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Preparedness of Cambodia Small Landholder Farmers toward ASEAN Economic Community (AEC) Integration

Submitted By: Suon Seng, Lars Daniel Bruce, Chay Keartha, Chheang Sokmao



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Co-Researched by: Suon Seng, Lars Daniel Bruce, Chay Keartha, Chheang Sokmao
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On behalf of the consultant team:
Suon Seng, Team Leader

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Abbreviations and Acronyms

AC	:	Agriculture Cooperative
ADB	:	Asian Development Bank
AEC	:	ASEAN Economic Community
ASSDP	:	Agriculture Sector Strategic Development Plan
ASEAN	:	Association of Southeast Asian Nation
CARDI	:	Cambodia Agricultural Research and Development Institute
CEDAC	:	Cambodian Centre for Study and Development in Agriculture
CENTDOR	:	Center For Development Oriented Research in Agriculture and Livelihood Systems
CMDG	:	Cambodia Millennium Development Goal
ELC	:	Economic Land Concession
FA	:	Farmer Association
FAF	:	ASEAN Cooperation on Food, Agriculture and Forestry
FAO	:	Food and Agriculture
FNN	:	Farmer and Nature Net
FTA	:	Free Trade Agreement
GDA	:	General Directorate of Agriculture
GDP	:	Gross Domestic Product
GSP	:	Generalized System of Preferences
ILO	:	International Labour Organization
LICADHO	:	Cambodian League for the Promotion and Defence of Human Rights
MAFF	:	Ministry of Agriculture, Forestry and Fishery
MFI	:	Micro-Finance Institute
MoP	:	Ministry of Planning
MoWRAM	:	Ministry of Water Resource and Meteorology
NGO	:	Non-Government Organization
NGO Forum	:	NGO Forum on Cambodia
NSDP	:	National Strategic Development Plan
PDA	:	Provincial Department of Agriculture
PDoWRAM	:	Provincial Department of Water Resource and Meteorology
RGC	:	Royal Government of Cambodia
SMEs	:	Small Medium Enterprises
USAID	:	United State AID
WRAM	:	Water Resources and Meteorology

Executive Summary

The assignment entitled, “Preparedness of Cambodia Small Landholder Farmers toward ASEAN Economic Community (AEC) Integration,” was conducted in January to March 2016. The ASEAN and the national policies related to agricultural development in Cambodia were reviewed. National key informants working in relation to agricultural development and supporting small landholders were interviewed. The household survey was conducted in three selected districts; Chhuk (Kampot province), Santuk (Kampong Thom province) and O’Yadav (Rattanakiri province).

The objectives of the study are:

- To identify strengths and weaknesses in AEC’s policy frameworks that support small landholder farmers
- To identify strengths and weaknesses in Cambodian policies that support small landholder farmers in Cambodia
- To identify gender roles of small landholder farmers in agriculture productions, with regards the contribution of man and woman farmers in Cambodian agriculture
- To identify challenges and opportunities including: capacity needs of small landholder farmers in agriculture productions, especially women toward the integration of ASEAN Economic Community (AEC)
- To draw policy priorities and recommendations to support male and female small landholder farmers toward the ASEAN Economic Community (AEC)

Key Findings:

Strengths and weaknesses of the AEC’s policy frameworks to support small landholder farmers:

- The message of creating and promoting a sustainable environment for agriculture is clear in the *AEC blueprint 2025*, but it raises challenges for land tenure that have to be taken into account. Firstly, the system of land tenure must become more transparent in the region to avoid the frequent occurring land disputes and to secure smallholder farmers’ rights to productive resources. Secondly, an important lesson learned from the 2008 and 2009 food crises was that trade liberalization may have a negative effect on small landholders’ food security.
- AEC has a special sector called the FAF (ASEAN Cooperation on Food, Agriculture and Forestry) that mainly works to ensure food security,

implementation of green agricultural technologies and sustainable forest management. These are; i) to ensure food security, food safety, better nutrition and equitable distribution and ii) to assist resource constrained small producers and SMEs to improve productivity, technology and product quality, to meet global market standards and increase competitiveness.

- The need of improved infrastructure and efficiency in Cambodian agriculture has been recognized. For instance, the costs of transportation of local Cambodian produce are still very high, thus implying that its economy is not yet fully benefitting from the regional trade agreements.
- In the AEC Blueprint 2025, gender related issues have been addressed. It is formulated that entrepreneurship should be promoted through the establishment of systems and mechanisms that will increase the engagement of women. However, when it comes to gender equality for small landholder farmers there are many things yet to be achieved. There is no clear framework that discusses how to diminish the existing gender gap.
- In terms of intraregional labour migration within ASEAN, AEC addresses and recognizes at the moment, only highly skilled labour groups such as doctors, engineers, architects are entitled to free movement. Other semi-skilled or low-skilled labour groups such as those in the agriculture and the fishing sector, domestic workers and construction-workers, are not encompassed by any of the AEC frameworks.

Strengths and weaknesses of Cambodian policies to support small landholder farmers in Cambodia:

- Agriculture is a prioritized sector, as mentioned in the NSDP. This sector is recognized to play a major role in supporting economic growth, especially the development of rural economy, but also in terms of equity and food security. The NSDP 2014-2018 is driven by a focus on agricultural modernization, diversification and commercialization of agricultural products.
- To support small landholders, a set of policies and laws were developed by the RGC and mandatory ministries. Those include rice seed and subsidiary crop policy, Cambodia Agricultural Organic Standards policy, rice export policy, and the Agricultural Cooperative law. The Ministry of Agriculture, Forestry and Fishery (MAFF) plays an important role to lead, manage, support and to ensure that policy statements and commitments on agricultural development are achieved, as well as to ensure food security and safety in Cambodia. However, it is still doubtful that the land laws

promulgated by the RGC already encourage private investment through the granting of state land for large-scale concessions. The 2005 Sub-Decree on Economic Land Concessions (ELCs) was also developed.

- During the last 6 years (2009-2014), the government increased the national budget by 78 percent for MAFF and by 43 percent for the Ministry of Woman Affair. However, the agriculture share in the national GDP was decreased by 14 percent. This means that agriculture sector has improved, but industry and service sectors have improved more. This makes the agricultural sector less attractive for investors.

In terms of roles of small landholder farmers in agriculture, it is found that:

- Almost all interviewed families have some kind of farming lands, either rice farming land or non-rice farming land. About half of the families interviewed in Santuk, 70 percent of the families interviewed in O'Yadav and 95 percent of the families interviewed in Chumkiri have rice-farming lands. It is to note that: a). At least 70 percent of the families interviewed own motorbikes and all of the families own hand phones. b). Ownership of lawn-mover has grown in O'Yadav, for instance 40 percent of the families interviewed possess a lawn-mover. C).Ownership of hand tractor or motor-trailer has remarkably increased.
- The annual total income of the interviewed families differs from 2,090USD in Chumkiri, 2,330USD in Santuk to 2,872USD in O'Yadav. In O'Yadav, income from agriculture is 57 percent of the total household incomes while in Santuk is 52 percent and only 25 percent in Chumkiri. In comparison to the last five years, income from agriculture is approximately about 48 percent in Santuk, 54 percent in O'Yadav and 43 percent in Chumkiri.
- 50 percent of the interviewed families in Santuk, 60 percent in O'Yadav and 90 percent in Chumkiri have obtained loans. The average loan size ranks from 700USD to 1,500USD. In Santuk and O'Yadav, loans are mainly used for non-rice crops, particularly cassava and cashew nut and for food consumption during food shortage. In Chumkiri, loans are used for doing outmigration and agricultural inputs.

In terms of opportunities, challenges and capacity needed, it is found that:

- The opportunities for small landholder farmers are identified as i). Rural road infrastructure and transportation services are in place, ii). Telecommunication networks are in place, iii). Market systems and infrastructure are in place and iv). Non-farm job opportunities for

supplementing household incomes exist. The opportunities existed in the studied sites were rated as moderate to very good.

- The challenges and constraints for small landholder farmers were identified as i). Access to agricultural land and water for irrigation, ii). Access to markets for selling agricultural products, iii). Access to capital to invest in agriculture production, and iv). Access to quality agricultural inputs (seed, fertilizer, pesticide) and techniques. Access to water for irrigation was rated from poor to moderate, while the access to markets for selling their agriculture produces and capital to invest in agriculture were rated from moderate and good. The access to quality agriculture inputs and technical was rated as moderate only.
- The potential capacity needed for small landholder farmers are identified as i). Self-mobilization and organizing agriculture cooperative, ii). Technical knowledge with good agriculture practices, iii). Establishment of sustainable food production systems and iv). Financial literacy and management of family cash flows. All these capacities are rated as needed to highly needed.

To improve the security and competitiveness of small landholder farmers, it is to recommend that:

- The Royal Government of Cambodia should evaluate the implementation of order 01BB, and expand these lessons for continuing land resolution missions to the rest of the country. Many farmers still wait for the return of the student mission for measuring their lands and to be granted the land titles from the government.
- The Royal Government of Cambodia should consider investing in micro-scale irrigation in drought prone areas. This could be a subsidy of family or community investments on individual or community irrigation schemes (e.g. micro reservoirs such as individual ponds and community ponds).
- The Royal Government of Cambodia should consider putting investment into the established district associations so that they could speed up community development. They would be able to strengthen capacity to compete with other farmers in the ASEAN member countries.
- In addition, the government should invest more in the technical agriculture research area. The research should be oriented to the improvement of the agricultural productivities of small landholder farmers.

