strategy for A&W. This states that the RGC will (i) prepare an annual progress report on implementation of the NSDP, and (ii) carry out a comprehensive review, towards the end of 2009, of progress made in achieving the targets of the NSDP. The focus is intended to be on assessing progress in achieving selected core indicators, alignment of National Budget allocations and EDP disbursements with NSDP priorities, and proposals for adjustment of NSDP.

MAFF and MOWRAM will, as lead sector agencies, play the principal role in monitoring Strategy implementation, and providing information required by MoP for their reporting on NSDP. In this regard, the Department of Planning and Statistics (MAFF) and Planning and International Cooperation Department (MOWRAM) are responsible for compiling data for monitoring purposes. Of course, MAFF and MOWRAM management will use these data for their own internal monitoring and evaluation, following normal procedures. It should be noted that strengthened monitoring and evaluation procedures are an objective in several Program areas.

Insofar as implementation requires the expenditure of funds received from EDPs, performance monitoring will follow the normal procedures established by the EDP concerned. This is particularly the case with expenditure to procure consulting services, purchase equipment, construct civil works, etc.

Monitoring performance against the indicators list format in Annex 3 will assist members of TWGAW, including MAFF and MOWRAM, to learn from progress during the current NSDP planning period, particularly with regard to constraints that hinder progress. Such “lessons learned” will be needed to revise the Strategy for the 2011-2015 period, and to direct resources towards priority areas. Implementation of the Strategy on A&WR will be strongly influenced by progress in other areas of activity, notably in implementing decentralization and deconcentration reforms. Monitoring of performance under this Strategy therefore will need to take account of events in other areas.

Annex 1. Reference documents

Main Documentary References

The Strategy Team appointed to draft the national Agriculture & Water Strategy for Cambodia has especially references the following documents during its strategy preparations. In addition, a number of other important policy and strategy related documents are implicitly references via these mentioned documents. The main overall references for the strategy process is generally assembled in the *Strategic Profiles for development of a medium-term strategy for agriculture and water sectors*, (Document C.2 below), which concentrated numerous references in aid of these strategy formulations.

A. General National Context

1. *Rectangular Strategy*, RGC. June 2004.
2. *Cambodian Millennium Development Goal to 2015*, Ministry of Planning, RGC, May 2003.
3. *National Strategic Development Plan 2006-10*, Council of Ministers, Royal Government of Cambodia (RGC), January 2006.
4. *NSDP Monitoring Framework*, Ministry of Planning, RGC, May 2006.
5. *Cambodia: Halving Poverty by 2015? Poverty Assessment 2006*, World Bank, February 2006.
6. *National Poverty Reduction Strategy 2003-2005*, Council for Social Development, RGC, December 2002.
7. *Cambodia Economic Forum: A SWOT Analysis of the Cambodian Economy*, Supreme National Economic Council (January 2006).
8. *Action Plan for Institutionalisation of the Medium Term Expenditure Framework*, Ministry of Economy and Finance, Phnom Penh, Dec. 2005
9. *Strategic Framework for Decentralization and De-concentration Reform*, RGC, June 2005
10. *Outline of Framework of Decentralisation and Deconcentration*, Remarks by Minister of Interior, May 2006.
11. *Joint Government-Donor Strategy for Phasing Out Salary Supplementation Practises in Cambodia*, draft, Technical Working Group on Public Administrative Reform, December 2005.

B. General Sector References

1. *Agricultural Sector Strategic Development Plan, 2006-10*, MAFF, Oct. 2005
2. *Strategic Development Plan 2006-2010*, draft, Ministry of Water Resources and Meteorology, May 2005.
3. *National Forum on Cambodia's Agrarian Structure in the Context of Trade Integration, Proceedings*, Supreme National Economic Council (June 2005).
4. *Cambodia: Sources of Growth – Agriculture Sector*, draft, World Bank (November 2005).
5. *Gender Mainstreaming Policy and Strategy in Agriculture*, MAFF, Phnom Penh, February 2006.

C. Strategy Preparation References

1. *Inception Note for development of medium-term strategy for agriculture and water*, B1 Strategy Team, Technical Working Group for Agriculture and Water, January 2006

2. *Strategic Profiles for development of a medium-term strategy for agriculture and water sectors (2006-2010)*, B1 Strategy Team, Technical Working Group for Agriculture and Water, April 2006.
3. *Strategy Formulation I. Alternative options and structures for development of a medium-term strategy for agriculture and water sectors (2006-2010)*. B1 Strategy Team, Technical Working Group for Agriculture and Water, May 2006.
4. *Proceedings of TWGAW Stakeholder Workshop on Strategy Formulation*, May 2006.
5. *Strategy Concept Note for development of a medium-term Strategy for Agriculture and Water Sectors (2006-2010) (draft)*, B1 Strategy Team, Technical Working Group for Agriculture and Water, June 2006.
6. *Concept Note: Development of A&W Strategy: the implementation and funding framework (draft)*, B1 Strategy Team, Technical Working Group for Agriculture and Water, June 2006.

D. Water, Irrigation and Land Management Program References

1. *National Water Resources Policy*, January 2004. Council of Ministers, RGC.
2. *Strategic Development Plan for the Water Sector, 2006-10*, MOWRAM, December 2005.
3. *Strategy of Land Policy Framework*, Council of Land Policy, RGC, September 2002.
4. *Cambodian Agrarian Structure Study*, World Bank, Canadian International Development Agency and Gesellschaft fur Technische Zusammenarbeit, August 2005.
5. *Rural Poverty in Cambodia: Impact of Land Distribution and Alternative Policies*, Draft, World Bank, November 2003.
6. *Small Farms Are More Efficient and Sustainable*, Multinational Monitor, July/August 2000.

E. Agricultural and Agri-Business Program References

1. *Final Diagnostic Study*, Agrifood Consulting International for AusAID, June 2006.
2. *Financial Sector Blueprint for 2001-2010*, Asian Development Bank, Dec. 2001
3. *Financing SMEs in Cambodia: Why do Banks Find it so Difficult?*, MPDF, April 2003.
4. *Establishment of Open Paddy Market in Cambodia*, Feasibility Study, JICA, August 2006
5. *Business Development Services for Small Enterprises: Guiding Principles for Donor Intervention*, Committee of Donor Agencies for Small Enterprise Development, WB, Washington, Feb 2001.
6. *On the Establishment and functioning of Agricultural cooperatives*, Union of Agricultural Cooperatives and Pre-Agricultural Cooperative, Royal Decree, July 2001.
7. *Inventory of Farmer Organisations in Cambodia*, AFD, February 2006.
8. *SME Development Framework*, Asian Development Bank
9. *Vegetable and Fruit Production Marketing Policy*, Draft, Ministry of Agriculture, Forestry and Fisheries, April 2003.

F. A&W Research, Education and Extension Program References

1. *Cambodia: Master Plan for National Agricultural Research*, Ministry of Agriculture, Forestry and Fisheries (January 2006).
2. *Independent Completion Report for Cambodia-Australia Agricultural Extension Project (CAAEP)*, AusAID, August 2006.
3. *Project Completion Review of CARDI Assistance Project*, AusAID, September 2006.
4. *National Research and Extension Policy*, MAFF, 1999
5. *Cambodia Agricultural Research Fund*, Review Report, ACIAR, June 2006

G. Institutional Capacity and Management Support Program References

1. *The Structure of MAFF and the function of Policy & Planning*, Discussion Paper, ADB TA, February 2006.
2. *Organisation and Functioning of MAFF*, Sub-decree 17, April 2000.
3. *The Project Implementation Unit (PIU) Dilemma*, A Practise Note, UNDP, Sep. 2003.

I. Food Security Program References

1. *Circular of RGC on Food Security and Nutrition*, CARD, RGC, June 2003
 2. *Cambodia Nutrition Investment Plan 2002-2007*, Ministry of Planning, June 2002.
 3. *National Medium Term Framework of FAO, 2006-2010*, June 2006.
 4. “*National Programme for Household Food Security and Poverty Reduction (NPHFSPR) 2007 – 2011*”, MAFF, FAO, UNDP, June 2006.
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Annex 2. MAFF and MOWRAM goals

(from *Strategy Formulation I* document)

Agricultural Sector Development Goal

The overall agricultural sector development goal is to ensure food security, increase incomes, create employment and improve nutrition for all people by improving productivity, diversification and commercialization of agriculture with environmentally sound protection and food safety. In order to achieve the main goal of the sector, following strategic areas³ will be targeted:

1. Improve food security, productivity, and diversification

- 1) Ensure food security for all people; increase income and improve livelihood for rural poor population by improving productivity and diversification of agriculture; and
- 2) Enable food-insecure households to increase food availability from their own agriculture and livestock production, common property fisheries and common property forests.

2. Improve and strengthen agricultural research and extension systems

- 1) Enhance researches in agricultural technologies and key research programmes taking into account technologies developed and innovated in the region and in the world, and researches in free market economy;
- 2) Strengthen and improve the capacity in technological research, development and innovation through academic study, technological exchanges, transfer of technologies and implementation of Good Agricultural Practices (GAPs) to ensure the quality and safety of agricultural products;
- 3) Strengthen and improve exchange of technologies and experiences among stakeholders (researchers, extension professionals and farmers) through seminars, workshops, study tours, field demonstrations, and field days; and
- 4) Strengthen and improve agricultural extension services to promote application of improved technologies in agricultural production (e.g. biotechnologies), cost-effective and environmentally friendly intensification and diversification of agricultural practices, and application of agricultural conservation techniques, and organic farming.

3. Agri-business (Market access for agricultural products)

- 1) Improve market opportunity and access for agricultural products to ensure sustainable economic growth, and employment for rural farmers; and
- 2) Improve agricultural safety standards.

4. Land reform (to ensure secure land tenure and efficient land market)

- 1) Ensure access to land resources for rural poor farmers by reducing land disputes, and improving land tenure security and land markets;
- 2) Ensure effective use of land for socio-economic development; and
- 3) Ensure protection and sustainable use of land resources.

³ **Please note** that these strategic areas are identical to those identified by the official MAFF's "Agricultural Sector Strategic Development Plan 2006-2010" and MOWRAM's "Strategic Development Plan 2006-2010". They are thus at this strategy development stage taken as expressions of national policy goals and form the foundation for the strategic direction.

5. Pro-poor land access

1. Create possibilities for poor households to have land for residence, and family farming through implementing social land concession programme, and de-mining, UXO removal and victim assistance programme;
2. Improve state land management;
3. Ensure access to land for rural poor households for organised production to promote agricultural industrialization and commercialization; and
4. Ensure land tenure security for poor households in rural areas.

Water Sector Development Goal

MOWRAM's SDP-WS defines five Over-arching goals. That for water resources management and development is that "Cambodia's water resources are managed and developed in an effective, equitable and sustainable manner. This achieves the greatest possible benefit for the people while conserving aquatic ecosystems."

Within this area of work, the priority goals are:

1. A National Irrigation and Drainage Strategy is in place, supported by river-basin plans in selected key basins and developed in collaboration with MAFF, MRD and MoE, that is guiding medium and long-term development of the sector;
2. Farmers of irrigable cropland are better able to manage water, over an area that is increasing by at least 10,000 ha/year. "Hardware" (infrastructure such as regulators and canals) and "software" (improved management systems such as Farmer Water User Communities) are being developed in a fully complementary way;
3. Farmers of predominantly rain-fed cropland are better able to manage water, over an area that is increasing by at least 10,000 ha/year. "Hardware" (infrastructure such as dug ponds or more efficient field layouts) and "software" (e.g. advisory extension services) are being developed in a fully complementary way; and
4. An integrated approach to water resources management and development is in use, which considers all possible sources of water, linkages between water and other components of the basin environment, and the varying human and ecological demands for water resources.

Annex 3. Terms of Reference for Program Development

General Note

1. The General Program Features

The National Development Programs to be formulated under the following Terms of Reference are conceived as so-called 'outline' programs. This term implies that the programs *would only need to be developed to the output level* (following the common logical framework terminology) for each component. However, where the Program Design team (PD Team) thinks it is useful or even necessary, the design could include some key activities.

