

Kingdom of Cambodia

Nation Religion King

Ministry of Agriculture, Forestry and Fisheries



Agricultural Sector Strategic Development Plan 2014-2018

May 2015

PREFACE

The Royal Government of Cambodia (RGC) has fully made more efforts to accelerate the implementation of “***Rectangular Strategy Phase-II***” and has successfully achieved fruitful results, under the strong and ideal leadership of **Samdech Akka Moha Sena Padei Techo HUN SEN, Prime Minister of the Kingdom of Cambodia**. In this fifth mandate, the RGC promulgated the “***Rectangular Strategy Phase-III***” and “***National Strategic Development Plan 2014-2018***” and still considered the agricultural sector as the priority sector by clearly identifying that the enhancement of agricultural productivity, diversification and commercialization, the land reforming, the sustainable management of natural resources, notably forestry and fisheries resources, are the fundamental areas to accelerate the economic growth and poverty reduction of the Cambodian population. The RGC vision is to modernize agriculture sector through the new approaches which could be transformed the “extensive” to “intensive” farming by focusing more on the appropriate technology application, research and development, farm mechanization, irrigation expansion, agricultural land use management etc.

Therefore, in order to achieve the vision for agricultural sector development in this fifth mandate, the Ministry of Agriculture, Forestry and Fisheries (MAFF) defined a strategic policy goal which intends to “increase the agricultural growth around 5% per annum through the enhancement of agricultural productivity, diversification and commercialization, the promotion of livestock farming and aquaculture, with high consideration of sustainable forestry and fisheries resource management”.

To implement and achieve the defined RGC’s policy goal and direction, the Ministry of Agriculture, Forestry and Fisheries prepared the Agricultural Sector Strategic Development Plan (ASDP) 2014-2018 which is considered as an important milestone in giving the MAFF’s direction and actions for medium-term implementation to accelerate the agricultural sector development. This document has been identified and examined the prioritized areas of agricultural sector development which will represent the MAFF development goals, objectives, outcomes, outputs and activities to be implemented during a 5-years period, 2014-2018.

It is noted that, the Agricultural Sector Strategic Development Plan 2014-2018 was prepared in accordance with the RGC’s policy goals as defined in Rectangular Strategy Phase-III and the National Strategic Development Plan (NSDP), 2014-2018 which will contribute and enable to achieve the economic development policy goal and aligns with the development policy and framework in the fifth mandate of the Royal Government of Cambodia.

Furthermore, the Agricultural Sector Strategic Development Plan 2014-2018 was also prepared basically in line with the RGC’s Policy Paper on “***The promotion of paddy production and rice export***” which was promulgated on 17th August, 2010 by the Royal Government of

Cambodia and relevant documents for the agricultural sector development, in the aim of transforming Cambodia to be a leading rice exporting country in the region.

To realize all the policy goals as mentioned above, the relevant and necessary actions will have to be implemented and achieved. All technical line departments and agencies under MAFF involved in sub-sector development were requested to actively implement the activities set in this Agricultural Sector Strategic Development Plan 2014-2018.

The Ministry of Agriculture, Forestry and Fisheries strongly committed to implement the Rectangular Strategy Phase-III and National Strategic Development Plan 2014-2018 through executing its defined actions stipulated in the Agricultural Sector Strategic Development Plan. With the increase of domestic financial support and the external assistance from development partners, as well as the involvement of concerned stakeholders in speeding up the implementation of this Strategic Plan, the fruitful results will be made with efficient and effective manners.

On behalf of the Ministry of Agriculture, Forestry and Fisheries, I would like to convey to all relevant and concerned Ministries and institutions at all levels to participate and cooperate in the implementation of this Plan, and also appeal to international communities to provide further supports, both financial and technical assistance, for successful and efficient implementation of the Agricultural Sector Strategic Development Plan 2014-2018.

I would also like to sincerely thank to the management of Ministry of Agriculture, Forestry and Fisheries, all staffs at all levels and concerned stakeholders who actively involved in the formulation process and committed to fully implement the Agricultural Sector Strategic Development Plan, 2014-2018 for achieving the poverty reduction and development of future Cambodia.

Phnom Penh, 2015

Minister

Table of Contents

Page No.

PREFACE

PART- I

ACHIEVEMENTS AND CHALLENGES IN THE IMPLEMENTATION OF AGRICULTURAL SECTOR STRATEGIC DEVELOPMENT PLAN (2009-2013)

I. Introduction.....	5
II. Achievements and Main Challenges in the Implementation of Agricultural Sector Strategic Development Plan (2009-2013)	
A. General Situation.....	6
B. Achievements and Agricultural Development by Sub-Sector.....	7
Enabling Environment	
- Producer organization and extension services	
- Sanitary and phyto-sanitary (SPS) standard and capacity, export and trade facilitation	
(1). Enhancement of Agricultural Productivity and Diversification.....	9
Common factor: land availability, irrigation, land reform and private sector investment	
1.1. Rice Production.....	10
1.2. Subsidiary and Industrial Crops.....	13
(2). Rubber Production.....	14
2.1. Rubber Development.....	14
2.2. Rubber Production.....	15
(3). Animal Health and Production.....	15
(4). Fisheries Exploitation and Reform.....	17
(5). Forestry Reform.....	19
(6). Supporting Services.....	21
C. Assessment and Conclusion.....	22
(1). Strengths, Constraints and Challenges.....	22
(2). Conclusion.....	25