I. Introduction

The AEC integration completed on 31 December 2015, has been regarded by the Royal Government of Cambodia (RGC) as opportunities and challenges for Cambodia's economy. It is expected that low labour costs, good market access through Generalized System of Preferences (GSP), as well as preferential market access in ASEAN and ASEAN plus one Free Trade Agreement (FTA), will be the driving forces to attract more investments for Cambodia. This will give Cambodia a better position to compete in the world market, foreign direct investment and take advantages of economy of scale.

The Cambodian agricultural sector, which employs 70 percent of the total population, is dominated by small landholder farmers who have limited access to agricultural techniques, irrigation, investment capital, and marketing their produce. The study conducted by CENTDOR in 2015 among 306 small landholder farmers in the three provinces of Takeo, Kampong Speu, and Kampot showed that farmers who took up agriculture as their main livelihood options made the lowest income compared with those of non-agriculture livelihood options (Chay Keartha and Chheang Sokmao, 2015).

With a purpose to inform the policy makers and decision makers, NGO Forum through its network has proposed a study on "The Preparedness of Cambodia Small Landholder Farmers toward ASEAN Economic Community (AEC) Integration". The study aims to identify roles, challenges and opportunities of Cambodian small landholder farmers especially women in agriculture productions toward the ASEAN Economic Community (AEC) integration. The study will therefore present policy recommendations for supporting small landholder farmers, both male and female farmers, on how to be well positioned in competing with other ASEAN member countries as well as to protect the Cambodian agriculture for its food security and food sovereignty. The study has set the objectives as the following:

- To identify strengths and weaknesses in AEC's policy frameworks in supporting small landholder farmers
- To identify strengths and weaknesses in Cambodian policies in supporting Cambodian small landholder farmers
- To identify gender roles of small landholder farmers in agriculture productions, with regards to the contribution of male and female farmers in Cambodian agriculture

- To identify challenges and opportunities including the capacity needed of small landholder farmers in agriculture productions, especially women toward the integration of ASEAN Economic Community (AEC)
- To draw policy priorities and recommendations to support small landholding farmers (regardless of gender) toward the ASEAN Economic Community (AEC)

II. Methodology and approaches

The consultancy team is built by five researchers: Mr. Suon Seng, Executive Director of CENTDOR, serves as the team leader of this consultancy project and takes overall responsibility of the contract. He acts as the main contact person in this project. Mr. Suon Seng is also responsible for interviewing government staff and NGO staff based in Phnom Penh. Mr. Lars Daniel Bruce is responsible for reviewing ASEAN policy's frameworks with special focus on those that support small landholder farmers. Mr. Chheang Sokmao is responsible for reviewing Cambodian policies with regards to the support of small landholders. Mr. Chay Keartha works with two members of the census.

Five main tasks have been performed by the consultancy team each addressing a set of questions. The project has run from early January to April 2016. Those are:

Task 1: Review AEC's policy and studies: What are the strengths and weaknesses in AEC's legal and policy frameworks in supporting small landholder farmers? This includes: What are the prospects of AEC for Cambodia agriculture sector and its economy? What are the expectations and motivations of Cambodia from AEC's integration? What are the concerns for male and female farmers resulted from AEC's integration?

Task 2: Review Cambodian Government's Policies: What are the strengths and weakness in Cambodia's policy frameworks in supporting small landholder farmers?

This includes: What are the existing policies to support small landholders to be ready for AEC integration? Do existing policies take gender issues into account in the AEC's integration process? What are the prospects of Cambodian's agriculture sector and its economy with regards to the AEC integration?

Task 3: Review grey literature, government documents and key informant interviews on roles of small landholder farmers in Cambodian agriculture: What

are the contribution of small landholder farmers in the agriculture sector with a special focus on the gendered roles of men and women in Cambodia's agriculture?

This task includes: What are the changes in the gender roles of small landholder farmers compared with the last 5 years? What is the current status of Cambodia's agriculture, with regards to the technologies, productions and market including farmer cooperative and policy supports? What are the contributions of men and women farmers to Cambodian agriculture?

Task 4: Interview target farmers for case studies on challenges, opportunities and capacity needed:

A). What are the challenges and opportunities of small landholder farmers; especially female farmers toward the integration of ASEAN Economic Community (AEC)? This includes: What is the knowledge of small landholder farmers on AEC? What actions have been taken or should be taken by small landholder farmers to adapt/adopt the AEC integration? What are the different challenges and opportunities for male and female farmers potentially given by AEC?

B). What are the capacities needed for small landholder farmers to be ready for market competition? This includes: What are the current standing of agriculture contributed to their household economy and its trend within the last 5 years? What is the status of family agriculture with regards to the production techniques and facilities, financing and market access – this includes agriculture cooperatives? What are the different capacities needed by male and female farmers to benefit from the AEC integration?

To implement this task, the study has selected three case studies from three districts in three provinces: Kampot (Lowland-based farming), Kampong Thom (Plateau-based farming) and Ratanakiri (Upland-based farming). 50 households per each selected province have been interviewed (in total 150 households from 3 provinces).

Task 5: Assessment on the policy priorities and recommendations: What are the policy priorities and recommendations for supporting small landholder farmers toward ASEAN Economic Community (AEC)?

In reflection to the implications of AEC, changes in agricultural roles, challenges & opportunities, what policies are needed to support small landholder farmers? What are the needed policies in order for male and female farmers to equally share the benefits from AEC integration?

Scope and limitation: Methodological reflection

This is an agriculture policy study. The reviews on AEC's policy and RGC's policies are the main components of the study. The study has reviewed the differences between the policies and the reality of landholding farmers at the community level. Thus, the study has decided to select three case studies representing three farming systems; Lowland-based farming (Kampot province), Plateau-based farming (Kampong Thom province) and Upland-based farming (Ratanakiri province). However, these three case studies cannot cover all types of Cambodian farming systems. In addition, these case studies are not jointly exhaustive of all possibilities on the community level. The study team welcomes other contributions of other partners in terms of new information for enriching the analysis of these development issues.

III. Policy frameworks supporting small landholder farmers

3.1. AEC's policy frameworks in supporting small landholder farmers

On 31 December 2015, the Association of Southeast Asian Nations (ASEAN) launched a single market and production base, called the ASEAN Economic Community (AEC), which allows a free flow of goods, services, investments, skilled labour, and freer movement of capital across the region. The region has identified itself as one of the most productive breadbaskets of the world and given its regional proximity to two of the world's biggest food markets, India and China, it is claimed that there is increasing potential for growth of the agricultural sector within ASEAN (Invest in ASEAN, 2016). The growth of the agricultural sector is seen to occur due to better connectivity and infrastructure that may be promoted as a result of the AEC.

At the same time, small-scale agriculture is the main form of agriculture in the region. Therefore, when attempting to understand AEC in the context of agriculture, it is important to highlight what such integration may imply for small landholders. To identify and discuss the strengths and weaknesses in AEC's legal and policy framework, in relation to small landholder farmers in Cambodia, we will scrutinize two of the AEC's policy documents, the *AEC Blueprint 2015* and the *AEC Blueprint 2025*.

Smallholder Farming in Cambodia

Agriculture remains the backbone of the Cambodian economy, representing 35.6 percent of its GDP (World bank, 2015). The average agricultural land holding per farming household was noted to be 1.4 hectares in 2011 (USAID, 2011), making smallholder agriculture the dominant form of farming in the country. The two main types of cropping systems in Cambodia are: the rain-fed rice and non-rice (*Chamkar*) systems, which includes multi-cropping along the riverbanks, swidden agriculture (also known as slash and burn) and perennial crop systems in the uplands (Diepart, 2015). Among the ASEAN member states, Cambodia ranks the highest in terms of its rural population, with approximately 80% of its people living in rural areas (International Labour Office, and ASIAN Development Bank, 2015). The rural poverty rate in Cambodia came to 20.8% in 2012, more than 3 times higher than its urban poverty rate. Even though poverty has been significantly reduced in both rural and urban areas during the last decade, the majority of poor Cambodians live in rural areas (International Labour Office, and ASIAN Development Bank, 2015). Many of the Cambodians that reside in the rural areas have historically been small landholder farmers growing crops and managing forestry, on a small scale.

In 2010, 55% of Cambodia's population was employed in the agricultural sectors. By 2025 this share is expected to decrease to 50%, and when taking into account the estimated impact of the effects by AEC, a further decline of 1.7 % is expected (ILO Regional Office for ASIA & the Pacific, and Asian Development Bank, 2014). At the same time, we see a clear increase of employment in the industrial sector. However, while agricultural employment is likely to shrink, there is little doubt that the agricultural sector as a whole will continue to play a dominant role in the coming years (ILO Regional Office for ASIA & the Pacific, and Asian Development Bank, 2014).

Moving forward with AEC

Launched in 2007, the *AEC Blueprint 2015* was built on four interrelated pillars. These are first, a single market and production base; second, a competitive economic region; third, equitable economic development; and fourth, integration into the global economy. While fundamental achievements have already been made, such as tariff elimination between member states, liberalization of the market and economic transparency, there are still many goals left to be achieved (ASEAN Secretariat, 2015a, 10-12).

The *AEC Blueprint 2015* was followed by the *AEC Blueprint 2025*, which was put forth in 2015. The key focus of this revised Blueprint was to solidify the previous frameworks and to strengthen and develop the collective identity of the AEC. With its aim of creating a resistant and sustainable economic unit, the *AEC Blueprint 2025* has a stronger focus on trade as a key to improve the competitiveness and strengthening the economic integration (ASEAN Secretariat, 2015b, 26).

Linking AEC's vision with Cambodian smallholders

Given Cambodia's demographic profile, where more than half of the country's total population is engaged in small-scale agriculture, we now turn to the question of how these AEC policy frameworks support small-scale landholders.