It is thereafter expected that different EDP (donor) agencies may agree with RGC to support/finance one or more components under each program, and then subsequently further develop these components in deeper detail (identify activities, work plans etc.) – following their respective program cycle management methodologies. This implies that a detailed description of *the outputs* is given in the program document, since it will be used as a starting point for further elaboration of projects / activities.

The PD Team will use the classical "logical framework approach" as illustrated in the figure on the next page. It should be noted that:

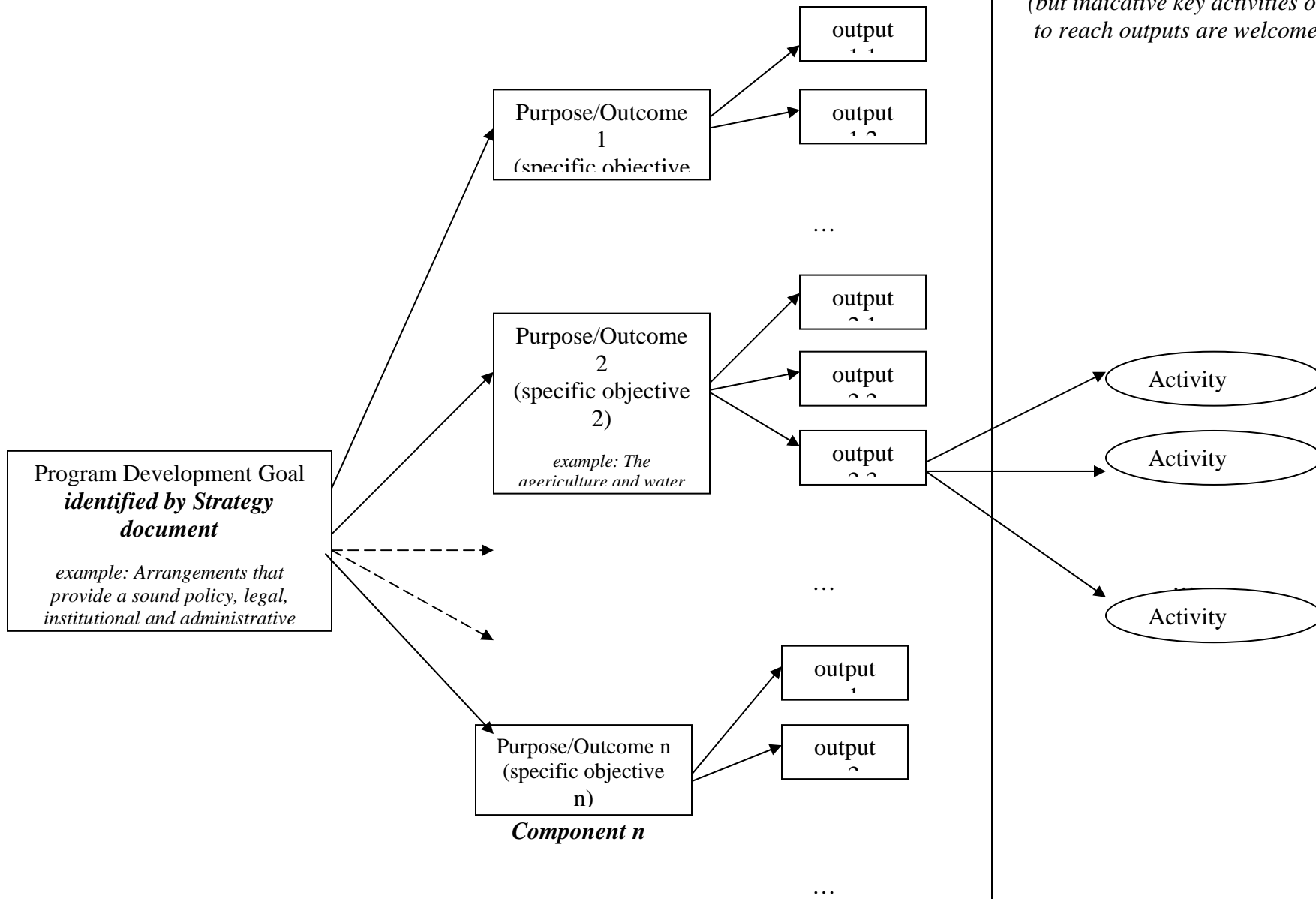
- For each program there is **one single goal**, which is the one stated in the Strategy formulation document, and called "Program Development Goal". The five "Program Development Goals" have been identified during the strategy formulation, as the best ones to ensure the achievement of the over-arching goal set in the Strategy document for the A&W sector. That's the reason why they should not be modified.⁴
- The next step in the hierarchy of the logical framework is that of "purpose" or "outcome" (which may be called specific objectives, too) which will contribute to the achievement of the "Program Development Goal". From this level downwards in the hierarchy, it is the responsibility of the PDTeam to make propositions. Some *indicative* "specific objectives" for the five programs have been identified by the strategy team and are presented in the strategy document (§ 6.1.3, 6.2.3, 6.3.3, 6.4.3, and 6.5.3). They come from previous analysis and discussions, including synthesis of the objectives set by MAFF and MOWRAM in their respective Strategic Development Plans; they should be considered as a basis for further reflection and analysis by the PDTeam. These "outcomes", or specific objectives are seen as being the basis for the definition of the different "components" of the program.
- Then come the "outputs" which should be produced in order to achieve the outcomes. They are the main level to be described in detail.

⁴ Note that the 'Program Development Goal' must be achieved (and achievable) by the program's components. A 'Program Development Goal' thus effectively becomes the 'Development Goal' for each of its components - to which they must all contribute. Each program, in turn, must contribute to the overall sector goal.

LOGICAL FRAMEWORK / Hierarchy of objectives

Requested in Program design

*Not generally requested in Program design
(but indicative key activities or process
to reach outputs are welcome)*



A crucial element of the program design document should be the identification of priorities, key milestones and conditions of success for the different components / outputs. Indeed, the PDD should avoid being the description of an exhaustive, ideal and miraculous, but completely unrealistic program. Some choices might have to be made, in order for the program to have a real impact on the situation of the sector, by reaching concrete outputs necessary to the achievement of the program objective. Since the program will be further detailed by interested donors later on, the PDD should also recommend some clear indicators for the different outputs proposed, as well as some basic assessment criteria for the whole program.

In link with the previous point, and especially in order to scale up the efficiency of the proposed outputs/activities, the team should keep in mind that the program is part of a *sectoral* strategy, which directly or indirectly involves many stakeholders. On the government side, for example, though MAFF and MOWRAM are the main ministries concerned, a number of other ministries have some weight in the evolution of the sector. In some cases, progress may depend heavily on some decisions to be made by these institutions, and thus be strongly out of reach of the agencies directly in charge of the implementation of the strategy. These situations should be avoided as much as possible, or clearly identified (conditions). On the opposite, the programs should try to rely on MAFF and MOWRAM's clear responsibility and commitment to implement this common strategy, and try to reinforce the operational links between these 2 ministries.

For the same reason, in order to reach efficiency of the program, a special attention should be put on the dynamics of the program, in terms of necessary organisation of outputs and activities in time (sequence and pre-conditions to next output / activity)

2. General process of work for the PD Teams

The suggested program of work for the team is the following:

- Review relevant documentation: this includes all documents prepared by the strategy team, but also specific documents related to the concerned theme, including some projects documents or evaluation reports. A key element of the program design will indeed be to take into consideration the lessons learned from previous programs, projects, etc.⁵
- If necessary conduct complementary interviews with key stakeholders (list to be given?)
- On this basis, carry out a complementary problem analysis (including specific SWOT / stakeholder analysis / ...) to get a deeper understanding of the area, the key obstacles, the opportunities, etc., including the current main on-going projects and programs and their objectives, achievements, difficulties and weaknesses, ...
- Identify the *key outcomes* (specific objectives; the goal being the one stated in the strategy), and related *outputs* and in some cases main activities (or process to be followed). This will lead to the proposition of different "components" for the

⁵ *The ToR of each program should give a list of these reports*

program (some indicative components are listed in the Strategy document). Some flexibility is possible at this stage of the design, but the components should be as homogenous as possible in their content, and keep a reasonable size in order to make implementation technically and financially manageable.

- Regularly interact with stakeholders and other Program Design Teams
- The description of the program will follow the "logical framework" approach, either globally, or for each component or sub-component, depending on the structure / complexity / content / ... of the program.
- The following elements should be part of the description of the program:
 - a tentative schedule for the program / components. This should give the necessary time frame for the activities (this is closely linked to priorities and conditions in §1).
 - a estimation of costs for the overall program and the different components
 - the responsibilities of the different stakeholders in the implementation
 - a description of the interactions and articulations with the other programs of the A&W strategy, and/or with other sectors.

Please note that the following TORs are strictly preliminary and they will need considerable expansion and further resourcing before fielding design teams to develop the programs. Processes to accomplish these TOR revisions are currently ongoing.

Terms of Reference for Program Design Team

Institutional Capacity Building and Management Support Program for Agriculture and Water Resources

1 Background

The background to this Program Design task is provided by the *"Agriculture and Water Strategy"* draft report . In essence, the Strategy will assist MAFF and MOWRAM to meet the responsibilities and achieve the targets set for them by the National Strategic Development Plan (NSDP) for 2006-2010, and by Cambodia Millennium Development Goals. Additional information is provided in the working documents *"Strategic Profiles"* and *"Strategy Options"* for development of a medium term Strategy for Agriculture and Water Sectors (available from the TWGAW Secretariat).

The Key Goals of the Strategy will be achieved by work in five program areas. One of these is the "Institutional Capacity Building and Management Support Program for Agriculture and Water Resources".

2 Objective

The principal objective of the Program Design Team is

To prepare a Program Design, acceptable to the TWGAW and to MAFF and MOWRAM, for the *"Institutional Capacity Building and Management Support Program for Agriculture and Water Resources"*.

The target date for completion of the objective is 31 August 2007.

3 Scope

The *"Agriculture and Water Strategy"* Draft report (Annex 1, Section 6.1) presents the scope of the Program. It is based on the Strategic Development Plans prepared by MAFF and MOWRAM as inputs to the NSDP planning process. The objectives, outputs and activities already specified in those Plans will be revised, consolidated, and/or added to as necessary. Further work on the Program is needed, particularly by providing more detailed "indicative actions" and estimates of the resources required, to ensure that it provides a sound and comprehensive basis for resource allocation by ministry officials, the Royal Government, and External Development Partners.

The following specific aspects of program components should be considered:

1. Institutional Capacity Improvement, (including Priority Mission Groups and Incentive Practice): strengthening in all aspects of institutional capacity of both MAFF and MOWRAM for respectively implementing policies and plans as well as enforcing laws and regulations.
2. Agricultural and Water Resources Information/Data Systems and Services Improvement: enhancing agricultural and water resources information systems and

services [including Food Security and Vulnerability Information System, Hydro-Meteorological Data System (flood and drought), MAFF and MOWRAM Statistics,...] for better management and use by policy makers and data users as well as promoting linkage MAFF and MOWRAM's systems.

3. Agricultural and Water Resources Legislation Development and Enforcement: review the existing agricultural and water resources legislation as well as enforcement capacity, and thereby identify/propose formulation of additional necessary regulatory frameworks and capacity.
4. Gender and food security mainstreaming: strengthening and building capacity of MAFF and MOWRAM's concerned staff in gender and food security issues as well as promoting the mainstreaming of these issues.
5. Financial Management Systems: review the current financial management systems (including Medium Term Expenditure Frameworks, Financial Management Manual) and capacity, and suggest specific training to concerned staff, especially with relation to MTEF. Identify status of MOWRAM's involvement in MTEF exercise.
6. Monitoring and Evaluation Framework: review the existing framework/mechanism and providing necessary measures/suggestions for strengthened framework/mechanism.
7. Coordination mechanism and procedures: identify current coordination mechanisms and procedures and propose effective measures.
8. Decentralisation of human resources to sub-national levels: identify capacity and human resources needed at sub-national levels for effectively discharging MAFF and MOWRAM technical support.