PART – II

AGRICULTURAL SECTOR STRATEGIC DEVELOPMENT PLAN, 2014-2018

I. Agriculture Sector Strategic Development Plan, 2014-2018.....	27
A. Background.....	27
B. Vision.....	29
C. Mission.....	29
D. Policy Goal for Agricultural Development.....	29
E. Five Programmes for MAFF.....	31
F. Sub-Programs and Action Plans by Sub-Sectors.....	39
G. Strategic Framework for Cross Cutting Issues.....	86
H. Budget Plan.....	97
I. Monitoring and Evaluation.....	98
J. Conclusion.....	99

Annexes

-Annex: 1 Table of Indicators in NSDP, 2014-2018

-Annex: 2 Matrix of priority action plan for implementation of ASDP, 2014-2018

PART- I

ACHIEVEMENTS AND CHALLENGES IN THE IMPLEMENTATION OF AGRICULTURAL SECTOR STRATEGIC DEVELOPMENT PLAN (2009-2013)

I- INTRODUCTION

Agriculture is the foundation of the Cambodian economy. About 80% of the population lives in rural areas and agriculture provides food for daily living, raw materials for agro-industry, and over 30% of GDP from agricultural production and export.

The Royal Government of Cambodia (RGC) gives agriculture a prominent place in its Rectangular Strategy and a high priority in its national development agenda. The RGC expects agricultural development to continue to deliver poverty reduction, through food security, increasing household incomes and job creation, and to contribute to economic growth and macro-economic stability. The sector has received increasing RGC support in terms of policy direction and financing.

The Agricultural Sector Strategic Development Plan 2009-2013 followed the RGC's National Strategic Development Plan 2009-2013 and the Rectangular Strategy Phase-II. Presently, the agricultural sector has been supported through the improvement of irrigation, dissemination of new technology and other endeavors, especially agricultural research and development to adapt to climate change. In this connection, the RGC has strengthened the cooperation with development partners in order to mobilize funds and increase resources for promoting and enhancing agricultural productivity.

The Agricultural Sector Strategic Development Plan (ASDP), 2014-2018 is a medium-term plan that specifies the policy goals and objectives, indicates development outcomes, expected outputs and activities of MAFF for a 5 year period, from 2014 to 2018. This document reflects the RGC's policy direction stipulated in the Rectangular Strategy Phase-III and also aligns with the National Strategic Development Plan (NSDP), 2014-2018, which continue to promote the enhancement of agricultural productivity, diversification and commercialization, promotion of livestock farming and aquaculture, land reform and sustainable management of natural resources.

II- ACHIEVEMENTS AND MAIN CHALLENGES IN THE IMPLEMENTATION OF AGRICULTURAL SECTOR STRATEGIC DEVELOPMENT PLAN (2009-2013)

A. GENERAL SITUATION

With support from the RGC, MAFF, concerned ministries and institutions, local authorities and development partners, and the farmers own efforts, modern agricultural practices are being adopted and agricultural production has progressed, overcoming many challenges and difficulties.

MAFF has promoted all forms of agricultural production, especially strategic crops such as rice, rubber, subsidiary crops and agro-industrial crops and processing, animal husbandry and aquaculture. MAFF has also prioritized deep reform of the fisheries sector and the forestry reform programme.

Much work has been done to put in place and implement effective legal frameworks, deliver relevant infrastructure improvement and develop and disseminate techniques to increase production in a sustainable way. Rural areas have been provided with irrigation, good transport links and a positive business environment to enable the agricultural development achieved. The mechanism of Technical Working Groups is being widely used to analyse progress, determine priorities and co-ordinate government and development partners (DP) activity.

Moreover, after having promulgated the Policy Paper on “The Promotion of Paddy Production and Rice Export” of the RGC, rice exportation has progressively increased to international markets, and Cambodian rice namely Phkar Romduol is considered as the best rice quality in the world.

It is vital that Cambodian agriculture continues to move from subsistence-level to a commercial but sustainable basis. In the past 5 years, farmers across the country have recognized the benefit of higher value crops and activities and some have been actively and competitively involved in agri-business. Local and international investors recognize the potential of the agricultural sector and could invest much more in collection and storage facilities, processing and logistics systems once some of the remaining barriers to trade and investment are reduced. In particular, this concerns logistics, SPS standards and government capacity to regulate. The Government-Private Sector Forum has contributed to the identification of key constraints and to the prioritization of administrative and regulatory reforms.

It must be understood, however, that the sector has benefited from some trends that cannot continue so favourably, particularly high rice prices and expansion onto new land. The progress on intensification, increasing yields, improving farmers’ technical skills, diversification and

improving small farm profitability (especially for the poorest farmers) has been more challenging.

Value of the Agricultural Sector

The gross value added of agricultural production reached over 9 billion Riels in 2013, up from 8 billion Riels in 2009 (constant 2000 prices). This was an increase of around 14%. The agricultural sector contributed about 31.60% of GDP in 2013, Industry & Construction contributed about 24.10% and Services about 38.50%. Between 2010 and 2013, the contribution of the agricultural sector to GDP reduced from 33.9% to 31.6%.

The agricultural sector value added grew on average by 3% - 4% a year between 2009 and 2013, varying with the natural climatic conditions of each year. For example, the growth for the agricultural sector was 5.4% in 2009 and 4% in 2010. However, because of floods, the growth was only 3.1% in 2011 and 1.7% in 2013.