In the section on sustainable economic development in the *AEC Blueprint 2025*, there is a clear focus on promoting a sustainable environment for agriculture. For instance, the Blueprint notes the need to “promote good agriculture practices to minimize the negative effects on natural resources such as soil, forest and water, and reduce the greenhouse gas emissions” (ASEAN Secretariat, 2015b, 20). Additionally, the *AEC Blueprint 2025* places an emphasis on forest management involving communities dependent on forest resources for their livelihoods (ASEAN Secretariat, 2015b, 20).

Although the AEC Blueprints highlights the above-mentioned crucial tasks for sustainable economic development, there are some challenges in the legal framework for land tenure that have to be addressed. Firstly, it has been pointed out that the system of land tenure must become more transparent in the region to avoid the frequent occurring land disputes and to secure smallholder farmers' rights to productive resources, such as land, to create a platform ready for a sustainable economic development (International Labour Office, and ASIAN Development Bank, 2015). Improvements in secure land tenure arrangements will facilitate economic incentives for the small landholder farmers to invest in their land. When farmers invest in their own land there is an expected growth in agricultural yield and productivity (Bank, 2015, 87). Secondly, an important lesson learned from the 2008 and 2009 food crises was that trade liberalization may have a negative effect on small landholders' food security, particularly in the absence of social protection mechanisms. The problems with trade liberalization for countries largely dependent on smallholder agriculture have been inability to achieve economies of scale, lack of access to new technologies and prevention of risks (Thapa and Gaiha, 2011). According to the Global Food Security Index of

2015, Cambodia has the greatest level of food insecurity in the Asia and Pacific Region (The Economist Intelligence Unit, 2015, 26).

Regarding food security, the AEC has a special sector called the FAF (ASEAN Cooperation on Food, Agriculture and Forestry) that seeks to ensure food security, implementation of green agricultural technologies and sustainable forest management. FAF also focuses on assisting “resource constrained small producers and SMEs to improve productivity, technology and product quality, to meet global market standards and increase competitiveness” (ASEAN Economic Community Department and ASEAN Secretariat, 2015, 56). Thus, on paper FAF has elaborated strategies to ensure food security and to support the development of Cambodia's smallholders' agricultural practice. However, the implementation of these strategies for the vast amount of smallholder farmers in the rural areas remains a challenge for the Cambodian government, due to weak financial and limited technical capacities (FAO, 2014, 5).

The need to improve infrastructure and efficiency in Cambodian agriculture is evident. Agricultural products can be bulky and are often perishable, requiring special logistical requirements that are costly. Freer trade may contribute to lower food prices and to increase the access to food within the AEC region, but inefficiencies caused by high transportation costs impact these beneficial processes (Caballero-Anthony, 2013, 2). Due to these reasons, the Cambodian economy is not yet fully benefitting from the regional trade agreements (International Labour Office, and ASIAN Development Bank, 2015).

The *AEC Blueprint 2025* recognizes these hurdles by stating the need to improve the connectivity and the infrastructure of roads and railways for the transportation of goods. This should aid smallholders' access to better transportation of their products, and help them in scaling up their production. This is supported by the country's low transportation costs (ILO Regional Office for ASIA & the Pacific, and Asian Development Bank, 2014).

At the same time, “smallholder farmer” is a diverse category and livelihoods and vulnerabilities are clearly differentiated along gender lines. A survey conducted by ADB in 2012 demonstrates this gender gap in the agricultural sector in Cambodia, wherein women in agriculture earned a lower average monthly salary than men (ADB, 2015, 19-21). This may be linked to the fact that women are socially expected to undertake what has averaged out to be 3.5 more hours of unpaid domestic work daily than their male counterparts. Moreover, on the

issues of access to land, technology and financial services, men clearly enjoy a more advantaged position in Cambodia (ADB, 2015, 19-21).

In the *AEC Blueprint 2015* the issue of gender inequality is missing. At the same time, in the *AEC Blueprint 2025*, some gender related issues have been addressed, but to a limited degree. In the section of “Science and technology” it is communicated that entrepreneurship should be promoted through establishing “systems and mechanisms that will increase the engagement of women...” (ASEAN Secretariat, 2015b, 20). However this does not indicate a significantly developed gender perspective in the AEC frameworks. More concrete measures are needed in order to address this major issue.

The economic differences among the ASEAN member states are distinct. An average salary in Thailand is three times as high as in Cambodia. As a result, a significant number of smallholders from Cambodia migrate to Thailand for agricultural work. The World Bank has estimated that around 750,000 Cambodians now live in Thailand (International Labour Office, and ASIAN Development Bank, 2015).

The increasing economic exchange within the AEC has been accompanied with a spike in intra-regional migration flow within the ASEAN region (ILO Regional Office for ASIA & the Pacific, and Asian Development Bank, 2014). This migration flow is likely to continue to increase, as it is largely market-driven, and reflects the income differences within the countries in the region (Asian Development Bank, 2015b, 8).

At the moment, the AEC frameworks only account for the migration of highly skilled labour groups, such as doctors, engineers, and architects etc. Semi-skilled or low-skilled workers, for instance those engaged in the agriculture and the fishing sector, domestic workers, and construction workers, are not included in AEC frameworks. However, the current labour migration flow within the ASEAN member countries is largely comprised of these low-skilled labour groups, including a large section of smallholders (Asian Development Bank, 2015b, 8). These vulnerable groups therefore lack access to any form of social protection under government or AEC frameworks (ILO Regional Office for ASIA & the Pacific, and Asian Development Bank, 2014).

The discrepancy between AEC's lack of framework for low-skilled migrant workers and the reality of high levels of low-skilled labour migration in the

region highlights an important gap in AEC policy frameworks. In order to ensure proper labour standards, which provide both protection and opportunities to the migrant workers, policy interventions from the AEC are necessary. (ILO Regional Office for ASIA & the Pacific, and Asian Development Bank, 2014).

3.2. Cambodian policies in supporting small landholder farmers

According to the issues raised by small landholder farmers during the national farmer forum in 2015 and 2016, the priority issues for small landholder farmers are: agricultural techniques, irrigation, investment capital, and marketing of their produce. In addition, the security on land is one of the main constraints raised by Cambodian farmers. Therefore, the policy reviews are focusing on these five main areas in response to the needs of small landholder farmers.

The agricultural sector represents one of the four pillars of the rectangular strategy of the RGC (Phase 3). This sector is recognized to play a major role in supporting economic growth, especially for the development of rural economy, but also in terms of equity and food security (RGC MoP, 2014). This is well fitted with the AEC Blueprint 2025. The promotion of the agricultural sector in the NSDP has a focus of modernization, diversification and commercialization (RGC MoP, 2014).

Modernization is seen as a way to improve the productivity through increasing mechanization and irrigation in the NSDP. A certain number of laws and regulations are expected to contribute to this modernization, especially those on seed production, agricultural inputs importation, contract farming, agricultural land use, crop protection, water user associations and human resource development, which are presented as providing a supportive framework for the development of the agricultural sector (ASSDP, NSDP).

In 2014, GDA drafted a policy on rice seed and subsidiary crops. The objectives of this policy are to ensure that farmers are able to access good quality crop seeds and different varieties. The scope of this draft policy covers all varieties of crops and agricultural equipment; it recognizes new seeds as well as varieties introduced by breeding and their distribution to the farmers. This policy is aligned with the law on seed crop management and the rights of seed breeding in 2008 and the sub decree on contract farming, as well as the rice export policy (RGC, 2011) (RGC, Law on Seed Management and Plant Breeders' Rights, 2008). This policy will provide an opportunity to small farmers and seed breeders to register new varieties of crops, which they have developed. At the same time, GDA drafted a new policy on Cambodia Agricultural Organic Standards. This

policy is currently in the process of consultation amongst a technical working group of concerned departments at the GDA. This policy focuses on all kinds of crop and animal products in Cambodia. It is also aligned with the promotion of good agriculture practice in the AEC Blueprint.

Commercialization and **diversification** are key priority policies in the NSDP. The objective of commercialization mainly consists in promoting trade and export of agricultural products. Agricultural cooperatives have a recognized role in this effort, helping to develop agri-business networks. This increased commercialization relies on an enhancement of processing capacity, a strengthened logistics system, better access to markets and the facilitation and simplification of trade. In addition, as a consequence of the focus on export, the quality of the products should reach international standards. Other than better links between producers and traders, the improvement of partnerships between large-scale agro-industries and household farming is mentioned as a contribution to the agricultural commercialization. This is found consistent and reflecting on AEC's vision and goal, which is about creating sustainable economic unit that reduces poverty and strengthens the region's economic growth, also on a global level (ASEAN Secretariat, 2015b, 20).

To promote small landholders in the agricultural development and farmer communities, MAFF developed a law on Agricultural Cooperative (AC) in 2013 to support and manage agriculture communities in the country (RGC MAFF, 2013). This law consists of a very detailed description about the mandate, the structure, the role and the responsibilities of each AC, the role and responsibilities of the government and its agencies to support farmers. After the law was approved by the National Assembly, the Department of Agricultural Cooperative (DAC) was established under the General Directorate of Agriculture (GDA) of MAFF.

Law on Cooperative, Article 13: The concerned state ministries and institutions have the obligation to provide supports to all activities and operations of the cooperatives under their authorization in accordance with the policies of the Royal Government of Cambodia.