4 Outputs and reporting

1. An **Inception Note** will be provided to the designated task manager within one week of commencing the task.
2. The principal output will be a **Program Design Document**, in draft and final forms (see section 5). The Program Design Document should follow an acceptable format advised by the TWGAW and be summarized in a logical framework. It will present a set of complementary activities, to be carried out by MAFF and MOWRAM during the NSDP-III planning period, that together will enable the ministries to effectively achieve their targets under NSDP.
3. The principal output will be supported by (1) an **oral presentation to a seminar** for the TWGAW and (2) a covering **Aide Memoire** to the designated task manager that reviews the design process and presents any findings or observations that are not included in the Program Design Document.

5 Activities

The Program Design Team will:

1. Familiarise itself with reports/working papers prepared by the B1 Strategy Team, MAFF and MOWRAM Strategic Development Plans, and other relevant documents, including reports or working papers produced by past and on going projects related to the scope of the program.
2. Submit an Inception Note that *inter alia* presents a work plan, a proposed format for the Program Design Document, and the Team's understanding of and proposed approach to the task (cf annex 1 "*Organization of PDD formulation for Program 1*").

3. Consult as necessary with key officials of MAFF, MOWRAM and CARD, members of the TWGAW, and other stakeholders (including MAFF and MOWRAM technical personnel) as deemed appropriate.
4. Advise the task manager, at least weekly and by email, on progress and any matters that might hinder successful completion of the task.
5. Submit a draft Program Design Document, carry out any revisions needed to respond to the task manager's and stakeholders' comments, and submit a final Program Design Document.
6. Liaise with other Program Design Teams contracted by TWGAW.
7. Assist the B1 Strategy Team of TWGAW to compile this and other Program Designs into a Strategic Framework for A&WR (national Specialist only).
8. Advise the task manager, by means of an Aide Memoire, of any findings or observations that are not included in the Design Document, and review the design process.
9. Present an oral summary of the proposed Program Design to a seminar for TWGAW members. The presentation should be supported by a Powerpoint presentation and handout.

6 Timing

The following timing only gives the main steps of the process, with the duration of these "individual" activities. The duration of the whole process is not the sum of these "individual" durations, because these different steps will not follow each other in a continuous manner, in order to (i) take into account the time for "thematic" consultants to produce their reports; (ii) allow for the PDTeam to discuss, write, coordinate reflexions between permanent and short term national and international consultants, exchange with resource persons, BITF, Task managers, Design Facilitators' group, ...). The total duration of the process can be estimated to 6/7 months

- | | |
|--|-----------------|
| 1. Preliminary review of all relevant documents: | 1 Week |
| 2. Preparation mission: | 2 Weeks |
| 3. Analytical missions on specific issues (by national / international short term consultants) | 3 / 4 * 2 Weeks |
| 4. Formulation of first Draft PDD | 3 Weeks |
| 5. Stakeholders' workshop / review of PDD | 1 Week |
| 6. Finalization of Draft PDD | 2 Weeks |

7 Composition of Team

The Core Program Design Team would comprise:

- one international consultant (institutional specialist) as the main coordinator of the work (regular missions + follow up from office by e-mail)
- one local international adviser, as co-coordinator (French Advisor to MAFF)
- one full time national consultant (institutional / management specialist)
- 3 staff from MAFF (with respective specialization in Finance and budget / Planning / Human Resources Development)
- 3 staff from MOWRAM (with respective specialization in Finance and budget / Planning / Human Resources Development)

3 to 4 short term international consultants will normally be needed on specific issues: their number / areas of intervention / TOR and required qualification will be decided during the preparation mission.

As indicated in the Draft Action Plan for the formulation of the A&W National Development Program, the PDTeam will strongly interact with: MAFF and MOWRAM officials / TWGAW through B1 TaskForce / the Design Facilitators Group, and mobilize resource people among the different stakeholders.

8 Budget

Item	Cost (US\$)
International Coordinator (2 missions of 10 days / 2 missions of 5 days / 20 working days from Office)	50 000
Full time National Consultant (6 months)	7200
3 / 4 International Specialists, one 10 days mission each	48 000
National Staff from MAFF/MOWRAM (monthly allowance)	7200
2 days Workshops (2)	5 000
Local expenses: stationery, printing, meeting/seminar expenses, translation	3 000
TOTAL	120 400

Terms of Reference for Program Design Team

Food security support program⁶

1. Background

The background to this Program Design task is provided by the *Strategy Formulation II* report (Annex 1) – Agriculture and Water Strategy (2006-2010). In essence, the Strategy will assist MAFF and MOWRAM to meet the responsibilities and achieve the targets set for them by the National Strategic Development Plan (NSDP) for 2006-2010, and by Cambodia Millennium Development Goals. Additional information is provided in the working document *Strategic Profiles for development of a medium term Strategy for Agriculture and Water Sectors* (available from the TWGAW Secretariat). The Key Goals of the Strategy will be achieved by work in five program areas. One of these is the “Food security support program”.

2. Objective

The principal objective of the Program Design Team is to prepare a Program Design, acceptable to the Co-Chairs of the TWGAW, for the “Food security support program”. The target date for completion of the objective is 30 September 2006.

3. Scope

The *Strategy Formulation II* draft report (Section 6.2) presents the scope of the Program. It is based on the Strategic Development Plans prepared by MAFF and MOWRAM as inputs to the NSDP planning process. The objectives, outputs and activities already specified in those Plans will be revised, consolidated, and/or added to as necessary. Further work on the Program is needed, particularly by providing more detailed “indicative actions” and estimates of the resources required, to ensure that it provides a sound and comprehensive basis for resource allocation by ministry officials, the Royal Government, and External Development Partners. More specifically, the following aspects of the program should be considered:

1. Increasing and ensuring food availability by increased household food production through improved skills in agriculture and livestock production, water management, and community-based fishery and forestry management.
2. Improving food accessibility by enhanced alternative income generation through improved skills in trades, micro-business/enterprise, off-farm opportunities and activities, pro-poor tourism activities, Community Micro-Project, etc.
3. Ensuring food use and utilization by focusing on improvement of nutrition, hygiene and sanitation awareness, knowledge and practices (including HIV/AIDS).
4. Empowering local community and groups and strengthening food security safety nets through participatory community organization and development as well as promotion of self-helping group, saving group, women group – gender, farmer association, etc.
5. Improving policies on food security.

The above aspects should be basically drawn from the recently formulated document of MAFF on “National Programme for Household Food Security and Poverty Reduction (NPHFSPR) 2007 – 2011”. However, synergy and connection among all components and between Food Security and other programme areas should be thoroughly made.

Outputs and reporting

⁶ This TOR embody some adjustments only to the recently formulated document of MAFF on “National Programme for Household Food Security and Poverty Reduction (NPHFSPR) 2007 – 2011”.

Given that the NPHFSPR 2007 – 2011 has already been formulated and approved, expected outputs and reporting would be as follows:

1. The principal output will be a **Program Design Document**, in draft and final forms (see section 5). The Program Design Document should follow an acceptable format advised by the TWGAW and be summarized in a logical framework. It will present a set of complementary activities, to be carried out by MAFF and MOWRAM during the NSDP-III planning period, that together will enable the ministries to effectively achieve their targets under NSDP.
2. The principal output will be supported by (1) an **oral presentation to a seminar** for the TWGAW and (2) a covering **Aide Memoire** to the designated task manager that reviews the design process and presents any findings or observations that are not included in the Program Design Document.

4. Activities

The Program Design Team/Expert will:

1. Familiarise itself with reports/working papers prepared by the B1 Strategy Team, MAFF and MOWRAM Strategic Development Plans, and other relevant documents.
2. Revise as necessary the NPHFSPR 2007 – 2011 by sorting components, outputs and activities as specifically indicated in section 2 (Scope).
3. Food insecurity mapping and stakeholders related inventory and mappings.
4. Consult as necessary with key officials of MAFF, MOWRAM, CARD, MRD, and Ministry of Health, members of the TWGAW, and other stakeholders (including MAFF and MOWRAM technical personnel) as deemed appropriate.
5. Submit a draft Program Design Document, carry out any revisions needed to respond to the stakeholders' comments, and submit a final Program Design Document.
6. Liaise with other Program Design Teams contracted by TWGAW.
7. Assist the B1 Strategy Team of TWGAW to compile this and other Program Designs into a Strategic Framework for A&W..
8. Advise the task manager of any findings or observations that are not included in the Design Document, and review the design process.
9. Present an oral summary of the proposed Program Design to a seminar for TWGAW members.

5. Timing

The task is envisaged to be carried out over a Six-week period:

1. Draft Program Design Document due: end of week 1
2. Stakeholders' comments provided to Team/Expert by: end of week 2
3. Final Program Design Document and Aide Memoire due: middle of week 4
4. Presentation to TWGAW seminar: end of week 5-6

6. Composition of Team

Only one international Food Security Specialist will be engaged for the revision and finalization of the NPHFSPR 2007 – 2011 document. The input of the international Specialist will be during the entire three weeks.

7. Budget

Item	Cost (US\$)
Locally available international specialist, fee, (45 days x \$350)	10,000
Miscellaneous expenses: stationery, printing, meeting/seminar expenses, translation	1,000
TOTAL	11,000

Terms of Reference for Program Design Team

Agricultural and agri-business (value-chain) support program

1 Background

The background to this Program Design task is provided by the *Strategy Formulation II* report (Annex 1). In essence, the Strategy will assist MAFF and MOWRAM to meet the responsibilities and achieve the targets set for them by the National Strategic Development Plan (NSDP) for 2006-2010, and by Cambodia Millennium Development Goals. Additional information is provided in the working document *Strategic Profiles for development of a medium term Strategy for Agriculture and Water Sectors* (available from the TWGAW Secretariat).

The Key Goals of the Strategy will be achieved by work in five program areas. One of these is the “Agricultural and agri-business (value-chain) support program”.

8. Objective

The principal objective of the Program Design Team is

To prepare a Program Design, acceptable to the Co-Chairs of the TWGAW, for the “Agricultural and agri-business (value-chain) support program”.

The target date for completion of the objective is 30 September 2007.

9. Scope

The *Strategy Formulation II* draft report (Annex 1, Section 6.2) presents the scope of the Program. It is based on the Strategic Development Plans prepared by MAFF and MOWRAM as inputs to the NSDP planning process. The objectives, outputs and activities already specified in those Plans will be revised, consolidated, and/or added to as necessary. Further work on the Program is needed, particularly by providing more detailed “indicative actions” and estimates of the resources required, to ensure that it provides a sound and comprehensive basis for resource allocation by ministry officials, the Royal Government, and External Development Partners.

More detailed design of each component (including cost estimates and geographic targets) and in-depth analysis of linkages between components should be carried out. The following specific aspects of program components should be considered:

1. National Programme for Household Food Security and Poverty Reduction (Value chain at household level): verify linkages between this program and other components.
2. Input supply programme (including credits schemes, seeds, fertilizers, agriculture machinery, irrigation schemes and equipment, etc) - aimed at agribusiness support in these areas: review roles of public/NGO and private sector roles in this area. Define input supply by farm size (small: <1.0 ha, medium: 1.0-5.0 ha, and large commercial plantation: >5.0 ha).
3. Farm production program (including crops, small rubber plantation, livestock, crop water management, pond and aquaculture program) - aimed at agribusiness support in

these areas: define support by farm size (small: <1.0 ha, medium: 1.0-5.0 ha, and large commercial plantation: >5.0 ha). Also, incorporate agricultural diversification practices into the design of this component.