The relative value of the different agricultural sub-sectors has changed between 2009 and 2013. The share of crops relative to fisheries, livestock and forestry increased by nearly 52.9% to 54.2% in 2013. Within this, there was important diversification into crops other than rice, such as cassava, sugarcane, cashew nut and pepper. The share of fisheries increased from 25.2% in 2009 to 26.45% in 2013. The share of livestock production fluctuated between 12.8% and 15.5%, achieving 13.87% in 2013. Forestry and logging activity are reducing, from 6.6% in 2009 to 5.7% in 2012; and to 5.49% in 2013.

B. ACHIEVEMENTS AND AGRICULTURAL DEVELOPMENT BY SUB-SECTOR

Under the Agricultural Sector Strategic Development Plan 2009-2013, MAFF worked on some key issues that were important for the development of the sector as a whole. Thus, as MAFF promoted commercialisation and encouraged the contract farming, it attempted to give farmers protection and leverage in markets by organising producer organisations. Similarly, efforts to increase international trade in agricultural commodities by simplifying export processes were supported by measures to establish and enforce Sanitary and Phyto-sanitary standards.

Producer Organization and Extension Services:

MAFF's vision remains the empowerment of producers working together to learn and share knowledge and develop resources sustainably. Working alongside larger commercial operators, MAFF expects these organisations to be fully inclusive and to cooperate and compete in an open market, achieving producer power in their partnerships with traders, eventually through formal contract arrangements. They will be supported by public extension services and appropriate private sector support.

MAFF reviewed and invested in improving agricultural extension services between 2009 and 2013. The extension service workers are expected to provide training, particularly through the 556 agricultural co-operative organisations, in best practice techniques for land management, soil fertility and crop selection and support in organisation management, marketing, access to finance and agri-business development. The need for such communication, training and support for farmers is huge and the RGC has recognised the requirement to extend the outreach of the supporting services structure to local levels.

Following the publication of Sub-decree 25 on the establishment of Community Fisheries in 2007, the Forestry Law of 2002 and the Sub-decree on Community Forestry in 2003, MAFF has supported the establishment of 516 Community Fisheries and 457 Community Forestry organisations, but these also need much more development. The work to register and support them is significant and requires a wide range of skills, including community development techniques as well as technical expertise to develop profitable and sustainable use of the resource. MAFF also intends to develop rubber producing community organisations.

Sanitary and phyto-sanitary (SPS) standard and export and trade facilitation:

To exploit its potential for agricultural export, Cambodia must demonstrate an internationally acceptable SPS system and build supportive legal trading arrangements. Without these, investors will not commit capital to the processing, logistics and trade facilities required.

Between 2009 and 2013, the RGC improved its institutional arrangements to enable official exports, including improvement in trade facilitation and in SPS inspection and certification according to international standards.

MAFF, in collaboration with other ministries and agencies, succeeded in halving the time required to process export applications by establishing a 'One Window Service' for rice export processing and issuing certificates for SPS, fumigation, grading and quality, quantity and weight, and customs declaration.

However, SPS legislation needs updating because there are gaps, poor compliance with WTO principles and insufficient implementation. MAFF has prepared laws and procedures on the import and export of agricultural products subject to SPS inspection. A draft law on animal health and production is in the process of approval. Management of plant and animal quarantine needs to be improved. SPS for fish also needs further work. The capacity of the testing laboratories is limited. The EU's Everything But Arms Scheme gives Cambodia duty free access to the EU for exports of all products, except arms and ammunition. However, the EU markets require high SPS standards for agricultural products and no use of GMOs. Cambodia will have to demonstrate it is implementing and enforcing these controls.

1. ENHANCEMENT OF AGRICULTURAL PRODUCTIVITY AND DIVERSIFICATION

Expansion in the land under cultivation was a major factor in the increased production between 2009 and 2013. This includes cultivation on previously unused or degraded land. This cannot continue so the RGC focus has been, and will continue to be, on intensification and added value through improved yield and diversification.

Some of the increase in the area recorded as under cultivation resulted from investments in irrigation, where improved access to water not only improved yield but also permitted two crops to be grown a year. The re-cropped area was recorded in the data as additional land under cultivation.

Rehabilitation and new construction of irrigation infrastructure achieved an additional 387,900 ha of irrigated land between 2009 and 2013 (296,000 ha for rainy season and 91,900 ha for dry season). Farms that are irrigated and can cultivate in the dry season have higher yields and are more commercialized than those cultivating only in the wet season. In total in 2013, more than 1.48 million ha were irrigated, of which about 1.05 million ha were in the wet season and 0.43 ha in the dry season. This is about 30% of all land under cultivation.

The RGC's land reform programme is focused on measures to strengthen land management, land distribution and land use. The aims are to ensure the security of land ownership to enable investment; to eradicate illegal land holding and use; and to prevent speculative concentration of unused land in a few hands.

It was already recognised that security of land ownership is an enabling factor in farmers' willingness to invest in new inputs and techniques. Under the land reform process, RGC is granting social land concessions to farmers from unused land in order to reduce rural poverty and to enhance agricultural productivity and diversification.

Significant progress has been made in land registration, especially through the implementation of "Old Policy-New Action" framework. The RGC registered land and distributed 380,000 land titles under RGC's Directive No.01.