Diversification is aimed towards high value products with a focus on cash crops and potential exported commodities (e.g. rubber, cassava, sugarcane, cashew nut, etc.). By the end of 2018, these initiatives are expected to increase the value-

added per hectare for all crops by 50 percent compared with 2007 (RGC MoP, 2014). Agricultural research and development plays a central role in order to provide not only technological innovation, but also reflection about the adaptation of different techniques to the local context and the model promoted (MAFF/ASSDP, 2015). From these major orientations, hypothetically, it would provide the link between value-added products, increase in income, and poverty reduction. Nevertheless, the (pre)conditions of this successful sequence are not really discussed nor explained.

As aligned with the mandate of RGC's, the Ministry of Agriculture, Forestry, and Fishery (MAFF) developed its own agricultural policies and strategies to support the RGC's policy statement and agenda such as rice exported policy, food security and safety, and poverty reduction (RGC MAFF, 2015). Taking into account that Cambodian agriculture is dominantly rice-based farming, these policies would provide positive impact on the improvement of livelihoods of rice-based farmers.

Sceptical policies and its consequences: small landholder farmers vs. large landholder agriculture companies

The Royal Government of Cambodia has promoted large-scale investment in agriculture and agro-industrial crops in Cambodia through the granting of Economic Land Concessions (ELCs), as part of its strategy focusing on economic growth in the agricultural sector. In 2001, the land law was adopted. It came to the possibility to lease state private land to large-scale investments for up to 99 years. A private company can lease land, up to 10,000 hectares, granted as an ELC. With the 2001 land law, land was granted in Cambodia to both domestic and foreign investors for long term use, especially during 2010 and 2011 (Messerli et al., 2015) (Sperfeldt et al., 2012). In 2012, many land conflicts occurred. To address this, the Prime Minister of Cambodia issued order 01BB for land conflict resolution. In June 2012, a national campaign was launched; it aimed to implement Order 01 by legalizing unclear land occupation around ELCs and issuing land titles to existing land occupants who are using and cultivating land. The land targeted can be diverted into three categories: ELCs, forest concessions or confiscated land in the forest cover (Im Chhun Lim, 2012). It supported and enforced the "leopard-skin" policy of the government, which aims to exclude inhabited areas from the concessions and mitigate the encroachment on the land of farmers and communities.

In terms of consequences on the livelihoods of small landholders, the situation and the range of effects can vary according to the region and the population, but some recurring elements can be stressed. Encroachment on farm lands and substantial loss of assets are experienced by farmers together with a loss of access to reduced natural resources, and forest products leading to drastic changes in their environment and the loss of their traditional livelihoods. It is estimated that about 420,000 people have been affected by land concessions and other land grabs since 2003 (LICADHO, 2014).

The losses of assets ranges from i) extreme – losing all land and including some compensation or/and displacement and relocation of people, ii) severe - no eviction but not enough land to satisfy basic needs, to iii) partial - enough land to maintain farming activities to satisfy basic needs. The magnitude depends on the size of the land acquisitions, overall land availability amongst affected areas, the proximity of the land concessions to areas used by the population, and finally the pace of the implementation of the ELCs (Gironde et al., 2014). For people experiencing eviction, displacement, and relocation, their livelihoods will mainly depend on the opportunities offered at the new location. The different categories of people described are clearly prone to become landless or land poor and face considerable difficulties securing their livelihoods.

Besides the immediate impact of ELCs, consequences on livelihoods should be assessed in a mid-term perspective. Small landholders, especially ethnic minorities, who could face the losses of assets, are then confronted by an agrarian transition. Agrarian transitions can be understood as a major transformation of agriculture, its role in the society, or changing the relationships of the population with the environment (Castella, 2007). This process took place and was initiated by public policies prior to the explosion of ELCs, such as the promotion of modern techniques and market-based development of cash crops. The granting of ELCs, especially after 2005, dramatically increased the pace of the transformation of rural livelihoods, and changed the socio-economic environment, characterized by an increased need for cash. (Gironde et al., 2014). Farmers are now experiencing an uneven transformation of their rural livelihood systems and a process of social and economic differentiation as threats and opportunities arising from this new socio-economic environment do not affect the population in the same way (Gironde et al., 2014).

IV. The Status of Cambodian Agriculture

In terms of rice production, Cambodia could make remarkable increase of its production to a reach self-sufficient level and surplus for export. From 2009 to 2014, rice production increases about 23 percent. This increase is partly due to the increase of cultivated area (12 percent) and from the increase of rice yield (8 percent). The increase of rice yield is due to the introduction and adoption of improved rice varieties, which are recommended by the research station (CARDI), and the increasing uses of farm inputs especially chemical fertilizer. The adoption of improved varieties increases every year (CARDI, 2015). At the same time, the loss of harvested area was reduced about 40 percent from 2009 to 2014.

Table 1: Status of rice production from 2009-2014

Year	Total production area (ha)	Harvested area (ha)	Total production (Ton)	Rice yield (Ton/ha)	Damage loss (ha)
2009	2,719,080	2,674,603	7,585,870	2.84	44,477
2010	2,795,892	2,777,323	8,249,452	2.97	18,569
2011	2,968,529	2,766,617	8,779,365	3.17	201,912
2012	3,007,545	2,980,297	9,290,940	3.12	27,248
2013	3,052,420	2,968,967	9,389,961	3.16	83,453
2014	3,055,507	3,028,836	9,324,416	3.08	26,671
Average	2,933,162	2,866,107	8,770,001	3.06	67,055
Increasing rate (2009 to 2014)	12%	13%	23%	8%	-40%

Source: Annual agricultural statistics; MAFF 2009-2014

Besides rice production, non-rice crops have increased, particularly rubber production, and cassava. The production of rubber increased by 180 percent while the production of cassava increased by approximately 242 percent. On the contrary, the productions of soybean and corn were decreased by 24 percent and 40 percent respectively. From the field observation, there is an increase in cashew nut and black pepper. However there is no data available for these productions.

Table 2: Status of key non-rice crops from 2009-2014 (thousand ton)

Year	Rubber (1,000 Ton)	Rubber (ha)	Cassava	Soybean	Corn	Vegetable
2009	37	127823	3497	137	924	323
2010	42	181433	4249	157	773	377
2011	51	213104	8034	115	646	400
2012	65	280354	7614	120	820	411
2013	85	328771	7933	131	927	453
2014	97	357800	11943	104	550	415
Average	63	248214	7047	127	773	397
Increasing rate (2009 to 2014)	162%	180%	242%	-24%	-40%	28%

Source: Annual agricultural statistics; MAFF 2009-2014

In addition to crop production, poultry and pig productions increased but cattle and buffalo production decreased. The decrease of cattle and buffalo is due to the reduction in labour demand for cattle and buffalo in farming activities. These draught-animals are replaced by mechanical machinery such as tractors and motor-trailers.

Table 3: Status of livestock raising from 2009-2014

Year	Poultry	Pig	Cattle & buffalo
2009	20,192,811	2,126,304	4,319,528
2010	20,834,295	2,057,431	4,186,675
2011	22,036,755	2,099,332	4,095,801
2012	22,098,809	2,208,611	4,033,780
2013	27,316,415	2,436,699	4,050,009
2014	31,583,657	2,735,717	3,601,786
Average	24,010,457	2,277,349	4,047,930
Increasing rate (2009 to 2014)	56%	29%	-17%

Source: Annual agricultural statistics; MAFF 2009-2014

It is to note that the budget for national agriculture has increased with 78 percent from 2009 to 2014 but the share of GDP from agriculture has decreased with 14 percent. It could be said that the agricultural sector has not performed well in the

last five years and the industrial and service sectors have become more active. Interestingly, the national budget for the Ministry of Woman Affair increased around 43 percent during the same five years period. This has shown the apparent commitment of the RGC to bridge the gap of gender inequality in Cambodia particular in the industrial and service sectors.

Table 4: Status of agriculture land and GDP contribution from 2009-2014

Year	Share (%) in GDP (at constant 2000 price)	Total national budget (in thousand USD)	National Expense for Agriculture (in thousand USD)	National expense for woman affair (in thousand USD)
2009	33.5	1,770,626	19,777	6,243
2010	33.9	2,024,335	21,338	6,807
2011	34.6	2,402,354	24,095	6,895
2012	33.5	2,626,337	30,404	7,221
2013	31.6	2,950,018	34,437	7,525
2014	28.7	2,049,360	35,143	8,946
Average	32.6	2,303,838	23,521	7,272
Increasing rate (2009 to 2014)	-14%	16%	78%	43%

V. Case study on agriculture status of small landholder farmers

5.1. Key profiles of informant households

Amongst the interviewed families, female-headed families are ranked from 5 to 10 percent. In Santuk and Chumkiri district, the household heads that completed lower secondary school are about 15 percent, while in O'Yadav, none of the interviewed completed lower secondary school. The reason given why none of the female heads of household could complete lower secondary school is due to their settlement located far from school when they were young or there were no schools at that time. Therefore, they have no opportunity to get educated.

Table 5: Key profiles of informant households in 2016

No	Profile items		Santuk	O'Yadav	Chumkiri
1	Man-headed family		90%	95%	90%
2	Woman-head family		10%	5%	10%
3	Education of households at least lower secondary school	For man-headed family	15%	0%	15%
		For woman-headed family	0%	0%	0%
4	Settlement history in the current district	From 1-5 years	25%	5%	10%
		From 5-10 years	20%	5%	10%
		More than 10 years	55%	90%	80%

More than 95 percent of the interviewed families own residential land, while less than 5 percent have no residential land. These could be the young couples who have settled on the land of their parents or poor families who faced difficulties and sold all their land properties. Often it is the case that residential land is the last family resource to be sold off in times of need.