4. Processing and marketing (including agro-processing, post-harvest, and agri-business program (inc. import substitution and export promotion) - aimed at agribusiness support in these areas: incorporate, in the design of this component, consideration for skill training (e.g. in processing, marketing, etc.), improvement of rice mill efficiency, and market infrastructure development. Define support by farm size (small: <1.0 ha, medium: 1.0-5.0 ha, and large commercial plantation: >5.0 ha).
5. Producer and consumer markets development (including Food Safety, quality control and assurance, information...): define support by farm size (small: <1.0 ha, medium: 1.0-5.0 ha, and large commercial plantation: >5.0 ha).
6. Farmer organization Development (also part of extension): define public/NGO and private sector roles as well as the roles of the commune councils in this area. Incorporate, in the design of this component, the consideration for pro-poor contract farming, relevant regulations and mechanism. Also, define purpose-specific farmer organizations that would promote food security, poverty reduction, FWUGs and agricultural commercialization.
7. Rural Credit Programme for Agriculture and Water Development: define support by farm scale (small-scale: <1.0 ha, medium scales: 1.0-5.0 ha, and large commercial plantation: >5.0 ha. Also, define clearly mechanism to ensure transparency of credit service provision and flow of related information.
8. Crop insurance component: define support, especially, for small and medium scale farmers as well as farmers in disaster-prone areas.
9. Agro-water tourism: Assess feasibility of this component.

10. Outputs and reporting

1. An **Inception Note** will be provided to the designated task manager within one week of commencing the task.
2. The principal output will be a **Program Design Document**, in draft and final forms (see section 5). The Program Design Document should follow an acceptable format advised by the TWGAW and be summarized in a logical framework. It will present a set of complementary activities, to be carried out by MAFF and MOWRAM during the NSDP-III planning period, that together will enable the ministries to effectively achieve their targets under NSDP.
3. The principal output will be supported by (1) an **oral presentation to a seminar** for the TWGAW and (2) a covering **Aide Memoire** to the designated task manager that reviews the design process and presents any findings or observations that are not included in the Program Design Document.

11. Activities

The Program Design Team will:

1. Familiarise itself with reports/working papers prepared by the B1 Strategy Team, MAFF and MOWRAM Strategic Development Plans, and other relevant documents.
2. Submit an Inception Note that *inter alia* presents a work plan, a proposed format for the Program Design Document, and the Team's understanding of and proposed approach to the task.
3. Consult as necessary with key officials of MAFF, MOWRAM, CARD, MIME, and MoC, members of the TWGAW, and other stakeholders (including MAFF and MOWRAM technical personnel) as deemed appropriate.

4. Advise the task manager, at least weekly and by email, on progress and any matters that might hinder successful completion of the task.
5. Submit a draft Program Design Document, carry out any revisions needed to respond to the task manager's and stakeholders' comments, and submit a final Program Design Document.
6. Liaise with other Program Design Teams contracted by TWGAW.
7. Assist the B1 Strategy Team of TWGAW to compile this and other Program Designs into a Strategic Framework for A&WR (national Specialist only).
8. Advise the task manager, by means of an Aide Memoire, of any findings or observations that are not included in the Design Document, and review the design process.
9. Present an oral summary of the proposed Program Design to a seminar for TWGAW members. The presentation should be supported by a Powerpoint presentation and handout.

12. Timing

The task is envisaged to be carried out over a two month period:

1. Task start-up: start of week 1
2. Inception report due: start of week 2
3. Draft Program Design Document due: end of week 5
4. Task manager's comments provided to Team by: end of week 7
5. Final Program Design Document and Aide Memoire due: middle of week 9
6. Presentation to TWGAW seminar: end of week 9

13. Composition of Team

The Design Team will comprise one international Agri-business Specialist and one national Agriculture Specialist. The input of the national Specialist will be a full nine weeks. The input of the international Specialist, as per Section 6 above, will be during the first five weeks.

14. Budget⁷

Item	Cost (US\$)
International specialist, fee, 1 month at \$12,000	12,000
National specialist, 63 days at \$50	3,150
International specialist, d.s.a., 30 days at \$80	2,400
International specialist, travel (one return journey at \$1,500)	1,500
Local expenses: stationery, printing, meeting/seminar expenses, translation	5,000
TOTAL	24,050

⁷ The team resources and budget is expected to need considerable expansion.

Terms of Reference for Program Design Team

Water resources, irrigation management and land program

1 Background

The background to this Program Design task is provided by the *Strategy Formulation II* report (Annex 1). In essence, the Strategy will assist MAFF and MOWRAM to meet the responsibilities and achieve the targets set for them by the National Strategic Development Plan (NSDP) for 2006-2010, and by Cambodia Millenium Development Goals. Additional information is provided in the working document *Strategic Profiles for development of a medium term Strategy for Agriculture and Water Sectors* (available from the TWGAW Secretariat).

The Key Goals of the Strategy will be achieved by work in five program areas. One of these is the “Water resources, irrigation management, and land program”.

2 Objective

The principal objective of the Program Design Team is

To prepare a Program Design, acceptable to the Co-Chairs of the TWGAW, for the “Water resources, irrigation management and land program”.

The target date for completion of the objective is 30 September 2007.

3. Scope

The *Strategy Formulation II* draft report (Annex 1, Section 6.4) presents the scope of the Program. It is based on the Strategic Development Plans prepared by MAFF and MOWRAM as inputs to the NSDP planning process. The objectives, outputs and activities already specified in those Plans will be revised, consolidated, and/or added to as necessary. Further work on the Program is needed, particularly by providing more detailed “indicative actions” and estimates of the resources required, to ensure that it provides a sound and comprehensive basis for resource allocation by ministry officials, the Royal Government, and External Development Partners.

In addition to the above, the following aspects of the Program should be considered:

1. Joint mobilization of water and cultivable land resources following an Integrated River Basin Management approach.
2. development of criteria to select priority river basins, taking account *inter alia* of food-insecure areas, disaster-prone areas, and commercial opportunities.
3. technologies for management and efficient use of water for agriculture under rain-fed, supplementary irrigated, and fully irrigated, at scales from single household to large scale.

4. Outputs and reporting

1. An **Inception Note** will be provided to the designated task manager within one week of commencing the task.

2. The principal output will be a **Program Design Document**, in draft and final forms (see section 5). The Program Design Document should follow an acceptable format advised by the TWGAW and be summarized in a logical framework. It will present a set of complementary activities, to be carried out by MAFF and MOWRAM during the NSDP-III planning period, that together will enable the ministries to effectively achieve their targets under NSDP.
3. The principal output will be supported by (1) an **oral presentation to a seminar** for the TWGAW and (2) a covering **Aide Memoire** to the designated task manager that reviews the design process and presents any findings or observations that are not included in the Program Design Document.

5. Activities

The Program Design Team will:

1. Familiarise itself with reports/working papers prepared by the B1 Strategy Team, MAFF and MOWRAM Strategic Development Plans, and other relevant documents.
2. Submit an Inception Note that *inter alia* presents a work plan, a proposed format for the Program Design Document, and the Team's understanding of and proposed approach to the task.
3. Consult as necessary with key officials of MAFF, MOWRAM, CARD, MIME, MRD, and MoE, members of the TWGAW, and other stakeholders (including MAFF and MOWRAM technical personnel) as deemed appropriate.
4. Advise the task manager, at least weekly and by email, on progress and any matters that might hinder successful completion of the task.
5. Submit a draft Program Design Document, carry out any revisions needed to respond to the task manager's and stakeholders' comments, and submit a final Program Design Document.
6. Liaise with other Program Design Teams contracted by TWGAW.
7. Assist the B1 Strategy Team of TWGAW to compile this and other Program Designs into a Strategic Framework for A&WR (national Specialist only).
8. Advise the task manager, by means of an Aide Memoire, of any findings or observations that are not included in the Design Document, and review the design process.
9. Present an oral summary of the proposed Program Design to a seminar for TWGAW members. The presentation should be supported by a Powerpoint presentation and handout.

6. Timing

The task is envisaged to be carried out over a two month period:

1. Task start-up: start of week 1
2. Inception report due: start of week 2
3. Draft Program Design Document due: end of week 5
4. Task manager's comments provided to Team by: end of week 7
5. Final Program Design Document and Aide Memoire due: middle of week 9
6. Presentation to TWGAW seminar: end of week 9

7. Composition of Team

The Design Team will comprise one international Institutional/Management Specialist and one national Institutional/Management Specialist. The input of the national Specialist will be

a full nine weeks. The input of the international Specialist, as per Section 6 above, will be during the first five weeks.

8. Budget⁸

Item	Cost (US\$)
International Specialist, fee, 1 month at \$12,000	12,000
National Specialist, 63 days at \$50	3,150
International Specialist, d.s.a., 30 days at \$80	2,400
International Specialist, travel (one return journey at \$1,500)	1,500
Local expenses: stationery, printing, meeting/seminar expenses, translation	5,000
TOTAL	24,050

⁸ The team resources and budget is expected to need considerable expansion.

Terms of Reference for Program Design Team

Agricultural and water resources research, education and extension program

1 Background

The background to this Program Design task is provided by the *Strategy Formulation II* report (Annex 1). In essence, the Strategy will assist MAFF and MOWRAM to meet the responsibilities and achieve the targets set for them by the National Strategic Development Plan (NSDP) for 2006-2010, and by Cambodia Millennium Development Goals. Additional information is provided in the working document *Strategic Profiles for development of a medium term Strategy for Agriculture and Water Sectors* (available from the TWGAW Secretariat).

The Key Goals of the Strategy will be achieved by work in five program areas. One of these is the “Agricultural and water resources research, education and extension program”.

2. Objective

The principal objective of the Program Design Team is

To prepare a Program Design, acceptable to the Co-Chairs of the TWGAW, for the “Agricultural and water resources research, education and extension program”.

The target date for completion of the objective is 30 September 2007.

3. Scope

The *Strategy Formulation II* draft report (Annex 1, Section 6.5) presents the scope of the Program. It is based on the Strategic Development Plans prepared by MAFF and MOWRAM as inputs to the NSDP planning process. The objectives, outputs and activities already specified in those Plans will be revised, consolidated, and/or added to as necessary. Further work on the Program is needed, particularly by providing more detailed “indicative actions” and estimates of the resources required, to ensure that it provides a sound and comprehensive basis for resource allocation by ministry officials, the Royal Government, and External Development Partners.

4. Outputs and reporting

1. An **Inception Note** will be provided to the designated task manager within one week of commencing the task.
2. The principal output will be a **Program Design Document**, in draft and final forms (see section 5). The Program Design Document should follow an acceptable format advised by the TWGAW and be summarized in a logical framework. It will present a set of complementary activities, to be carried out by MAFF and MOWRAM during the NSDP-III planning period, that together will enable the ministries to effectively achieve their targets under NSDP.
3. The principal output will be supported by (1) an **oral presentation to a seminar** for the TWGAW and (2) a covering **Aide Memoire** to the designated task manager that reviews the design process and presents any findings or observations that are not included in the Program Design Document.

5. Activities

The Program Design Team will:

1. Familiarise itself with reports/working papers prepared by the B1 Strategy Team, MAFF and MOWRAM Strategic Development Plans, and other relevant documents.
2. Submit an Inception Note that *inter alia* presents a work plan, a proposed format for the Program Design Document, and the Team's understanding of and proposed approach to the task.
3. Consult as necessary with key officials of MAFF, MOWRAM, and CARD, educational institutions, members of the TWGAW, and other stakeholders (including MAFF and MOWRAM technical personnel) as deemed appropriate.
4. Advise the task manager, at least weekly and by email, on progress and any matters that might hinder successful completion of the task.
5. Submit a draft Program Design Document, carry out any revisions needed to respond to the task manager's and stakeholders' comments, and submit a final Program Design Document.
6. Liaise with other Program Design Teams contracted by TWGAW.
7. Assist the B1 Strategy Team of TWGAW to compile this and other Program Designs into a Strategic Framework for A&WR (national Specialist only).
8. Advise the task manager, by means of an Aide Memoire, of any findings or observations that are not included in the Design Document, and review the design process.
9. Present an oral summary of the proposed Program Design to a seminar for TWGAW members. The presentation should be supported by a Powerpoint presentation and handout.