However, challenges still remain in access to land which impact agricultural production, for instance more farmers need title to their land and faster updating of land information. MAFF has prepared laws on agricultural land use and management. Among other things, this will incorporate agro-ecosystem analyses into land-use planning.

Private sector involvement in agriculture is essential to develop agro-industrial activities requiring significant capital investment. Economic Land Concessions (ELCs) were granted to establish plantations to grow crops such as rubber, sugar cane, cassava, palm oil, cashews, and acacia wood etc.

As of the first quarter of 2014, there were 121 valid agro-industry contracts in 18 provinces. The total land area under these contracts was around 1.3 million ha. 0.81 million ha of this can be cultivated but only 0.28 million ha has actually been cultivated, mostly with rubber, oil palm, sugar cane, cashew, cassava and tree plantations. More than 10,000 km of access roads were constructed and 53,670 labourers employed. US\$ 6.22 million was deposited in the National Bank of Cambodia as warranties for contract implementation.

As can be seen, progress is slow. It has become clear that some concessions were taken on a purely speculative basis. The RGC released Order No.01 dated 07 May 2012 to strengthen ELC management efficiency and clearly stated that there will be no further ELC contracts approved, except for some investment proposals submitted before May 2012. The Tiger Skin policy was implemented to better protect local community interests: in particular, land inhabited by farmers and community and protected forest must be cut out of the concession area. 69 contracts have been cancelled and 0.58 million ha confiscated where the contracts are not being fulfilled and in August 2014, the RGC formed the Inter-Ministerial Committee for Inspection of Economic Land Concession to further review ELC contracts.

1.1. Rice Production

Cambodian paddy rice production reached 9.38 million tons in 2013, an increase of 23.78% over 2009. There was a 3.09 million tons of milled rice surplus (4.82 million tons of paddy surplus), an increase of 37.68% over 2009. This sustained increase in rice production, in an open market and at a time when the price of rice has been rising, has been critically important in reducing poverty in Cambodia.

Table-1: Rice Production, 2009-2013

Description	2009	2010	2011	2012	2013	Change (%) 2013/2009
Cultivated Area (ha)	2,719,080	2,795,892	2,968,529	3,007,545	3,052,420	12.26%
Harvested Area (ha)	2,674,603	2,777,323	2,766,617	2,980,297	2,968,967	11.01%
Yield (Ton/ha)	2.836	2.97	3.173	3.117	3.163	11.52%
Production (Ton)	7,585,870	8,249,452	8,779,365	9,290,940	9,389,961	23.78%
Rice Surplus (Million Ton)	2,244,598	2,516,752	2,780,328	3,031,017	3,090,452	37.68%
Paddy Surplus (Million Ton)	3,507,185	3,932,425	4,344,263	4,735,964	4,828,832	37.68%

The achievement in rice production compared with NSDP 2009-2013 is illustrated in Table-2.

Table-2: Achievement Vs NSDP Plan 2009-2013 in Rice Production

Description	2009			2010			2011			2012			2013		
	Plan	Achieved	%	Plan	Achieved	%	Plan	Achieved	%	Plan	Achieved	%	Plan	Achieved	%
Cultivated Area ('000 ton)	2,630	2,719	103	2,650	2,796	106	2,650	2,968	112	2,650	3,007	113	2,650	3,052	115
Yield (Ton/ha)	2.77	2.836	102	2.80	2.97	106	2.83	3.173	112	2.87	3.117	109	3.00	3.163	105
Production ('000 Ton)	7,280	7,586	104	7,420	8,249	111	7,500	8,779	117	7,600	9,291	122	7,950	9,390	118

Implementation of the Policy on the Promotion of Paddy and Rice Export

RGC has put a concerted effort into increasing rice production. the '**Policy paper on the Promotion of Paddy Production and Rice Export**' was promulgated on 17th August 2010, with the objectives of Cambodia producing a surplus of more than 4 million tons of paddy rice and being capable of officially exporting more than 1 million tons of milled rice by 2015.

MAFF prepared and implemented its detailed action plan with critical policy measures in four main areas: (i) enhancing rice productivity; (ii) paddy rice collection and processing; (ii) export facilitation; and (iv) marketing support.

(i) Enhancing Rice Productivity

The production increase resulted approximately equally from expansion in the cultivated area and increase in yield: between 2009 and 2013, paddy cultivated areas increased by 12.26% to 3.05 million hectares and average yield increased by 11.52% to 3.163 ton/ha.

The expansion onto new land will not be expected to increase much more, so the targeted growth in production will have to come from increasing yield. MAFF continues to focus on this intensification.

Between 2009 and 2013, the institutional and technical capacity of Cambodia Agricultural Research and Development Institute (CARDI), research stations and development centers was increased. MAFF developed and prioritized 10 rice seed varieties which meet market demand and are suitable for the climate and soil conditions. The extension programme for the production and distribution of these 10 rice seed varieties has started but has not yet been extended comprehensively to famers. In addition, the quantity produced of those seeds was not sufficient to supply all the farmers interested in growing them.

CARDI and the General Directorate of Agriculture (GDA) also carried out further agricultural research and technology transfer to enhance the use of machinery and agricultural inputs. MAFF facilitated import clearance procedures for rice seeds, fertilizers, agricultural inputs and

machinery. The legal framework also further developed but more is needed, including the regulatory framework for the seed law and law covering chemical inputs.