Almost all interviewed families have some kind of farming lands, either rice farming land or non-rice farming land. About half of the interviewed families in Santuk, 70 percent of the interviewed families in O'Yadav and 95 percent of the interviewed families in Chumkiri own rice-farming lands. Indigenous families in O'Yadav who lived in land abundant areas and used to depend on upland rice farming for food consumption have switched to cash crop farming and depend on purchasing rice from the market for family consumption. This remarkably changes food culture and diet for those who have made this agricultural shift. A few reasons for this trend are; i) land is not suitable for rice farming after two or three rice farming seasons; ii) there is no land available for rotation in upland rice farming practices and iii) there is a market for cassava and cashew nut.

Table 6: Land and land ownership profiles of interviewed households in 2016

No	Profile items		Santuk	O'Yadav	Chumkiri
1	Households own residential land	%HH	95%	100%	98%
		Mean (m ² /HH)	1,800	1,450	1,000
2	Households own farming land	%HH	Rice=50% Farm=80%	Rice=70% Farm=95%	Rice=93% Farm=27%
		Mean (m ² /HH)	Rice=10,000 Chamkar=20,000	Rice=1,5000 Chamkar=3,000	Rice=1,5000 Chamkar=10,000
3	Households own other lands	%HH	13%	22%	18%
		Mean (m ² /HH)	23,000	22,300	5,000

Key physical assets to be observed are: hand tractor or motor-trailer, cattle or buffalo, water pump machine, open well or ring well, motorbike, lawn-mover, and hand phone.

It is to note that:

- Motorbikes and hand phones are owned by majority of the families. At least 70 percent of the interviewed families own motorbikes and all of the families own hand phones.
- Lawn-mover is remarkably adopted in O'Yadav, in which 40 percent of the interviewed families own one.
- Hand tractors or motor-trailers have also remarkably increased. Today 25 percent of the interviewed families in O'Yadav, 40 percent of interviewed families in Santuk and 45 percent of the interviewed families in Chumkiri own one.

Table 7: Key household assets of interviewed households in 2016

No	Key physical assets	Santuk	O'Yadav	Chumkiri
1	Hand tractor or motor-trailer	40%	25%	45%
2	Cattle or buffalo	5%	8%	30%
3	Water pumping machine	3%	5%	7%
4	Open or ring well	65%	45%	0%
5	Motorbike	80%	90%	70%
6	Lawn-mower	3%	40%	0%
7	Hand phone	100%	100%	100%

5.2. *Family's economic activities and incomes*

The annual total incomes of the interviewed families are from 2,090USD in Chumkiri, 2,330USD in Santuk to 2,872USD in O'Yadav. In O'Yadav, incomes from agriculture make up 57 percent, while in Santuk they make up 52 percent and only 25 percent in Chumkiri. In comparison to the last five years, incomes from agriculture are approximately about 48 percent in Santuk, 54 percent in O'Yadav and 43 percent in Chumkiri. Remarkably, incomes from agriculture in Santuk are mainly from cassava, in O'Yadav from cassava, cashew nut, and buffalo, while incomes from agriculture in Chumkiri mainly come from livestock production.

Table 8: Composition of household incomes and its contribution in 2016

No	Income sources		Santuk	O'Yadav	Chumkiri
1	Farm incomes	Current	1,220	1,642	530
		Last 5 years	1,160	1,735	590
2	Non-Farm incomes	Current	1,110	1,230	1,560
		Last 5 years	1,270	1,480	770
3	Total household incomes	Current	2,330	2,872	2,090
		Last 5 years	2,430	3,215	1,360

Table 9: Composition of farm incomes and its contribution in 2016

No	Income sources		Santuk	O'Yadav	Chumkiri
1	Crop production	%HH	Rice=20% Cashew=9% Cassava=64%	Rice=55% Cashew=45% Cassava=75% Rubber=5%	Rice=100% Other crops=15% Vegetable=2%
		Mean	700\$	1,500\$	300\$
2	Livestock production	%HH	Chicken=5%	Buffalo=15%	Chicken=15% Pig=15% Cattle=15%
		Mean	20\$	465\$	500\$

In terms of labour contribution, it is found that:

- In agriculture activities, women contribute more than men in O'Yadav, while men contribute more than women in Chumkiri.
- In non-agriculture activities, men contribute more than women in Santuk and Chumkiri, while women contribute more than men in O'Yadav.
- In non-paid work, women always contribute much more than men.

Table 10: Contribution of labour from male and female work in family agriculture enterprise in 2016

No	Income sources		Santuk	O'Yadav	Chumkiri
1	Farm work	Male	50%	47%	60%
		Female	50%	53%	40%
2	Non-Farm work	Male	75%	48%	75%
		Female	25%	52%	25%
3	Non-productive work	Male	20%	10%	30%
		Female	80%	90%	70%

5.3. Access to information, decision making and knowledge on AEC

In terms of access to information on agriculture inputs, technical knowledge and market, men have more access than women. The differences are particularly evident in Santuk and O'Yadav, while in Chumkiri the gap is less apparent. Decision-making on the adoption of different types of crops or any agriculture activities is mostly made by men.

In addition, about 30 percent of the interviewees in O'Yadav, 35 percent in Santuk and half in Chumkiri have heard about AEC.

Table 11: Access to information, decision making in agriculture and knowledge on AEC in 2016

No	Type of information		Santuk	O'Yadav	Chumkiri
1	Agriculture input	Woman more involved than man	15%	5%	45%
		Man more involved than woman	85%	95%	55%
2	Technical uses of input	Woman more involved than man	15%	10%	40%
		Man more involved than woman	85%	90%	60%
3	Market information	Woman more involved than man	25%	10%	45%
		Man more involved than woman	85%	90%	55%
4	The adoption of certain type of crop	Women more involved than men	20%	15%	35%
		Men more involved than women	80%	85%	65%
5	Having heard about AEC		35%	30%	50%
	• Social media		100%	80%	65%
	• NGO and Development project		0%	0%	0%
	• Local authority • (village & com. level)		15%	0%	20%
	• Neighbour /Relative		10%	20%	35%
	• Gov't officer (from district to the national level)		0%	0%	5%

Those interviewed in Chumkiri often brought up the benefits from AEC integration (particularly the reduction of costs in cross-border movement for job opportunities). It was also noted that, foreign investment is seen to create more job opportunities, and to allow children to work in the country. Interestingly, farmers in Santuk and O'Yadav could not see these advantages from AEC.

5.4. Access to financial resources

In terms of loan access from formal financing institutions, half of the interviewed families in Santuk, 60 percent in O'Yadav and 90 percent in Chumkiri have obtained loans. The average loan size ranks from 700USD to 1,500USD. In Santuk and O'Yadav, loans are mainly used for non-rice crops, particularly cassava and cashew nut and for food consumption during food shortage, particularly from August to November before the harvest of rice and cassava. Instead, in Chumkiri, loans are used for doing job related migration and agricultural inputs.

The interviewed families that accessed loans from relatives or moneylenders are few in Santuk. In Chumkiri, about 70 percent of the interviewed families buy agricultural inputs, particularly chemical fertilizers on credit while in O'Yadav 20 percent of the interviewed families have obtained loans for farming and food consumption during food shortage. Accessing loans from private moneylenders is still a common practice in O'Yadav due to its flexibility of loan repayment. It is noticed that in Khmer communities, women have played an important role in approaching loans, taking loans, holding money to pay back loans, while in indigenous communities, men are the main actors in these activities.

Table 12: Access to financial resources on the interviewed households in 2016

No	Sources of finance		Santuk	O'Yadav	Chumkiri
A.	MFI/Bank				
1	Households access loan from MFI or Bank		50%	60%	90%
2	Amount of loan per household (USD)		700	1,000	1,500
3	Main person to approach loan?	Male	40%	70%	35%
		Female	60%	30%	65%

4	Main decision maker to take loan?	Male	48%	80%	48%
		Female	52%	20%	52%
5	Main responsible person to earn income to repay loan?	Male	55%	80%	65%
		Female	45%	20%	35%
6	Holding loan from institution/lender	Male	55%	85%	10%
		Female	45%	15%	90%
7	Holding money to repay loan	Male	55%	85%	15%
		Female	45%	15%	85%
B.	Relative (no interest rate)				
1	Households access loan from relative		15%	5%	5%
2	Amount of loan per household (USD)		100	50	50
3	Main person to approach loan?	Male	30%	50%	0%
		Female	70%	50%	100%
4	Main decision maker to take loan?	Male	40%	100%	0%
		Female	60%	0%	100%
5	Main responsible person to earn	Male	40%	100%	50%

	income to repay loan?				
		Female	60%	0%	50%
6	Holding loan from institution/lender	Male	40%	100%	0%
		Female	60%	0%	100%
7	Holding money to repay loan	Male	40%	100%	0%
		Female	60%	0%	100%
C	Private money lender				
1	Households access loan from money lender		7%	20%	75%
2	Amount of loan per household (USD)		500	1,000	500
3	Main person to approach loan?	Male	0%	100%	0%
		Female	100%	0%	100%
4	Main decision maker to take loan?	Male	25%	100%	0%
		Female	75%	0%	100%
5	Main responsible person to earn income to repay loan?	Male	100%	50%	100%
		Female	0%	50%	0%
6	Holding loan from	Male	0%	100%	0%

	institution/lender				
		Female	100%	0%	100%
7	Holding money to repay loan	Male	0%	100%	0%
		Female	100%	0%	100%

VI. Opportunities, challenges and capacity needed of small landholder farmers toward ASEAN Economic Community (AEC)

6.1. Key opportunities

Road infrastructure and transportation service are in place: With the efforts of the Royal Government of Cambodia from the first to the fourth mandates¹, national roads and provincial roads are in place and improved. By 2013, national roads have reached 11,292 Km with 10,819.69 Km of Provincial road. Furthermore, the Cambodian railways reached 650 Km with two tracks (NIS, 2015).