6. Timing

The task is envisaged to be carried out over a two month period:

1. Document review and planning- Week 1 1
2. Program related review and analysis: Inception report and summary finding week 2-4
3. Draft Program Design Synthesis and outline 5-7
4. Final Program Design outline and debriefing Note/Aide memoire week 8-9
5. Final Program Design Document and Aide Memoireweek 10-11
6. Presentation to TWGAW seminar: end of week 12-14

7. Composition of Team

The Design Team will comprise one international Agri-business Specialist and one national Agriculture Specialist. The input of the national Specialist will be a full nine weeks. The input of the international Specialist, as per Section 6 above, will be during the first five weeks.

8. Budget⁹

Item	Cost (US\$)
International specialist, fee, 1 month at \$12,000	12,000
National specialist, 63 days at \$50	3,150
International specialist, d.s.a., 30 days at \$80	2,400
International specialist, travel (one return journey at \$1,500)	1,500
Local expenses: stationery, printing, meeting/seminar expenses, translation	5,000
TOTAL	24,050

⁹ The team resources and budget is expected to need considerable expansion.

Annex 4. Strategy Concept Note for development of a medium term Strategy for Agriculture and Water Sector (2006-2010)

This Concept Note was endorsed by the TWGAW, June 2006, for elaboration into the A&W strategy. It is therefore included to show the foundation for the now formulated strategy.

ABBREVIATIONS (to be updated)

AFD	Agence Francaise de Developpement
ASEAN	Association of South-East Asian Nations
A&W	Agriculture and Water
A&WR	Agriculture and Water Management
AusAID	Australian Agency for International Development
B1	Task Force under TWGAW responsible for sector strategy formulation
CARDI	Cambodian Agricultural Research and Development Institute
CARD	Council for Agricultural and Rural Development
CBO	Community-Based Organisation
C1/C2	Task Forces (TF) under TWGAW
CMDG	Cambodian Millennium Development Goal
CNMC	Cambodian National Mekong Committee
EDP	External Development Partner
DAALI	Department of Agronomy & Agricultural Land Improvement
DAE	Department of Agricultural Extension
DOP	Department of Planning
DWRMAC	Department of Water Resources Management and Conservation
EDP	External Development Partner
FA	Farmer Associations
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FFS	Farmer Field School
FWUC	Farmer Water User Community
GAP /GAPs	Governance Action Plan / Good Agricultural Practices
IPM	Integrated Pest Management
IWRD	Integrated Water Resource Development
JICA	Japanese International Cooperation Agency
MAFF	Ministry of Agriculture, Forestry and Fisheries
MFI	Micro-Finance Institution
MTEF	Medium Term Expenditure Framework
MRC	Mekong River Commission
MRD	Ministry of Rural Development
MOWRAM	Ministry of Water Resources And Meteorology
NARS	National Agricultural Research System
NGO	Non Government Organisation
NSDP	National Strategic Development Plan
NWRP	National Water Resources Policy

PICD	Planning and International Cooperation Department
RGC	Royal Government of Cambodia
O&M	Operation and Maintenance
PIMD	Participatory Irrigation Management and Development
RBP	River Basin Planning or Plans
SA&WR	Strategy for Agriculture and Water Management
SDP-WS	Strategic Development Plan of Water Sector
SWOT	Strengths, Weaknesses, Opportunities, and Threats
SME	Small and Micro Enterprise
TWGAW	Technical Working Group for Agriculture and Water
TA	Technical Assistance
TOR	Terms of Reference
ToT / FTOT	Training of Trainers, Farmer Training of Trainers
WFP	World Food Programme
WTO	World Trade Organisation

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1. The A&W core Strategy

The **Core Strategy** is based on the current agriculture and water strategic frameworks for MAFF and MOWRAM, respectively (developed as an input to the NSDP 2006-2010), on the A&W strategic work to date, and on the results of stakeholder workshop on 19 May 2006¹⁰.

The Strategic Options Report, May 2006, mention some of the ways in which these themes can be applied, but does not actually recommend the preferred strategy, nor did the Stakeholder Workshop of 19 May recommend a particular strategy. The Strategy Team has, therefore, re-visited the basis for the strategy formulation, and has performed a sharper synthesis of the basic SWOT analysis - (as updated by Stakeholder Workshop findings of 19 May 2006).

The result of this is the following *core* strategic themes for Agriculture and Water 2006-10:

1. Development of Institutional Capacity and Reform including improvement of cross-ministerial and donor coordination.
2. Development of land and water utilization plans based on the river basin approach, IWRM and market possibilities
3. Mobilization of Water Resources and Management as per RB plans
4. Improving Productivity and Technology (including the productivity of land, water, labour and capital though application of relevant technology and information)
5. Market Development (including its enabling environment), and the development of Investment Capacity and Interest for agri-business enterprises.

The market development and increasing productivity themes are especially important in this context, where the ultimate goal is poverty reduction and economic growth. The synthesis of the mentioned five themes into a *core A&W Sector Strategy* follows below (Section 3). The overall purpose is to define a '**Roadmap**' for reaching the best possible outcome.

It should also be mentioned that 'strategy' is never finished, but will continue to require adjustments in order to accommodate new challenges and opportunities. Appropriate review and monitoring mechanisms for the strategy is therefore part and parcel of its framework, and will be developed in that context. This includes identification of further information and data needs.

2. THE STRATEGIC THEMES

2.1. Institutional Development

This includes enhanced institutional capacity for reforms and improving coordination among ministries, departments and donor agencies alike. Institutionalisation of good governance measures through reforming the (agriculture and water) sector; establishing necessary

¹⁰ Main conclusions of the workshop were: (i) don't make it too complex and (ii) don't be too ambitious and look to 'lessons learnt' from other programs.

institutional and legal frameworks; improving implementation and enforcement of laws and regulations; and improving the capacity in research and development to create the enabling environment for agriculture and water sector development. Land reform, adherence to free market economy principles and integration into the world markets can provide added value for the agriculture and water sector developments.

2.2. Land and Water Utilization Planning

This strategic theme focus on land and water capability classification based on river basin planning and the integrated water management approach.

Land use planning is to **establish an efficient land use system** that will facilitate every farmer to use his/her own land efficiently and that will minimize the amount of unused land nationwide. Based on the efficient land use system, suitable crop zoning maps will be produced to reflect appropriate land utilization linked to **water availability**, soil fertility, social and other natural indicators and not least market possibilities for the farm produce.

Water use planning is to **establish efficient water use systems** (including appropriate water management) in the near future through river-basin planning and zoning into areas for rehabilitating and developing full-scale irrigation facilities (including applying appropriate construction design), areas for supplementary irrigation, other areas for water harvesting or other water management measures in the mainly rain-fed zones.. This system should be closely inter-linked with the aforementioned land use system.

2.3. Mobilisation of Water Resources and Management

Water resources mobilization and management is a key for improving agricultural productivity and diversification. The interventions and programme contexts can mobilize water by development and rehabilitation of irrigation systems and strengthening and empowerment of local community in water management (FWUC), implementing the integrated water resources management (IWRM) approach and classifying of land capability & suitability and water availability classification.

Water resources development addresses the most crucial element of on-farm production under the Cambodian climatic regime. This is often the most *critical success factor* for farmers in order to graduate from subsistence to market-oriented production in that irrigation and/or other kinds of water control greatly reduces the risk of crop failure, and thereby make it feasible for vulnerable and resource-poor smallholder farmers with around one hectare of land to engage in the more risky high-value productions. There is thus a crucial dependence between the concept of increasing value-addition and enabling that to happen via investments in water resource development.

Managing flood and drought: Ability to manage flood and drought will reduce risks in improving productivity and diversification. Some interventions in this area will effectively deal with disaster preparedness by establishing and implementing agriculture-centered disaster preparedness measures (which may make available agricultural inputs, pumps, seeds, vaccines to respond to disaster events); forecasting and disseminating emergency information through an established warning system, radio, TV, website and other mass media; etc.

The strategic theme thus directly addresses the currently most critical element in on-farm production in Cambodia: Other inputs supplies (seeds, fertilizer, chemicals, etc) may be supplied by demand pulls – but that of water management and control are different. Currently only about 7-8% of arable lands are fully irrigable (compared to 30-45% in Thailand and Vietnam), while some additional areas (perhaps another 10% of arable lands) have access to some forms of supplementary irrigation. The rest (around 80%) depends on rain-fed conditions. This makes for a boom and bust type of economy (e.g. 13% national GDP growth in 2005 mainly due to good rains and (relative) bumper harvests).

Better water management for both rain-fed and non-rainfed areas will help stabilise the economy from the macro-perspective and at the same time help to achieve the RGC's crop diversification policy by reducing the farmer's risks in going for higher-value crops as mentioned.

2.4 Increasing Agricultural Productivity

The necessity of increasing agricultural productivity is that it is the **basis for sector growth, increased farmer income and poverty reduction**. Without increased productivity there are only limited prospects for realising the national policy objectives. It is expected that the demand pull of markets, in combination with improved water management, can be the driving force in motivating productivity increase. Given the small-holder nature of Cambodian agriculture, however, it will be necessary to also focus on the supply side of productivity increase, which generally happens via development and adoption of new technologies, skills and management measures. Such investments are often of a public good nature in relation to agriculture and the public sector would therefore be expected to take on a large role through efforts and investments in agricultural research, extension and education. There is an expressed need to now focus especially extension development at the field level; e.g. in the context of Commune developments.

2.5. Market Development

The harnessing of the market possibilities, which are opening up by virtue of Cambodia's location in the fastest growing region of the world, gives a perhaps unique historic opportunity for a substantial demand pull effect and value-addition to the products of Cambodian agriculture. The fast growing economies of the region, the on-going mass movement of populations to urban areas (which is also starting to happen in Cambodia) can be the engines of transformation for Cambodian agriculture. This imply possibilities for export as well as for meeting the demands of the national Cambodian markets (e.g. via import substitution, including avoiding increased future imports).

In order to meet these demands, products of the right quality and price must be produced and promoted, marketing channels established and organised, legal and quality assurance frameworks must be established and enforced, inputs supplies must be organised and risks managed etc. All these ingredients, and more, are the substance of the strategic market development theme, which in a programmatic context may be appropriately split into a national enabling environment part and an agri-business support part.

These market development can leverage increased investments in agriculture as profitability of such investments improve via improved business climate and through addition of value through processing, higher quality, more valuable crops, and especially through increased investments in commercial water management and irrigation (see 2.3 above). The market demand forces will thereby exert their direct influence on productivity constraints and pull productivity improvements though to reality in a cost-efficient way.

3. STRATEGY FORMULATION

The purpose of strategy is simple: It is to devise **an overall game plan or 'roadmap'**, which can guide the stakeholders in reaching the defined objectives. The strategy - by being the overall 'roadmap' - thus has consequences for the shape and content of all outputs, activities, action plans and resource allocations in this context.

A viable strategy for any entity must build on the strengths, overcome the weaknesses, take advantage of relevant opportunities and avoid or counter the relevant threats. In these respects follows below a synthesis of the strategy analysis (ref. “Strategic Profiles” and “Strategy Options”) into a balanced overall sector strategy. The analysis points to the following **Strategy** for the Agriculture and Water Sector:

1. First secure **the resources, commitments and motivation** in relation to all important stakeholders (farmers, agribusiness, NGOs, agencies, donors, etc.). This is the ‘entry level’ strategy part and the foundation for what is to follow.
2. Secondly, consider direct interventions in general or in programme contexts, which can effectively address **Enabling environment** issues like:
 - Facilitating Market entry
 - Leveling the playing field for private sector participants
 - Promoting new areas and mechanisms for research & development
 - Getting unused land back into production
 - Improving credit supply
 - Improving monitoring and enforcement of laws and regulations
3. **Cost-efficient Investments in Water Management** and irrigation development holds the *first strategic Master Key* to increasing agricultural productivity, in turn leading to poverty reduction & increased wealth as explained above (2.3).
4. **Enhancing Institutional Capacity for Reform** is a *second strategic Master Key* to increasing agricultural productivity, poverty reduction and increased wealth. **Improved Cross-Sectoral Coordination** will follow in the context of enhancing institutional capacity.
5. **A more Commercialised Agriculture** using the powerful forces of markets holds the third *strategic Master Key* to increasing agricultural productivity, poverty reduction and increased wealth.