There has been emphasis on the effective extension of System for Rice Intensification “SRI” method, the management of soil fertility and Good Agricultural Practice (GAP). The good practice promoted uses chemical inputs only when needed. MAFF worked to expand this extension service provision between 2009 and 2013, but the capacity of extension staff needs to be increased.

(ii) Paddy Rice Collection and Processing

The links between farmers and processors are weak. Most farmers sell individually via traders immediately after harvest and therefore gain little value at the farm gate. MAFF’s vision is for small farmers to work together, in producer organisations, to supply larger volumes of paddy rice to traders or directly to millers, through contract farming. MAFF promoted the creation of farmers’ organisations, passed and implemented the law on Agricultural Cooperatives and delivered agricultural extension services as the route for strengthening the technical and business capacity of these groups.

The Sub-Decree on “**Contract Farming**” has been endorsed and was implemented under cooperation with concerned institutions and supported by technical assistance from development partners. However it is not yet being widely used so in future MAFF will focus on developing the contract farming system.

RGC acted to develop the milling industry through support for the Rice Millers’ Association but finance will be needed both for the purchase and storage of paddy rice during the harvesting period and for the installation of further, international standard milling capacity.

(iii) Export Facilitation

Official rice exports dramatically increased from 12,610 tons in 2009 to about 378,850 tons in 2013 and 387,060 tons in 2014. Increased export needs more investment which depends on confidence that international milling, quality and SPS standards can be maintained and be supported by effective trade facilitation and competitive export arrangements.

One Window Service for rice export has been fully operated with efficient manner in halving the time to process export applications including the issuance of certificates for SPS, fumigation, grading and quality, quantity and weight, and customs declaration.

There is clearly an international market for Cambodian rice: Phka Rumduol, was chosen as the “World’s Best Rice” for 2012, 2013 and 2014.

The Rice Exporter Federation was established in July 2012. This federation is a partnership with the RGC in order to promote rice export and is working with the Group-9 of Working Group on Rice under the Government-Private Forum.

(iv) Marketing Support

In an open market system, access to timely market intelligence on rice prices is crucial to enable farmers to conduct fair business with traders and processors as they start to commercialise.

MAFF disseminated domestic, regional and international prices of rice via radio, television, short message services (SMS), bulletins and its website. Other ministries are promoting Cambodian rice internationally as part of trade fairs.

MAFF's activities to encourage and strengthen farmers' organisations to work together to share information and enhance their bargaining power, to create a positive environment for contract farming and to encourage investment in domestic milling, are all designed to improve the functioning of the market for paddy rice.

1.2. Subsidiary and Industrial Crops

The production of subsidiary and industrial crops such as maize, cassava, mung bean and soya beans fluctuated according to the growing conditions, prices and market demand for each crop. The cultivated areas of subsidiary and industrial crops reached 941 thousand hectares in 2013, an increase of 40% over 2009. This was largely due to cassava and maize production.

Table-3: Achievement for Subsidiary and Industrial Crop Production

Subsidiary and Industrial Crop	2009	2010	2011	2012	2013	(%) 2009/2013
Maize	221,287	213,622	174,257	216,330	239,748	8
Cassava	160,326	206,226	391,714	361,854	421,375	163
Sweet Potatoes	9,283	11,452	8,204	10,428	7,432	-20
Vegetable	50,278	52,732	52,830	76,495	52,449	4
Mung Bean	49,599	69,206	68,111	66,850	54,312	10
Peanut	16,474	20,041	16,287	18,048	19,954	21
Soy Bean	96,388	103,198	70,584	71,337	80,688	-16
Sesame	43,206	48,299	42,599	36,722	34,136	-21
Sugar Cane	13,533	17,207	22,614	48,586	23,810	76
Jute	347	594	342	286	243	-30
Tobacco	9,269	10,062	8,318	5,947	6,881	-26
Total Area (ha)	669,990	752,639	855,860	912,883	941,028	40
Total Production (Ton)	5,425,310	5,728,175	6,138,532	10,859,806	10,536,742	94

Over the last 5 years, the area cultivated for the production of fruit crops, such as banana, coconut, longan, mango, sapodilla, durian, jack fruit, custard apple, orange, rambutan, guava, pineapple and permanent crops (cashew, oil palm, pepper...etc.) increased by 5% to 183 thousand hectares in 2013.