In O'Yadav and Chumkiri, road infrastructures are classified as in good condition. In Santuk, the villages' roads were classified as in moderate condition. In some villages, traveling by motorbike and vehicle is a bit difficult during the rainy season.

Tele-communication networks are in place: Under the Ministry of Post and Telecommunication, more national and international telecommunication companies under joint ventures are in place with competitive low call cost. News from different social medias such as radio, TV, etc. is also available. Mobile phones at affordable prices gradually allow people making connection with each other better. By 2011 there were about 16.2 million mobile phones. The current number is double that of 2010 (NIS, 2015). The development of

¹ Frist mandate: 1993-1998, second mandate: 1998-2003, third mandate: 2003-2008 and fourth mandate: 2008-2013

telecommunication has helped farmers in decision-making. Before selling their harvests, farmers can check selling price in different buying station.

Market systems and infrastructure are in place: In these study areas, local collectors and traders are in place. Most farmers check the price with one or two middlemen/traders before selling their produce. In Santuk, trading schemes with cassava production have shifted from trading in the village to buying stations, which can hold more produce. By using these market arrangements, each station can collect hundreds of tons of both dry and fresh cassava for export. With cashew nuts, there are many middlemen engaged in the village before the produce is transported to traders or to the Cambodian-Vietnam border. Similarities are found with the study areas in Chumkiri and O'Yadav provinces.

Non-farm job opportunities for supplementing household incomes: Opportunities for generating extra incomes, from non-farming activities inside and outside the study area, give another breath for local economy. In Santuk, women have more opportunities to earn an extra income in the city, while men mainly work in the farms in their local area. Most men can sell labour at the farms of better-off families and at the economic land concession companies. In Chumkiri, extra income opportunities of selling labour at a farm is very limited. Both men and women do cross-border outmigration for income opportunities and head to the cities for wage work in garment factories and construction work.

Income from non-farm jobs has currently largely contributed to the household economy and to sustain agricultural production. Job migration provides family members extra income.

Table 13: Summary of the assessment on key opportunities for small landholder farmers

No	Description items	Santuk	O'Yadav	Chumkiri
1	Rural road infrastructure and transportation service are in place	Moderate	Good	Good
2	Tele-communication networks are in place	Good	Very good	Very good
3	Market systems and infrastructure are in place	Moderate	Good	Good
4	Non-farm job opportunities for supplementing to household incomes	Good	Good	Very good

6.2. Key challenges and constraints

Inadequate access to agricultural land and water for irrigation: In Chumkiri, the average land size is smaller than the two other study areas. Also, unlike in the other two cases, rice production is mainly dependent on rainfalls. Rice production this year is much lower than that of the previous years and the cost of production has increased due to the long drought. This particular climate shock caused an increase in the cost of production for rice farming. In response, yellow corn has recently been adopted by some families in the study area.

In Chumkiri, renting land for farming is difficult, since families only have small piece of land. Thus, some farmers rent land in other areas or outside their provinces. This trend is also the case in Santuk and O'Yadav. In these two provinces, buying or renting land is still possible. However, land prices have been increasing from year to year. The average rental rates per hectare per year is 200 USD in Santuk and 300 USD in O'Yadav.

Market price fluctuation for selling agricultural products: Main commodities such as paddy rice, chicken, pig and yellow corn in Chumkiri, cassava and cashew nut in Santuk and O'Yadav are traded from the farm gates and villages to other areas. The selling price of produce fluctuate over time, while the cost of inputs are continuously increasing. In Santuk, the buying price of cassava fluctuate between day, which can cause challenges for subsistence farmers. In O'Yadav, there are many middlemen/traders during the harvesting season of cassava and cashew nut, but buying prices among individual middleman/trader are not remarkably different.

Demand of capital to invest in agriculture production: Accessing credit for agricultural production is no longer difficult. Many MFIs/banks are available upon need. Land titles are commonly used as collateral to get loans. In Santuk and Chumkiri where land titles are not available for some families, group loans with 3 to 5 members have become normal. Each member can receive up to 500USD. In terms of the production cycle, MFI/banks have facilitated loans with a maximum duration to fit the production cycle. Farmers only pay monthly interests to the bank/MFI, and pay the loan principle by the harvesting season. It is found that the monthly interest rate ranges from 1.2 to 3.5 percent per month.

In general, farmers are forced to sell their produce directly after harvest or even before the harvest. This is due to the fact that loan collection begins during the harvest season. A failure to harvest often forces farmers to take out a second loan

from another loan source mainly from private moneylenders, in order to pay back the primary loan.

In Chumkiri, a bag of chemical fertilizer costs 120,000KHR when farmers buy it with cash in hand. However, most farmers buy it on credit within a cycle of a rice production at the cost of 150,000KHR plus 30kg of paddy rice. The margin of 30,000KHR and 30Kg of paddy rice are the interest charged by the sellers.

In Santuk and O'Yadav, farmers took an average loan of 1,000USD from private moneylenders. The interest payments together with the loan principle is made at the cassava harvest season. Within a cycle of the production, around 10 months, farmers are subjected to pay the moneylenders a total sum of 1,400USD.

Quality agricultural inputs: seed, fertilizer and pesticide: In term of seeds, it is found that farmers in Chumkiri have adopted the improved rice seed, as recommended by MAFF, while a yellow corn seed was introduced by the seed companies. In Santuk, farmers adopted the improved cassava or cashew nut seeds mainly from seedling suppliers, which originated primarily from the Kampong Cham province. Fertilizer and pesticide are mainly purchased from local markets. In Santuk, as driven by market demand, the improved varieties of cashew nut has been adopted. The better-off families could have accesses to the improved seedlings such as the M23 or M21, while the poor farmers could not afford and still adopt local variety. In O'Yadav, both the traditional variety and the modern variety of cashew nut are adopted.

Access to agricultural techniques in the three study areas is found to be different from one study area to another. In Chumkiri, access to the production techniques came mainly from the PDA officers through donor funded project and development NGOs, while farmers in Santuk district the production techniques mainly from local immigrants from the nearby province; namely the Kampong Cham. In O'Yadav, the adoption of a certain type of crop is driven by the market demand but also influenced by immigrants.

In Chumkiri, production techniques for yellow corn have been made available by seed supply companies. Facing climate shock last year, farmers shifted from transplanting rice to direct seeding after their first seedling was destroyed by drought. Access to the documents/manuals for proper implementation is very limited. Farmers adopt certain types of crops or inputs without knowing their effectiveness and what the future impacts of these practices will be. Thus it could be concluded that the access to agricultural techniques is still problematic.

Table 14: Summary of the assessment on key challenges and constraints for small landholder farmers

No	Description items	Santuk	O'Yadav	Chumkiri
1	Access to agricultural land and water for irrigation	Poor	Poor	Moderate
2	Access to market for selling agricultural products	Good	Good	Moderate
3	Access to capital to invest in agriculture production	Good	Good	Good
4	Access to quality agricultural inputs (seed, fertilizer, pesticide) and techniques	Moderate	Moderate	Moderate

6.3. *Capacity needed*

To be able to improve the agriculture-based livelihoods, the following capacities are needed:

Self-mobilization and organizing agriculture cooperative: The purpose of the mobilization of small landholder farmers will not only be for market access, but also to increase the agricultural productivity through collective actions. In O'Yadav, saving groups are introduced in all study villages. In Chumkiri, the cooperatives already operated under a saving and credit program, particularly for the investment in agricultural production. These cooperatives are under the technical and the financial support of the development project of NGO's and the collaboration between NGO's and PDA.

Technical knowledge of good agricultural practices: Technical capacities on seed selection, soil fertility management, appropriate input used, not only improve the productivity of land but also shape production sustainability. In Chumkiri, people have adopted yellow corn on new clear land close to the mountains. Seeds have been introduced by the seed company, but techniques in growing and managing the crop comes mainly from people who have had experience from working outside the province in combination with their current practice in white corn production. The use of chemical inputs such as fertilizers and pesticides are observed without realizing the current and future impacts on quality of the produce and land fertility.

Establishment of self-supplied food production systems: Developing a self-supplied food production system is to ensure food safety and food sovereignty for families through diversified sources of productions and incomes. However, such a system has not been observed in the three study areas. The movement to the annual and perennial industrial crops, such as cassava or cashew nut, which is

generally driven by market demands, turns farmers to a mono-cultural practice. Many farmers currently find themselves dependent on market purchased food crops.

In Chumkiri, farmers are more diversified than farmers in the other two study areas. Rice production, yellow and white corn planting, harvesting fish, vegetable, coconut, and livestock raising, as well as job migration for complementary income have been observed more in Chumkiri than in the other two study areas.

Financial literacy and family cash flow: The management and effective uses of income to finance family development plans and household expenses as well as the creation of constant income are of importance. In the emergence of commercial agriculture, farmers have made moves away from production in order to feed their family to producing commercial cash crops, especially those driven by the market demand.

In Santuk and O'Yadav, farmers tend to focus mainly on cassava production. Those, farmers who can afford it seem to be moving towards cashew crop plantation. In O'Yadav, the Chamkar rice production has almost disappeared, and has been replaced by annual and perennial cash crops, such as cassava and cashew nut. Farmers make a bulk of their income from their production in a single lump sum, which is often spent immediately. This kind of practice regularly forces farmers into financial shortages. Then, they often take out loans, causing them to fall into a cycle of loans and interest payments. Thus, financial literacy capacity and the management of cash flows are much needed.