6. Finally arriving at direct interventions towards **increasing agricultural productivity**. *Effective* deployment and serious impact of this last stage of the strategy is really only seriously possible after all the preceding five strategic areas have been addressed to some extent, but this does not imply that gearing up of activities in all areas should not take place more or less simultaneously. It instead implies that resource allocations among the strategic themes should shift over time.

The thus defined application of these strategic themes is proposed as *the A&W sector strategy 2006-10*. The entire Strategy is illustrated in **Figure 1**.

3.1 A Three-Stage Strategy

The preceding thus points to a three-stage implementation strategy as follows:

Stage I: Mobilizing the Resource Bases

The 'resources' implied are of all types (financial, political, administrative, management, good-will etc) and from all stakeholders (farmers, agencies, donors, private sector, NGOs etc). The strategic purpose is to mobilize the necessary and sufficient resources to make the rest of the strategy successful. This crucially requires that the processes towards these outcomes become creditable, believable, and authentic. First and foremost that ownership and commitment from RGC to these processes are declared. The rest can then follow, as these partnership resources mobilizations are built into the designs of the proposed National Development Programs (Section 5), which will implement the strategy. The mobilization of these investment resources should be guided by cost-efficiency considerations in economic as well as socio-economic terms.

Stage II: Enabling Institutional Reforms and Water Management Investments

The Second Strategic Stage is the difficult area of the Enabling Environment at large, in particular the sector specific Institutional Reform and Coordination areas as well as the enabling water resource mobilization area. The foundations for the general Enabling Environment is beyond the capacity of a line ministry or sector programme, but even then the sector also has roles to play in the context of the more general RGC reform agenda and the NSDP.

It is probably correct to state that these institutional constraints at present largely stand in the way of reaching the strategic stage III of increased productivity and commercialization. That is the basic reason of the need for enabling reforms. The implication is, therefore, also that if this institutional area cannot be reformed in this manner, there may be only be small gains from Stage III.

Stage III: Reaching the Objectives via Market and Productivity Developments

Stage III is where the combined fruits of enhanced partnership resources and improved Institutions can apply the combination of technology and management in the two themes of Increasing Agricultural Productivity and Market Development.

While all stages may commence more or less simultaneously, the three stages indicate a shifting strategic focus and weight of resource allocations through the three stages. Below follows an outline of programs to implement the strategy in stage II and III only – programs and activities for stage I will be addressed during the design phase for the A&W strategic implementation framework (in second half of 2006)

4. Programme Development Framework

Figure 2 finally illustrates how this combined sector strategy for agriculture and water can be rolled out through a relatively simple programmatic structure consisting of just four core National Development Programs or program areas¹¹ (stage II and III only). The main programmes for agriculture and water resources strategy 2007-2011 are in the following areas:

1. Policy, institutional and management support program for MAFF and MOWRAM
2. Agri-business (value-chain) support program including input supply (credits, seeds, machinery, fertilizers...), farm production (crops, plantations, livestock and aquaculture), processing and marketing (post-harvest, processing and marketing), and market development (food safety...).
3. Irrigation development, water resources management and land and water use planning program, and
4. Agriculture and water research, education and extension program (in preparation for entering the value chain)

These core programs or program areas should be preceded by efforts in resource mobilization and generally enabling activities; where this is not part of the programs.

4. 1. Policy, Institutional and Management Support Program for MAFF and MOWRAM

This program focuses on institutional capacity and legislative improvement of MAFF and MOWRAM. MAFF and MOWRAM have a large number of staff, but they are not able to mobilize their staff effectively. Management remains weak, many staff has limited skills and experience, and low salaries are a major disincentive to staff. Coordination with and influence over other agencies and stakeholders are limited. As a result, the ministries have difficulty in achieving their sectoral objectives.

Policy and regulatory frameworks related to agricultural, water and natural resources management (such as land, forests, fisheries, protected areas, water, environment, etc.) require strengthening. Weak extension and research capacity in agriculture and water management constrain technical support to farmers, for example, in terms of crop production methods suited to water availability in a particular area. As a consequence, farmers' knowledge and skills remain low, and they are unable to benefit from technological advancement. Institutional weaknesses also constrain the distribution and marketing of agricultural products, for example, in terms of unfair trade and unsafe food.

MAFF and MOWRAM institutional and legislative frameworks as well as staff performance can be improved and strengthened through following programme's components:

¹¹ There is some flexibility in designing these four areas into a single program for each, or several programs for each or some areas.

1. MAFF Institutional Capacity Improvement, (including Priority Mission Groups);
2. MOWRAM Institutional Capacity Improvement, (including Priority Mission Groups);
3. Agricultural and Water Resources Information/Data Systems Improvement;
4. Agricultural and Water Resources Legislation Development and Enforcement; and
5. Gender Mainstreaming within MAFF and MOWRAM.
6. Financial Management Systems (including Medium Term Expenditure Frameworks)
7. Monitoring and Evaluation Framework

Editorial Note: Need to consider more focus on Human Resource Development and decentralization

4.2 Irrigation Development, Land and Water Resources Management Program

Land and water are two fundamental natural resources for agricultural development.

Editorial Note: The section needs to describe more on water & land utilisation planning as well as on Water management (too much irrigation text). Also need to focus on cost-efficient investments in economic as well as socio-economic terms.

Irrigated water is withdrawn from a water source (river, stream, lake or aquifer) and led to the field through an appropriated conveyance infrastructure. Irrigation provides a powerful management tool against the vagaries of rainfall and makes it economically attractive to grow high yielding varieties and to apply adequate plant nutrients as well as pest control and other inputs, thus giving room for boost in yields. Therefore investment of irrigation should be efficiency, equity and sustainability in term of fiscal, institutional and environmental dimensions. For these context the irrigation sector should be taken into account both the needs and of users and constraints: (i) improving the effectiveness of holistic planning for irrigation, (ii) making irrigation more productive for users, i.e. increasing economic returns per unit of water used, (iii) improving the access of women and poor families to irrigation, (iv) reducing water requirement per unit outputs and reducing total costs for provision of irrigation, (v) improving the environmental sustainability of irrigation and (vi) improving the institutional sustainability of irrigation systems.

The important concern of the irrigation programme will be to increase the return per unit of water. The approach to irrigation development, while focusing on private sector-led development, will put emphasis on increasing efficiency and equity through such measures as conjunctive use of all forms of surface and ground water, strengthening crop diversification to promote efficient water utilization, rehabilitation of derelict irrigation schemes, public investments in lagging regions using appropriate technologies, and adoption of successful management approaches to irrigation development. The policies will aim to develop efficient irrigation water markets and raise the economic returns to minor irrigation through effective provision of support services (e.g. technical and aquifer information, mechanical training, electrification of tube wells, effective O&M to increase the command area per pumping machine, and linkage with agricultural extension and marketing information). The proto-type structure of the programme will comprise following component:

1. River-Basin focused Water and Land Utilization Planning including soil mapping
2. Agro-Ecosystems-Analysis-Based Irrigation System Development (based on 1)
3. Irrigation System Rehabilitation and Development (based on 1)
4. Participatory Irrigation Systems Management and Development (incl. water use efficiency);

5. Participatory On-farm Water and Agricultural Management Training and Extension; and
6. Flood and Drought Preparedness Program (based on 1)

Two strategic goals of land reform are to: (i) ensure land tenure security and develop efficient and transparent land market, and (ii) promote pro-poor land access.

4.3 Agri-business (Value Chain) Support Program:

This program focus on input supply, improving farm production, processing, post-harvest development and consumers markets, support to food security and incomes of farmers and market development.

The program can consist of the following components, and aim to improve value chain or agri-business development including:

1. National Programme for Household Food Security and Poverty Reduction (Value chain at household level).
2. Input supply programme (including credits schemes, seeds, fertilizers, agriculture machinery...etc) - aimed at agribusiness support in these areas.
3. Farm production program (including crops, small rubber plantation, livestock and aquaculture programme) - aimed at agribusiness support in these areas.
4. Processing and Marketing (including agro-processing, post-harvest and agri-business programme) - aimed at agribusiness support in these areas.
5. Consumer markets development (including Food Safety, quality control and assurance, information...).
6. Farmer organization Development (also part of extension)
7. Rural Credit Programme for Agriculture and Water Development.

The essence of the Agri-business Program is support to private sector business enterprises¹² both generally (enabling environment, regulatory, market information, market infrastructure, possibly small rural roads, etc) and specifically towards value-adding agro-business investments; e.g. in supporting farmer organizations, private sector investments in irrigation schemes, establishments of contract farming arrangements, training, technical assistance etc. Since this is perceived as a public sector program, the support will target public or semi-public goods parts of such enterprise investments only. The private goods part (e.g. investments in processing and transport equipment, warehouses, factories, etc) will be supplied by the private sector either directly or via commercial banking finance. It is a definite principle to avoid distorting markets, but also to address market failures. Detailed guidelines for such investments are therefore required and can be developed during the program design or implementation phases.

The National Program for Household Food Security and Poverty Reduction is a key to the implementation of the NSDP, specifically its aim “*at poverty reduction and removal of disparities and reduction in gaps between regions as well as between the haves and have-nots*”. It will improve food security for some 2 million poorest Cambodians, thus significantly contribute towards fulfillment of CMDG1, and its target: *'Halve, between 1993 and 2015, the proportion of people whose consumption is less than the national poverty line'*.

Editorial Note: Too much on food security – the other components also needs some description. Need to mention the Prakas on farmer organizations. Justification for inclusion of rural credit needs to be developed in consultation with the Financial Sector Reform institutions.

¹² These private sector enterprises can be farmer organisations, NGOs or other private sector enterprises or combinations in consortiums.

4.4. Agricultural and Water Research and Extension Program

This programme focuses on research and extension, technology and information development and education/training in agriculture and water resources sectors.

Agricultural and Water Resources Research Program will cover two major thrust areas: (a) developing low-cost technologies for the resource-poor farmers; and (b) strengthening modern applied research through creating necessary research management and infrastructure. The policies will focus on creating social, economic and marketing linkages; strengthening the national agricultural research system; and developing more effective mechanisms for field-level technology transfer through the private sector, NGOs as well as village and grassroots organizations.

Along with the traditional concerns of crop variety development and better irrigation and soil management, the scope of the research programme will be extended to cover new and emerging issues such as identifying better options for creating market linkages; reducing post-harvest losses; promoting crop diversification and integrated farming systems; enhancing the productive role of women; preserving bio-diversity; promoting supplementary irrigation and better techniques of on-farm water management; reducing the yield gaps; promoting effective use of blended fertilizer; establishing closer links between research and extension; identifying efficient options for farm mechanization; and suggesting measures to address WTO related issues. *The Research Master Plan 2005 will be an important guiding document.* The programme structure would be defined keeping in view the inter-linkages of various components that appear hereunder:

- Crops and Water research (including Irrigation, Land/Soil Fertility);
- Rubber Plantation Research;
- Livestock and Animal Husbandry Research;
- River-Basin Study;
- Agro-industry Development Potential Research;
- Pest Control and Management Research;
- Agricultural Engineering and Post-Harvest Technology Research.
- Farm Management and Integrated Farming Systems Research

Editorial Note: need to also focus on overall NARS institutional structure and management; including adequate salary and staff structures for sustainability.

Agricultural and Water Resources Extension:

MAFF and MOWRAM have extension workers and field personnel to work with farmers, but are unable to effectively mobilize them because of a lack of resources such as fuel for vehicles, and incentives. They lack the facilities (e.g. training centers and demonstration farms) and networks to disseminate technologies, and the linkages between research, development and extension remain weak. Hence, extension services are weak overall, and farmers have limited awareness of and access to agricultural and water management technologies, and poor skills in agricultural production and water management.