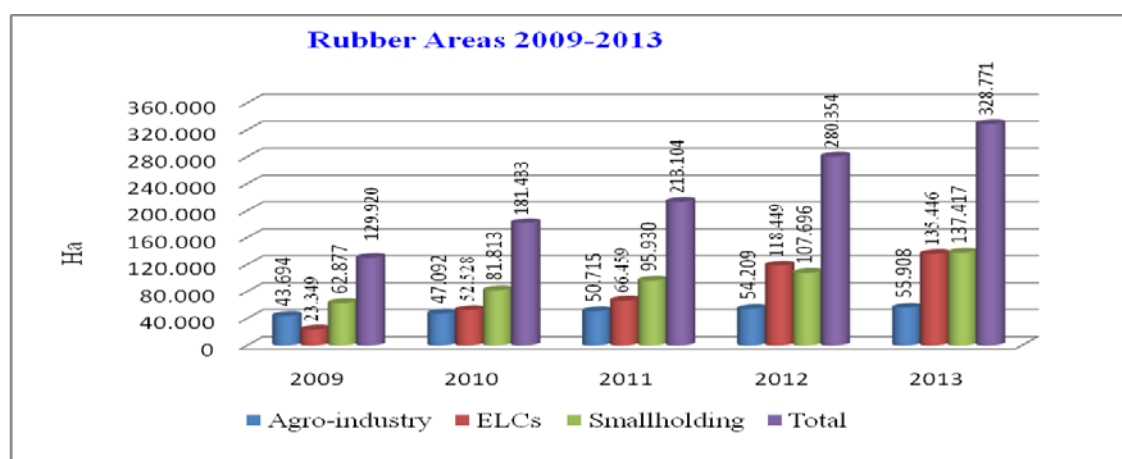
2. RUBBER PRODUCTION

2.1. Rubber Development:

Rubber is a long term agro-industrial crop that has played a major role in supporting farmers and promoting economic development. In addition, it actively helps to protect the environment by providing green forest cover, ensuring natural balance and preventing land erosion.

In 2013, Cambodian rubber plantations covered 328,771 hectares. This comprised 55,908 hectares of Rubber Estates (the former Rubber State Own Enterprises), 135,446 hectares developed by economic land concessionaires, and 137,417 hectares of household rubber plantation.

Graph-1: Rubber Production, 2009-2013



The cultivated areas of rubber plantation increased due to the increasing rubber price together with stable policy and security, the potential of suitable soils and the economic liberalization policy on domestic household rubber trade.

The rubber plantation areas increased from 130,000 hectares in 2009 to 328,770 hectares in 2013 increased 153% in last 5 years period. The smallholder rubber plantations have more than doubled (117%) from 63,000 hectares in 2009 to 137,000 hectares in 2013. The private rubber plantations developed by economic land concessionaires has increased nearly six times, (587%) from 23,000 hectares in 2009 to 135,000 hectares in 2013. The area covered of Rubber Estates (the former Rubber State Own Enterprise), has not made any remarkable change. Actually, the

Rubber Estates have been clearing old rubber trees and replanting on existing areas. The area covered by new trees increased by about 28% compared to 2009 (increase from 43.70 thousand hectares in 2009 to 55.90 thousand hectares in 2013).

Table-4: Plan VS Achievement for Rubber Production, 2009-2013

Description	2009			2010			2011			2012			2013		
	Plan	Achieved	%	Plan	Achieved	%	Plan	Achieved	%	Plan	Achieved	%	Plan	Achieved	%
Rubber Cultivated Area (ha)	128.4	129.9	101	143.4	181.4	127	158.4	213.1	135	173.4	280.4	162	188.4	328.8	175
Rubber Tapping Area ('000 ton)	38.5	34.1	89	49.5	38.4	78	63	45.1	72	78	55.4	71	97.5	78.5	81

To sum up, comparing these achievements with the indicators defined in the National Strategic Development Plan, rubber plantation exactly matched the 2009 plan, i.e about 128 thousand hectares. Moreover, in 2010, it achieved 27% over the result expectation, and it also happened in the following years: achieved over 35% in 2011, over 62% in 2012, and over 75% in 2013.

2.2. Rubber Production:

- Tapping area in 2013: 78,493 hectares in which 52,516 hectares of household rubber plantation;
- Production of dry rubber in 2013: 85,244 tons in which 54,984 tons of household rubber products;
- Production of dry rubber increased by 128% from 37,380 tons in 2009 to 85,288 tons in 2013;
- Export of dry rubber increased by 135% to 86,052 tons in 2013, including 54,984 tons of household rubber products.

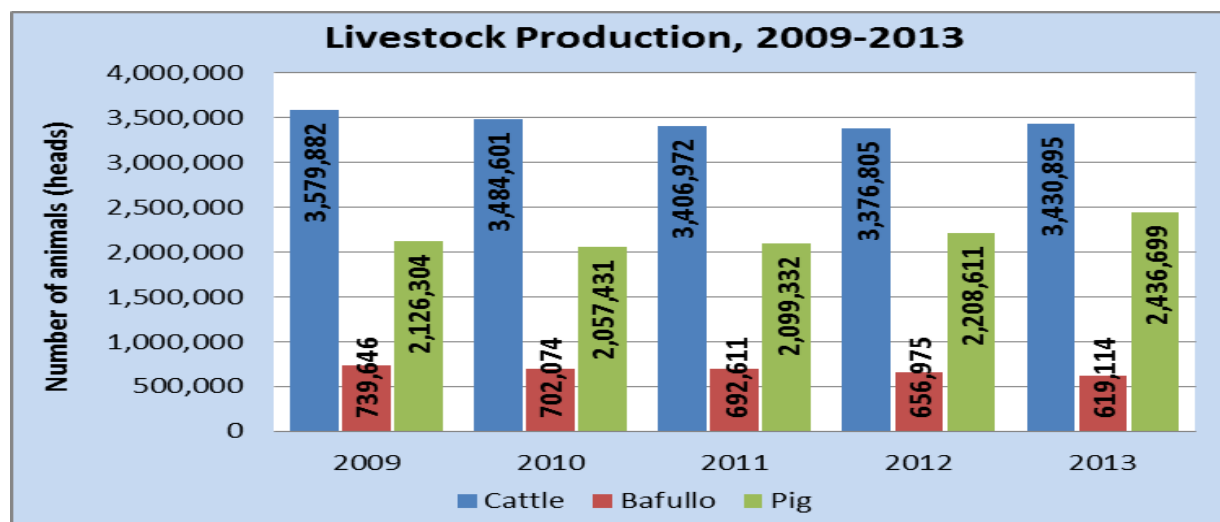
3. ANIMAL HEALTH AND PRODUCTION

The emphasis in livestock production in Cambodia has changed, significantly, from a draft animal resource to a food source for the domestic population and tourism.