Table 15: Summary of the assessment on key capacity needed for small landholder farmers

No	Description items	Santuk	O'Yadav	Chumkiri
1	Self-mobilization and organizing agriculture cooperative	Highly needed	Highly needed	Highly needed
2	Technical knowledge with good agriculture practices	Needed	Needed	Needed
3	Establishment of sustainable food production systems	Highly needed	Highly needed	Highly needed
4	Financial literacy and management of family cash flow	Needed	Needed	Needed

VII. Development issues and its implication for small landholders

It is important to raise these development issues and potential policy changes both for its impact on small landholders and for general awareness. Academic literature, grey literature and key stakeholder opinions are elaborated in this section. Particularly, it builds its argument on the appropriateness and suitability for small landholders and large landholders.

7.1. Land title vs tenure security

In the lowland areas, collective farming was adopted during 1980s after the Khmer Rouge Regime. After its fall, in the late 80's individual property was adopted. A certificate of land allocation was provided by local authorities; most often the authority at the commune level. Land administration in upland and forested areas was still not properly managed at that time, particularly between farming lands and forested lands. Land allocation in upland and forested areas was not implemented until 2012, when order 01BB for land conflict resolution was issued.

In upland and forested areas, land use in indigenous communities was practiced according to their customary tenure, which divided into farming land, burial land, water conservation land, reserved land and fellow land etc., Customary land tenure was fully recognized in the 2001 land law, but in practice, the rights of indigenous community to claim customary tenure was very rarely accomplished. In contrast, sub-decree on ELC was issued in 2005 and actively implemented during 2000 to 2010. This has caused massive conflicts in the country; particularly ELC clearly violates the customary rights of indigenous peoples as mentioned in the 2001 land law.

In addition, if the landholders could claim that they have held and used a plot land since 2001, they have the right to claim ownership of that land. Antedated documents of land transfer were legitimated for land ownership despite the 2001 land law. Customary land used by indigenous people was subjected to seizure, because these peoples technically have no legal documents proving their ownership. In resolving land conflicts, outsiders who could provide evidences of landholding through land sale and other land transaction documents often win the conflict cases, both through alternative dispute resolution or court system resolution. The land conflict in early 2010 in upland communities, customary land tenure was not discussed or raised. As a result, indigenous communities

could receive only the plots that they were using during the student mission for land conflict resolution (Order 01BB) but not their reserved lands.

From 2001 to 2012, the politics of land occupations and land grabbing had involved by different actors from different levels: local, meso and national levels as well as international. As a result, local people who lived in upland or forested areas, who owned an abundance of land in the past now face land scarcity now. Efforts for customary land tenure in Cambodia were almost completely finished after the implementation of Order 01BB. Order 01BB allowed landholders or land users to claim land titles individually. On one hand, Order 01BB indirectly encouraged indigenous community people to adopt the individual ownership of land, and on the other hand, it discouraged indigenous people to adopt communal land titles. This has largely changed the practices of land governance in the indigenous communities.

Therefore, the issues of land security is still serious, particularly small landholder farmers is an exposed group due to a lack of land security. A case study from Santuk district, Kampong Thom showed such insecurity for people holding communal land without official recognition. This has slowdown the development of communal agriculture. A case study of O'Yadav, Rattanakiri shows how indigenous people have transitioned from plenty of lands to land scarcity.

7.2. Large and medium scale irrigation vs small and micro irrigation

Since rice farming in Cambodia has traditionally been dependent on rainfall rather than irrigation, rainfall distribution determines the success and size of the harvest (Wokker et al., 2011). Due to a belief that this production scenario holds significant potential for yield gains through the provision of irrigation water, the government has been investing heavily in developing the country's irrigation infrastructure over that past two decades. Statistics from MoWRAM indicate that, by 2010, 1,120,246 hectares (dry season: 347,058 ha; wet season: 773,188 ha) were irrigated, accounting for approximately 43 percent of the total rice cultivated land area (CDRI 2010). This has involved the rehabilitation of many existing irrigation schemes with financial support from external donors and aid agencies (Thuon et al., 2007).

The Strategy for Agriculture and Water aims at poverty reduction, improvement of food security and sustainable economic growth. So far, it has focused on large and medium scale schemes, which mainly target rice production for export. The Cambodian government, in its efforts to achieve poverty reduction and economic

growth, has positioned agricultural and rural development as a priority sector. The relevance of agriculture, to such a priority, is that over 80% of Cambodia's population still lives in rural areas and draw their livelihoods from agriculture.

- Small-scale irrigation (service area < 200 ha): the system is managed by the District Office of Water Resources and Meteorology (WRAM) or by PDoWRAM, if it is in more than one district; it is operated and maintained by the beneficiaries under WRAM supervision.
- Medium-scale irrigation (service area 200-5,000 ha): the system is managed by PDoWRAM or by the Ministry of Water Resources and Meteorology (MoWRAM), if it is in more than one province. It is maintained by the PDoWRAM in cooperation with users and is repaired by MoWRAM.
- Large-scale irrigation (> 5,000 ha): the system is managed and maintained by MoWRAM.

Source: CDRI 2008.

So far, the progress made has been acknowledged as good, but with the caveat that more is needed. According to the AEC Blueprint, NSDP and ASSDP, commercialization and diversification of agriculture has shaped Cambodian agriculture from rice based to non-rice-based cropping for attracting better market value and improving livelihood. Vegetable farming in lowland areas, particularly in dry season, faces water shortages and lacks access to water from irrigation schemes. No policy or promotion of micro-irrigation for individual ponds or community ponds exists at this time. National Farmer Forum 2016 raised the importance of micro-irrigation schemes that farmers could access for improving homestead-based.

Non-rice cash crop production is also facing water shortages or irrigation scheme. Better-off families have invested in developing individual irrigation schemes by diverting watersheds or mountain valleys to be their private reservoir. On one hand, this changes the micro-environment and cause more water scarcity, while also creating a negative impact on poor households who depend on water for domestic consumption. On the other hand, it is clearly social unjust to seize common water and convert it to exclusively private ownership. Developing micro-irrigation schemes and better governance of natural water bodies and community water bodies is crucial to maintain local food security and local economic development.

7.3. *Foreign direct investment vs local direct investment*

Free flow of investment from ASEAN countries is one of the AEC Pillar. It is expected that Cambodia will receive foreign direct investments to boost its national economy create jobs for the Cambodian workforce. So far, more than one million ha of land has been granted to private companies, including foreign companies, which were expected to create jobs for rural youth, but instead has created a numbers of land conflicts with the rural community people. In addition, many companies were not able to employ nearly as many people as their originally promised upon being given the land.

In May 2012, the Prime Minister issued Order 01BB to suspend the approval of new ELCs and called for the review of existing ELCs². According to Order 01BB, ELCs that do not in compliance with law, their contracts will be seized (Royal Government of Cambodia, 2012). In July 2015, the Ministry of Environment announced that 16 ELCs were under review, and those with lease durations greater than 70 years were reduced to 50 years (Taing Vida., 2015).

In contrast, small rice farmers under the support of Farmer and Nature Net (FNN) and Cambodian Centre for Study and Development in Agriculture (CEDAC) have mobilized their own resources to invest in rice mill facilities with international standards for exporting milled rice to foreign countries. So far 7 rice mills have been created. It is to note that CEDAC has facilitated meetings with FA and AC leaders from 60 districts of FNN to establish rice mill cooperatives. The set rules state that number of rice mills will be established based on amount of the capital mobilized in each district. Furthermore, any district cooperative that can mobilize the most funds from its members will be given priority to receive grants to assist in the creation of a rice mill in their district. Profits obtained from the rice mills business are shared among the 60 district cooperative members according to their buy in.

Therefore, it is very crucial to support the role of small landholder farmers in agricultural development as well as their part in expanding and sustaining growth on a national level. At this stage, government agencies, particularly the GDA, provide legal frameworks, such as law on agriculture cooperative and

² Im Chhun Lim (2012), Speech of H.E. Im Chhun Lim, Senior Minister and Minister of Land Management, Urban Planning and Construction and Chairman of Council for Land Policy, 19th Meeting of the Government-Development Partner Coordination Committee, Phnom Penh, 26 September 2012.

sub decree on contract farming, to farmers to establish agriculture cooperatives and improve the agricultural business. Five 556 agricultural cooperatives have been formed and are currently functioning³. Currently, the GDA is in the process of developing two key training materials: 1) Training of Agriculture Cooperative Trainers, 2) Training materials to build the capacity of agriculture cooperatives. The GDA plans to set up commune training centres in all communes in Cambodia, and to equip them with two AC trainers/facilitators per commune to provide services related to agricultural cooperatives throughout the country.

7.4. Agricultural techniques and market

As mentioned in the NDSP 2014-2018, modernization means a way to improve the productivity through increasing use of mechanical tools, irrigation, improved seeds, the use of chemical inputs and improved technical practices. So far, farmers have adopted the mechanical tools, such as tractors for ploughing and transporting the produce and inputs to the farms. Therefore, it could make agriculture require less manual labour. Government has provided the legal support and procedure in importing agriculture inputs such as fertilizers, hormones, pesticides, seeds and also tools such as tractors and pesticide sprayers etc. Currently with internet access, many technical booklets or short video clips on agriculture are available. However, these tools benefit educated farmers without proving any support for those who either lack the education or the technical infrastructure to access these materials.

National key informants have shared ideas of a complex system of support for small landholder, which includes both challenges and prospects. Technical support would help them to improve the agricultural productivities. Linking farmers with markets to commercialize their produce is another, but requires regulating supply patterns in order to ensure that farmers are getting ongoing benefits from their agriculture production.