The prime concern of the extension programme will be to effectively instill strong links among all stakeholders including the farmers, NGOs and the private sector. The concept of the Farmer Field School (FFS), as the experience of the IPM programme suggests, may emerge as a successful extension mechanism in Cambodia. Under the national extension programme, the Farmer Field School would be taken as one of the core extension and farmer education platforms in agriculture. While such schools are presently used mainly as the

vehicle for the IPM message, the scope can easily be expanded to cover Integrated Crop Management and further to coordinated extension incorporating livestock, fisheries, forestry, and other areas of rural development. The programme structure may comprise following components:

- Agricultural Extension Policy and Regulation Development;
- Farming Systems Development;
- Participatory Training and Extension (ToT, FTOT, FFSs, Field Day and Field Demonstration, Participatory On-Farm Water Management-PIMD concept);
- Participatory On-Farm Water Management (PIMD concept);
- Extension Training Centre Development for Agriculture and Water
- Media Development; and
- Agro-Ecosystems Analysis (including for irrigation and social land concession)
- Development of Farmer Organisations (FAs, FWUCs..)

Editorial Note: Extension must now focus on the grass-roots level. Need to refer to the National Policy on Extension of 1999, and also to focus on the commitment, motivation and accountability of field level staff

Agricultural and Water Resources Education Programme:

The education programme will aim to develop efficient manpower in agricultural disciplines in order to ensure sustained increases in agricultural production. The programme will expand the scope of agricultural education; improve and strengthen the administrative and academic management of agricultural education institutions; and strengthen their technical standards and research capacities. The overall availability of human resources in agriculture will be increased through establishing continuing education programme and strengthening training programme for agricultural officials and upgrading practical knowledge of extension field workers through regular in-service training. The Farmer Field Schools would also form important vehicles of agricultural education and skill transfer. The programme may be composed of following components:

- MAFF and MOWRAM Human Resources Development, including Agricultural and Water Resources Graduate Degrees.
- Agriculture and Water Management Training Programme; and
- Farmer Training Programme in Agriculture and Water Management (based on Farmer Field School model).

Figure 1. Strategy Option of Agri&Water

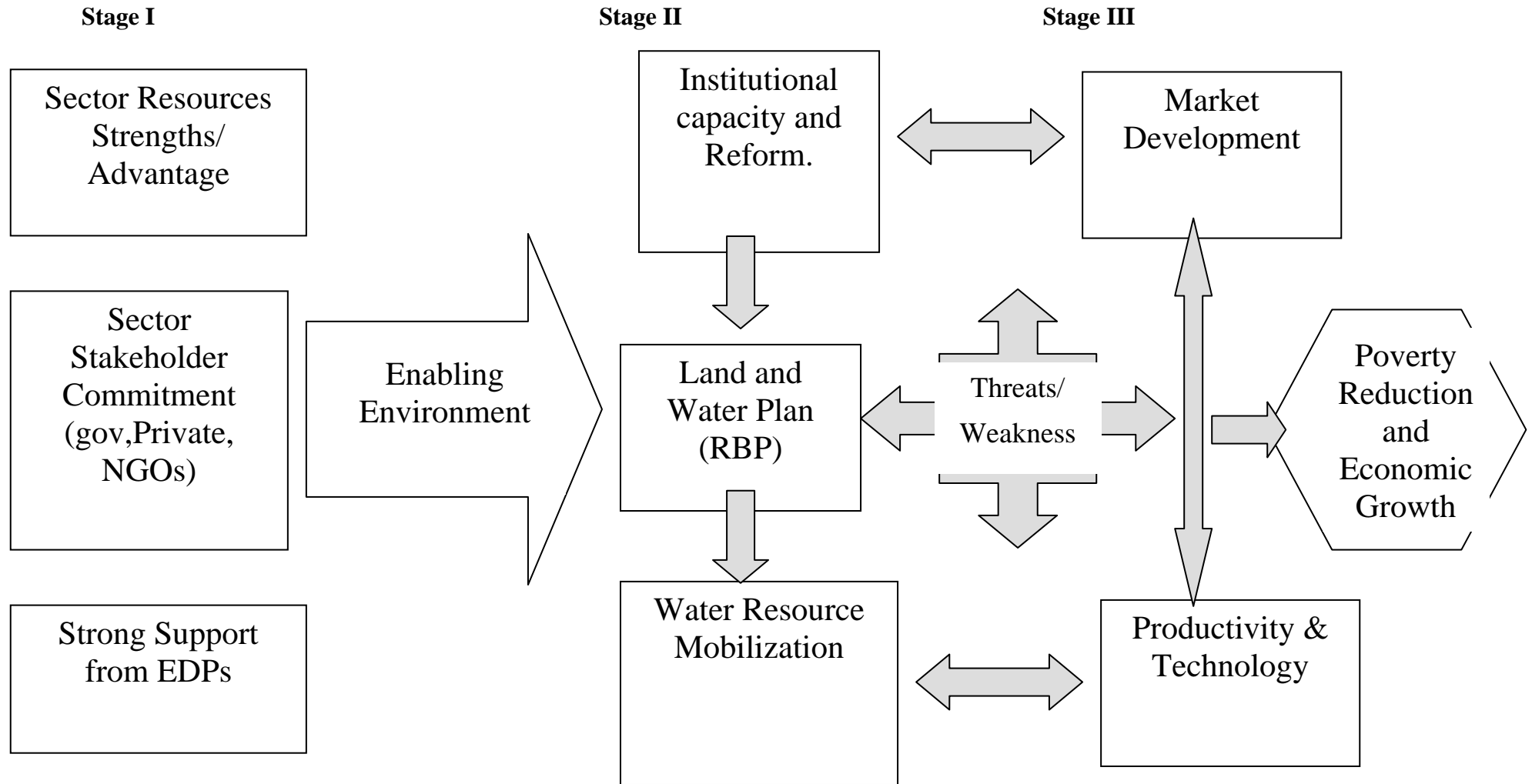
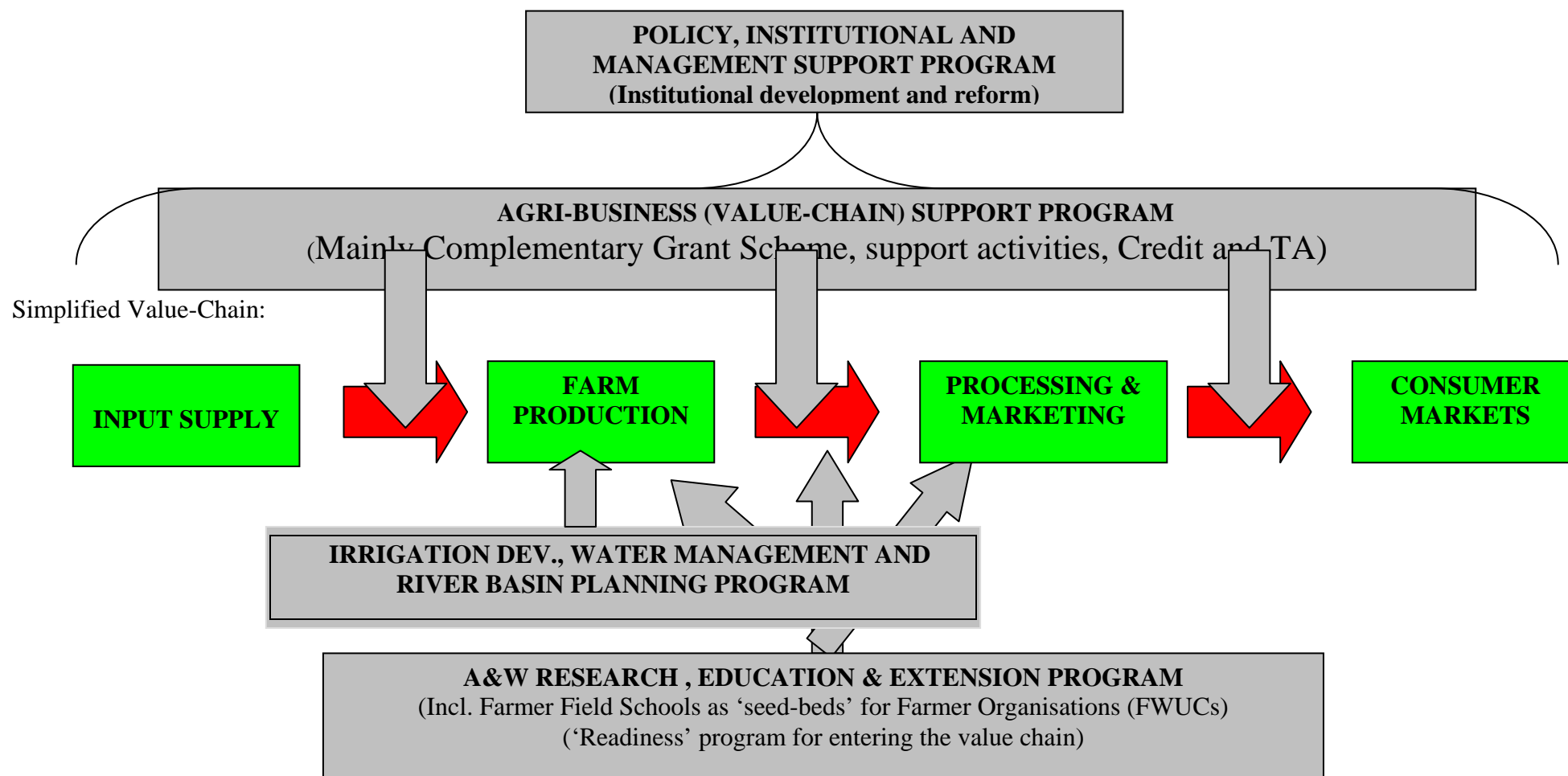


FIGURE 2: PROGRAM FRAMEWORK FOR MARKET DEVELOPMENT AND INCREASING PRODUCTIVITY



Annex 5: TOR for Strategy Formulation

**Kingdom of Cambodia
Nation Religion King**

Technical Working Group
For
Agriculture and Water

TERMS OF REFERENCE

FOR

**DEVELOPMENT OF MEDIUM TERM
STRATEGY**

FOR AGRICULTURE & WATER

**APPROVED BY TWGAW
JANUARY 27th, 2006**

Abbreviations

AFD	Agence Francaise de Developpement
AusAID	Australian Agency for International Development
B1	Task Force under TWGAW
EDS	External Development Partners
DAALI	Department of Agronomy & Agricultural Land Improvement
DAE	Department of Extension
DOP	Department of Planning
DWRMAC	Depart. of Water Resources Management and Conservation
JICA	Japanese International Cooperation Agency
MAFF	Ministry of Agriculture, Forestry and Fisheries
MOWRAM	Ministry of Water Resources And Meteorology
MTS A&W	Medium Term Strategy for Agriculture and Water
NSDP	National Strategic Development Plan
PICD	Planning and International Cooperation Department
QA	Quality Assurance
RGC	Royal Government of Cambodia
TWGAW	Technical Working Group for Agriculture and Water
TA	Technical Assistance
TF	Task Force
TOR	Terms Of Reference

TERMS OF REFERENCE

1. *Background and Justification*

The Technical Working Group for Agriculture and Water (TWGAW) was started in November 2004. The TWGAW established the B1Task Force (B1TF) to prepare a Medium-Term Strategy for Agriculture and Water. Many discussions in TWGAW and B1TF on the best way to deal with two parallel exercises: the Medium-Term Strategy for A&W / Contribution of MAFF and MOWRAM to NSDP. Finally, two separate contributions to NSDP were prepared by MAFF and MOWRAM, with no substantial input from B1TF and TWGAW; and a draft NSDP was produced. The NSDP clearly states that "a comprehensive strategy for the agricultural sector as a whole is still to be developed" and that "**RGC attaches the highest priority to quickly develop Medium Term Strategy for Agriculture and Water (MTS A&W)**". The proposed deadline for this work is December 2006. These circumstances provide a good opportunity for the TWGAW through B1TF to move forward on this agenda, building on the new strategic documents provided by MAFF and MOWRAM, and on the NSDP itself.

Lessons learned

- i. Number of members in B1TF are too many (not an operational working group) – Not enough staff from the ministries in comparison with number of donor representatives.
- ii. Scope of the work ("Medium-Term Strategy for Agriculture and Water ") at the same time very wide and not clearly defined.
- iii. Time frame not defined
- iv. No clear identified support from donors to MAFF and MOWRAM staff to work on this strategy.