From 2009-2013, cattle production decreased from 3.60 million heads to 3.40 million heads, a decrease of about 4.20%. Buffalo production also decreased from 740,000 heads in 2009 to 619,000 heads in 2013, a decrease of about 16.40%. The decrease of cattle production is a result of the decrease of draft animal due to the increase in use of tractors and machinery (70% of paddy production areas was plowed by machines). Cattle feeding has also been constrained due to the lack of labor force in rural areas (due to migration). Farmers have also had difficulty finding water and grass areas for feeding cattle. At the time of decreasing use of draft animals,

farmers have changed their activities to fattening cattle. At the same time private sector investment in fattening cattle production has increased.

Graph-2: Livestock Production, 2009-2013



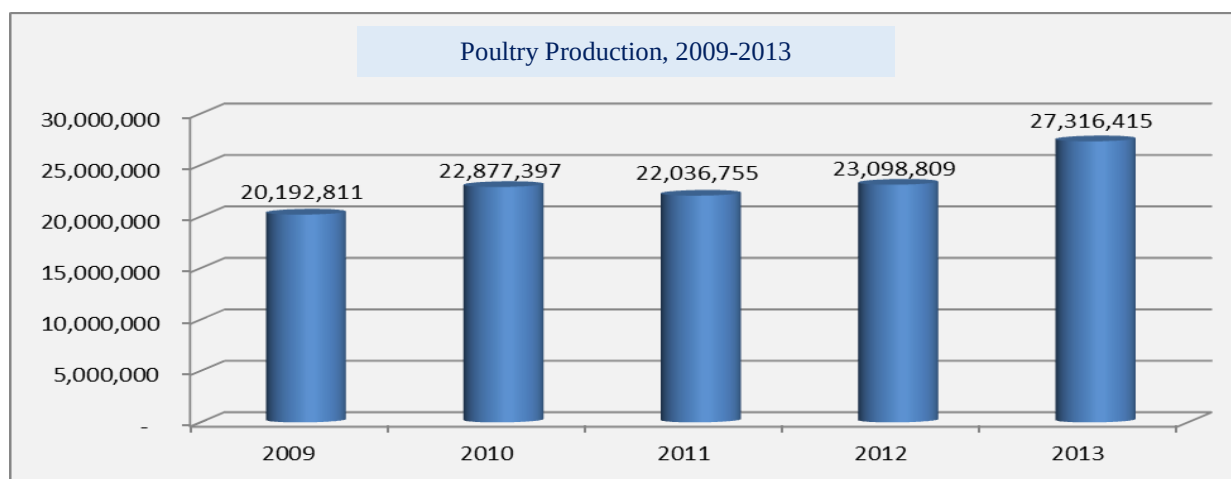
Pig production increased by 15% to 2.40 million heads in 2013, due to the establishment of medium and large scale animal production farms. Animal feed production increased due to the establishment of animal feed factories for domestic supply and farmers have become aware of using feed and fodder effectively and participated in producing animal feed and pastures. However, feed and animal medicines were still relatively expensive in Cambodia.

Poultry production (chicken and duck) increased significantly, by 35.28% to 27.32 million heads in 2013. In 2013 alone, production increased by 18.26% over 2012.

This implies that the farmers are becoming aware of improved production techniques and methods of prevention of infectious diseases. The protection of human and animal safety was implemented with good results, with low mortality rates, the prevention of bird flu and some inspection of animal sanitation and meat products from farm and from slaughterhouse to market.

But there is much more work to be done for Cambodia to meet its international commitments on the regulation and enforcement of sanitary standards for animal products, and strengthening and enforcing animal SPS measures to prevent and combat the outbreak of animal diseases, protect public health by preventing disease transmission from animals to humans and vice-versa and the establishment of modern slaughterhouses to protect public health and facilitate trade.

Graph-3: Family Poultry Production, 2009-2013



Besides animal production and development, the management of animal residue was also focused on, through awareness campaigns, training and demonstration on good animal husbandry practices (GAHP) and the construction of bio-digesters at animal production farms and households. The national plan for construction of bio-digesters was actively carried out; so far 20,338 bio-digesters have been built.