It is believed that in order to increase production and maintain benefits, linking farmers to markets should be extended from local markets to urban markets, and then to export markets. In doing so, not only the volume of sales needs to be increased, but the requirement for quality and specification of the products needs to be ensured. Producers have to respect business rules such as quantity, timing of supply, quality and specification requirements.

³ Workshop: Cambodia's Agricultural Sector: Readiness for ASEAN Economic Community 2015 and Beyond; Sokha Hotel, Phnom Penh, March 24, 2015

Linking farmers to markets became a “fashionable” topic of interest in development after the release of the World Development Report in 2008. The report highlighted that in order to reduce poverty in developing countries; it was needed to link farmers to markets. Since that time, many development projects try to explicitly include the, “linking farmers to markets”, in their projects. However, to be successful in linking farmers to markets requires a strategic design. The selection of the commodity to introduce into the market is a key aspect of any strategy for entering into any market.

Two market approaches are observed in the literature: Global chain and *Filière* approaches.

Filière approach: The *Filière* approach was developed by researchers from the *Institut National de la Recherche Agronomique* (INRA) and the *Centre de Coopération Internationale en Recherche Agronomique pour le Développement* (CIRAD). The *Filière* approach has its origin in technocratic agricultural research. This approach focuses on local production systems and how these are affected by public institutions (Raikes et al., 2000). For example, when a government signs a deal to export a large amount of a specified agricultural commodity, it needs to ensure the delivery of the products. Therefore, most large producers will engage to produce exportable commodities and volumes. In addition, the *Filière* analysis integrates social network theory for a comprehensive approach of social relations and transactions. This market approach also attempts to build strong social relations within a group of producers for cross-checking, and also with consumers to build trust around the producer, in order to get a higher market price than the ordinary produce.

So far, CEDAC has successfully promoted organic rice production because they set a guaranteed price, and agree to buy a specific volume of product for processing and supplying to both local markets and export markets. In addition, the Cambodian Institute for Research and Rural Development (CIRD) has worked with pepper producers and organized a producer group following the *Filière* approach. They managed to get a Protection of Geographical Indication (PGI) for Kampot Pepper. Kampot Pepper has a good reputation in both local and export markets, particularly in Europe. From this reputation, the exporter has approached the producer groups of Kampot Pepper, and established a contract for export markets.

Global chain approach: The Global chain approach was developed by Gary Gereffi and others within a political economy of development perspective

(Gereffi, 1999). Global chain analysis has been developed primarily for industrial commodity chains (Raikes et al., 2000). They focus on the emergence of a new global manufacturing system in which economic integration goes beyond international trade in raw materials and final products (Gereffi, 2000). Today, cassava produced in Cambodia are exported to Vietnam. This is one example of a global chain approach. To meet the demand-driven nature of the cassava industry, producers in Cambodia grow cassava to supply the markets. However, due to the lack of coordination and application of state regulation among relevant bodies, producers often lack negotiating power and fail to make money due to an over-supplied market creating a low selling price. This is also due to the fact that cassava cannot be returned to local markets for domestic consumption, if it is not exported.

To benefit small landholder farmers, *fiiere* approach should be promoted at early stages. Then, the combination of the two approaches should be implemented. CEDAC has worked by combining the two market approaches in its interventions on rice commodity, known as organic rice market. In the beginning organic rice producer groups are organized at the village level, and then combined at the commune level, district, provincial and national levels. Organic rice has several market destinations, either the local urban markets or the export markets. CEDAC Enterprise buys organic paddy from rice producers, and mills it to sell to urban consumers. This is known as the *Filière* approach. In addition, CEDAC also plays a role as an intermediate to coordinated with export companies to export organic rice to foreign markets e.g. EU and the US. In this case, organic rice exporters make a contract with CEDAC for a certain amount of organic rice. CEDAC coordinates with farmers to produce organic rice to meet export needs. A set demand for organic rice is agreed by the export markets or buyer, who then works with a local company, (CEDAC Enterprise), and this is known as the Global chain approach. It sounds like a promising approach for Cambodia to support small landholders to benefit from local, regional and global markets.

VIII. Conclusion and recommendations

In reflection to the analysis of the development issues and its implications for the small landholder farmers to be ready for the AEC integration and to be competed with other farmers in the ASEAN member countries, Cambodian small landholder farmers should have land security on tenure, water for irrigation, capital for investment, technical inputs for improving the agricultural

productivities and market governance structure for commercialization of their production. Therefore, the study would like to conclude and recommend that:

Security on access to land tenure: Land tenure security in a rainfed lowland area is generally good, while land security in upland area or forest area has been largely improved since the implementation of the order 01BB, particularly in the indigenous communities like above cases in Rattanakiri. However, land security for community people in formerly forested area is still an issue. Farmers have the right to use land and transfer of lands by buying and selling it, but so far their lands are not officially recognized as private property yet, for example the cases of Santuk, Kampong Thom province. Farmers hesitate to invest in their lands, particularly for perennial crops, since it requires large investment, but it also provides large returns as well.

Therefore, the study would like to recommend, to the Royal Government of Cambodia, that implementation of order 01BB be reviewed and revaluated in order to expanding its reach of the continuation of land resolution missions to the rest of the country. Many farmers are still waiting to be granted their land titles from the government.

Security on access to water for irrigation: Since the second mandate of the Royal Government of Cambodia, most investment has been for irrigation, mostly medium and large-scale irrigation schemes. However, irrigation facilities are mainly equipped for rice farming or for non-rice farming in the rice farming ecosystem. Due to the changing context, farmers have adopted non-rice crops and livestock farming. The demands for water access in non-rice farming ecosystem have noticeable increased. In order to develop sustainable food production system at the household level and to achieve food security in the rural area, micro-scale irrigation schemes are needed.

Therefore, the study would like to recommend to the Royal Government of Cambodia to consider investing in micro-scale irrigation in the drought prone areas.

Security on access to capital for investment: During the last three mandates of the royal government of Cambodia, financing systems have largely improved and reached all over the country. Many rural families have acknowledged having access to loans from MFI or banks. In addition, an example from CEDAC and FNN, farmers have mobilized themselves to create village associations, which

assist with small savings accounts and lending. Gradually, village saving associations have joined together to form a commune saving association and likewise a district saving association. From the existing 60 districts saving association, farmers have invested capital and built district mills with export standards capability. Seven district rice mills have also been built and equipped with milling facilities. However, in order to create sixty district rice mills, a greater emphasis on collective savings is needed.

Therefore, the study would like to recommend the Royal Government of Cambodia to consider to provide financial support [loans] to the established district savings associations so that they could speed up community development.

Security on access to technical knowledge and facilitation support: There are technical innovations being made at the national level and provincial level. Through the development projects implemented by government institutions and/ NGOs, farmers, on the local level have been able to adopt these new technical practices as well as new varieties of crops. Beside the technical services provided by these projects, private enterprises have played a role in delivering technical knowledge. However, it is often still the case that farmers fail to harvest their agricultural productions due to the technical errors, mis-practices or simple produced too low a yield. It is also to note that now farmers are aware of the importance of adopting new techniques or varieties in order to take advantages of markets demands, but may lack some of the necessary tools. This can cause a delay in the adaptation of new technical innovations. General Directorate of Agriculture plans to set up agriculture cooperatives and technical service support centers in all communes the country. These centers will be equipped with two technical staff to service farmers.

Therefore, the study would like to recommend to the Royal Government of Cambodia that speeding up this initiative would only aid their desired outcomes. In addition, the government should invest more in technical agricultural research targeted at benefiting the agricultural productivity of small landholder farmers.

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Annex 1: List of Key informants

No	Name of Key Informants	Position/Role
1	The Chhun Hak	Deputy General Director Gender Equality and Economic Development
2	H.E. Thong Chenda	Notary Public and Managing Partner
3	Dr. Sok Silo	Deputy Secretary General, COuncil for Agriculture and Rural Development
4	Dr. Yang Saing Koma	Former CEDAC's President
5	Dr. Sam Inn	Former Executive Director of LWD
6	Kan Salorn	Deputy Director of Agriculture Department, Kampong Thom Province
7	Ngin Chhay	Director of Rice Department, General Directorate of Agriculture
8	Chou Chey Thyrieth	FAO-IPM Cambodia
9	Sar San Phirom	Freelance Consultant
10	Sours Sokha	Former Program Manager of Sre Khmer, Freelance Consultant
11	Eung Seng	Former CEDAC M&E Officer, Freelance Consultant
12	Ann Kimheng	Researcher in Agri-Business, Centre for Policy Study (CPS)
13	Heng Chhunhy	Deputy Director of Crop Protection, General Directorate of Agriculture
14	Keam Makarady	Program Director of Environment and Health, CEDAC
10	Chan Sophal	Executive Director, Centre for Policy Study (CPS)
11	Jean-Christophe Diepart	Research consultant, Mekong Region Land Governance (MRLG)
12	Ung Dararoath Moni	Former UNDP/IFAD Advisor, Cambodia and Freelance consultant
13	Thun Vattana	Direct of Prek Lap School of Agriculture n
14	Ngin Chanrith	Lecturer of Development Study Department, RUPP
15	Am Sokha	Conflict Investigator Advisor, ADHOC
16	Soy Sona	Director of Agriculture Department of Rattanakiri
17	Beng Bunnet	Vice Dean of Land Administration Department, RUA

The NGO Forum on Cambodia

Address: #9-11 Street 476 Sangkat Toul Tompoung 1,
Khan Chamkar Morn, Phnom Penh City, Cambodia.

P.O Box: 2295 Phnom Penh-3

Tel: (855-23) 214 429

Fax: (855-23) 994 063

E-mail: ngoforum@ngoforum.org.kh

Website: www.ngoforum.org.kh