Building on these lessons, and after exchanges among donors and between donors and Administration (mainly MAFF at this stage), an operational MAFF/MOWRAM development team for drafting the "MTS A &W" is proposed. Some key elements for this new step to be successful are:

- a. workable size of the group (4 to 6 people);
- b. members of the group from MAFF and MOWRAM;
- c. necessity of clear and detailed terms of reference (scope of the work, objectives, timeframe, etc.
- d. balance between necessary ownership and need for external support – leading to a clear commitment of the ministries involved, and of donors in terms of technical and financial support;
- e. ambition of the work adapted to realities, particularly in terms of capacities and work load of ministries' staff. This can lead to focusing on some key issues needing strategic decisions;
- f. necessity to see this exercise as a capacity building process as well.

These elements have been taken into account in the following terms of reference for the "MTS Agriculture & Water development team, which *was in substance approved by the TWGAW 08.12.2005*.

The donor agencies recognize the importance of developing a realistic and nationally owned strategic framework, which may lead into definite programs for investments and support activities. There is thus an explicit commitment to support this strategy process, and an implicit (but not yet concretized) intention to provide support to such programs, when and if sufficiently credible national development programs become ready for implementation.

2. Objectives of the Work

The objective of the work is to formulate a *Medium-Term Strategy for Agriculture and Water Resources* covering the relevant areas of MAFF as well as of MOWRAM. This strategy will describe the policy and vision for the sector, propose achievable targets (both qualitative and quantitative) and describe the way to attain these targets.

This will be followed by the development of a *Sector Program Framework* taking the strategy forward to implementation.

3. Outputs

- *Inception Note* by 15 January 2006.
- *Interim working papers* as required (will be detailed in the Inception Note)
- *Strategy structure* by 15 March 2006
- *Draft Strategy Report* by 30 June 2006.
- *Draft Sector Program Framework* by 30 Sept. 2006
- Final Sector Program Framework for RGC/EDP funding by 31 Dec. 2006

4. The Scope of Work

The strategy will generally cover agricultural production and water management in agricultural areas. This excludes the Fisheries, and Forests sub-sectors, which already have separate national reform programs and technical working groups. The plantations (Rubber etc.) sub-sector will also be excluded. Overlapping areas (e.g. in rice-fish, aquaculture, etc) will be coordinated in liaison with other working groups.

In **agricultural water management** the strategy will especially cover:

- Set a target for irrigated area (25% of rice area set in the draft NSDP)
- Prioritize irrigation purposes
 - -----for supplementary irrigation to wet season crops , for dry season crops
 - ----- for reduction of food shortage, for export, for what ?
- Develop measures to increase productivity and water management efficiency in irrigated area (appropriate seeds, fertilizer and other inputs, reduction of draught power cost)
- Develop measures on how to diversify agriculture production, including fish raising, in irrigated area (combination of high water requirement crop and low water requirement crops to expand beneficiary area)
- Clarify how to sell products produced in irrigated area

- Make details of linkage between agriculture, irrigation and extension activities (
- Establish and upgrade Farmers Water Users Communities, and develop measures for the active participation of water user groups in development efforts.
- Generally improve water management for irrigated as well as rainfed areas
- Propose institutional arrangements for improved water management

The areas stated in the draft NSDP, Nov.8, Paragraph 4.40, 4.44 and 4.64:

- Agricultural land management
- Production of High Yielding Varieties
- Increased production of rice export
- Increased production of crops like fruits and vegetables
- Cropping systems that make the best use of limited water resources and reduce risk to farmers from year-to-year variations
- Best crops to be grown every season in terms of soil condition, export potential, etc.
- Livestock as major source of income and protein in rural communities
- Controlling water for agricultural purpose, by means of storage, drainage or irrigation as appropriate
- Rehabilitate and reconstruct the existing irrigation and drainage systems;
- Expand surface water storage facilities and promote water harvesting technologies;
- Promote sustainable development of ground water resources, particularly for high value and horticultural crops;
- Strengthen and expand Farmer User Communities with both women and men members to ensure efficient and equitable water use and ensuring wide community participation in water management;

This list is indicative, and can be expanded or limited after the first phase of work. The B1 Task Force will coordinate and liaise with other relevant work groups and task forces as relevant; e.g. in relation to rice-fish and aquaculture with the Technical Work Group on Fisheries. In this way unnecessary duplication of works in different areas will be avoided.

The following are the main foundations upon which the MTS Agricultural and Water Resources work must be built:

1. The Millennium Development Goals for Cambodia
2. The Rectangular Strategy of RGC
3. The National Strategic Development Plan 2006-10
4. The MAFF Agricultural Sector Development Plan 2006-10
5. The MOWRAM Strategic Development Plan 2006-10, and
6. The relevant mandate areas of MAFF and MOWRAM as per Sub-Decrees.

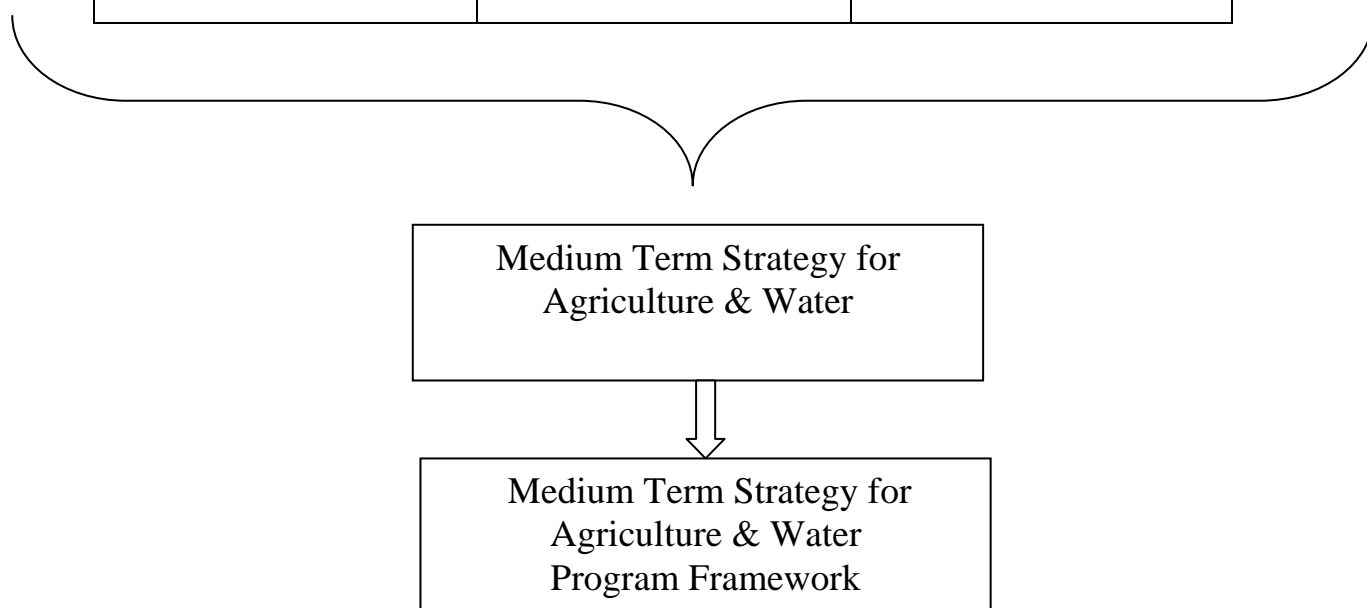
These foundations and how it feeds into the strategy work is illustrated below:

National Framework

RGC Rectangular Strategy	Millennium Development Goals	NSDP 2006-10
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Sector Framework

The MAFF Agricultural Sector Development Plan 2006-10	Relevant MAFF and MOWRAM Mandate Areas	The MOWRAM Strategic Development Plan 2006-10
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5. Main Activities

The main activities will be the following:

- collection of relevant data and documents (existing sector or sub-sector policies or strategies, studies, project documents, etc.)
- analysis of documents, and production of synthesizing notes,
- clear definition of the issues/questions to work on
- for each issue: diagnosis, constraints & opportunities, propositions of scenarios and strategic options, ...
- definition of the structure of the strategy
- formulation of the draft strategy
- at different stages: consultation with stakeholders (workshop)
- formulation of the Sector Program Framework

6. Task Group Composition

The strategy work will take place in B 1 Task Force under the TWGAW. B1 Task Force will organize its work so that the persons assigned for the

strategy work will meet on a weekly basis in a B1 Strategy Session. The general B1 Task Force will continue to meet as per current practice (e.g. monthly).

The persons assigned for the strategy work are:

Function	Name and Designation	Time Allocation ¹³
Conveners	Dr.Theng Tara, Director, DWRMAC, MOWRAM. Mr. Mak Soeun, Deputy Director, DAE, MAFF.	Once a week Jan- Dec. Once a week Jan-Dec
Team members	Mr. Chhea Bunrith, Deputy Director, PICD, MOWRAM Mr. Thaeh Sovanna, Deputy Director, DWRMAC, MOWRAM Mr. Auk Chily, Deputy Director, PICD, MOWRAM Mr. Siv Touch, Chief Planning Officer, DAE, MAFF, Mr. Om Pick, Deputy Chief Planning Officer, DAALI, MAFF Mr. Nhem Putheara, Officer, DPSIC, MAFF	Each one day a week Jan - Dec
Secretariat	<u>The TWGAW Secretariat:</u> Mr. Mak Mony (MAFF, DOPS) Mr. Tith Bone (PICD, MOWRAM ,)	Jan- Dec.
Facilitators/ Advisors	Mr. Jean-Marc Bouvard (French cooperation, MAFF) Mr. Sébastien Balmisse (French cooperation, MOWRAM) Mr.Jens Lauring Knudsen (AusAID) Mr.Yasunori ARAKI(JICA)- to manage operation of the group Mr. Srey Chanthy, (CCO/CIDA) Mrs. Chamroeun Modita (World Bank) Mr. Sap Sophea, FAO	Jan- Dec. Jan- Dec. Jan- Dec. Jan- Dec Jan-Dec Jan-Dec
Consultants	Possible needs to be defined and phased as appropriate inputs into parts of the Process Plan (7)	

In addition, a number of Resource Persons from relevant institutions and departments (including NGOs, academics, private sector and farmer representatives), may be asked to participate in various aspects of the work; e.g. via seminars, workshops, focus groups, etc.

7. Process Plan

¹³ The time allocation can be made more precise.

- Reporting the advancement of work, for discussions and endorsement, will be done to B1 Taskforce and TWGAW, plus quarterly update meetings with the two Ministers.
- Time frame: see § 3.
- Technical support given
 - by “local international advisors” (AusAid, JICA, French Cooperation)
 - by international experts in the framework of the French funded “Support for the definition of agricultural sector policies” and/or the AusAID CATAF facility. Some experts could assist the working group in terms of methodological support (methods, work plan), review of the working papers, internal consultations, capacity building, through regular missions along the whole process (for example total of 6 weeks of support and expertise throughout the 6 months process)
 - by Task Force C1-C3 on specific issues tackled by them. These Task Forces are to contribute output to the Strategy Work Group.

The B1 Task Force will further especially coordinate and liaise with the MOWRAM Work Group, which will work on operationalising the whole MOWRAM Strategic development plan for water sector.

8. Reporting

Inception Note: The Task Group will prepare an initial Inception Note at the start of the assignment. The Inception Note will detail their interpretation of the TOR, main concepts, processes and methodologies, and the detailed Work Plan. This will be discussed and agreed with B1 Task Force during the first few days of the assignment.

Interim Reports or Working Papers as required (to be detailed in the Inception Note)

The Strategy Reports: The Task Group will prepare the draft Strategy and framework Reports as mentioned under Objective and Scope of Work above. The Reports will be submitted to the general B1 Task Force meeting for discussion and comments – upon which a Final Draft Reports for wider exposure, presentations and approvals will be issued.