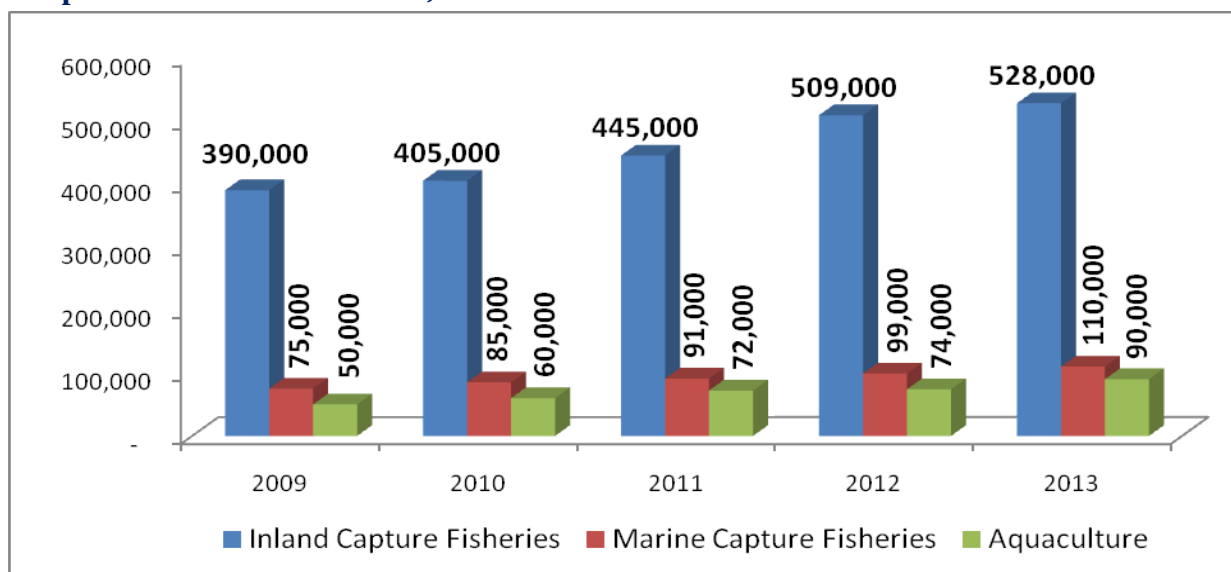
4. FISHERIES PRODUCTION AND REFORM

Cambodia possesses one of the largest and most diverse fisheries in the world, with over 30% of the country consisting of either permanent or seasonal wetlands. Fish provides about 80% of animal protein for the population and is particularly vital for food security and income for the poorest people.

The annual inland catch increased by 35% between 2009 and 2013, to 528,000 tons and the marine catch by 47% to 110,000 tons. In addition, aquaculture developed substantially: production of cultured fish and shrimp increased by 80% to 90,000 tons in 2013, and crocodile farms produced 320,000 heads in 2013. Overall fish production (wild and farmed) increased by over 40% between 2009 and 2013, around 10%/year.

The sustainability of this resource, the third largest inland fish capture in the world, has been a massive concern as the demands for land and food have increased and disruption to previous natural river flow and floodplain connectivity has taken place, particularly to provide power and irrigation.

Graph-4: Fisheries Production, 2009-2013



Between 2009 and 2013, the RGC focused on fisheries reform to promote small-scale fishing and sustainable use of fishery resources. The main activities were the cancelling of almost all fishing lots and making them available for artisanal fishing, establishing and protecting an additional 50 fisheries conservation areas, totalling 22,500 ha and the protection of over 647,406 ha of inundated forest especially surrounding Tonle Sap Lake.

516 Community Fisheries (CFis) have been established and 360 are officially registered.

In addition, RGC has promoted aquaculture, both marine and inland, to increase the commercial potential of the sub-sector. This included giving technical support to 292 farmer-operated fish hatcheries. 775 Community Fish Refuge (CFRs) Ponds were established to increase local rice field fisheries capture.

MAFF also combats illegal fishing and protects the flooded forest operating in parallel with the community fisheries management and police, army and provincial and district authorities . In the past 5 years, enforcement against illegal fishing has actively been carried out for protection of sustainable fisheries resources. 3,826 cases of illegal fishing were stopped in 2013 (inland 3,724 cases and marine 102 cases). But illegal fishing still continues.

To support more value added activity, there would need to be support for quality standards for fish product production, storage and use for both domestic and export markets. MAFF has supported the establishment of 16 fish product processing associations and established production standards and laboratory facilities for key fish products such as Prohok, dried snakehead and frozen shrimp. Further investment in food safety and market regulation functions, especially SPS standards, are required.

To conclude, the achievements of the fisheries sector were made through cooperation with development partners and better relationships with local authorities and fisheries organizations. The established community fisheries are already generating fruitful results, especially in terms of improving the living standards of their members.

5. FORESTRY REFORM

The RGC is strongly focused on implementation of the Forestry Reform Programme. Its policy goal is to manage and use forestry resources in a sustainable way, aiming to take the maximum advantage from their contribution to poverty reduction and socio-economic growth.

Cambodia contains approximately 10.36 million hectares of forest cover, representing approximately 57.07% (2010) of Cambodia's land area. One of the Cambodia Millennium Development Goals (MDG) targets is to achieve a 60% forest cover by 2015.

The National Forestry Program 2010-2030 (NFP) was formulated and adopted by RGC in October 2010. It focuses on forestry law enforcement and governance, forestry boundary demarcation, enhancement of sustainable forestry management, wildlife conservation, promotion of community forestry development, increase of reforestation and tree plantation, capacity building of institutions, human resources development, and a research and extension programme for sustainable forestry management.

Between 2006 and 2010, total forest cover declined, so Cambodia focused on improving the capacity for effective management and strict control of forest exploitation. Under REDD+ national and sub-national activities were established. The major achievements were:

- commercial logging activities from forest concession remained banned;
- reforestation was increasingly implemented; and
- the Sub-Degree on the use of state land for reforestation resulted in an increase of participation by communities and the private sector in reforestation activities.

Between 2009 and 2013, 87,028 ha were reforested, of which 78,354 ha were planted by private companies. Reforestation has been promoted in open forest areas, degraded mountainous areas and watershed areas that are strongly affected by soil erosion. Tree seed plantations in forestry stations produced around 8 million saplings every year, for distribution for household plantation and public gardens.

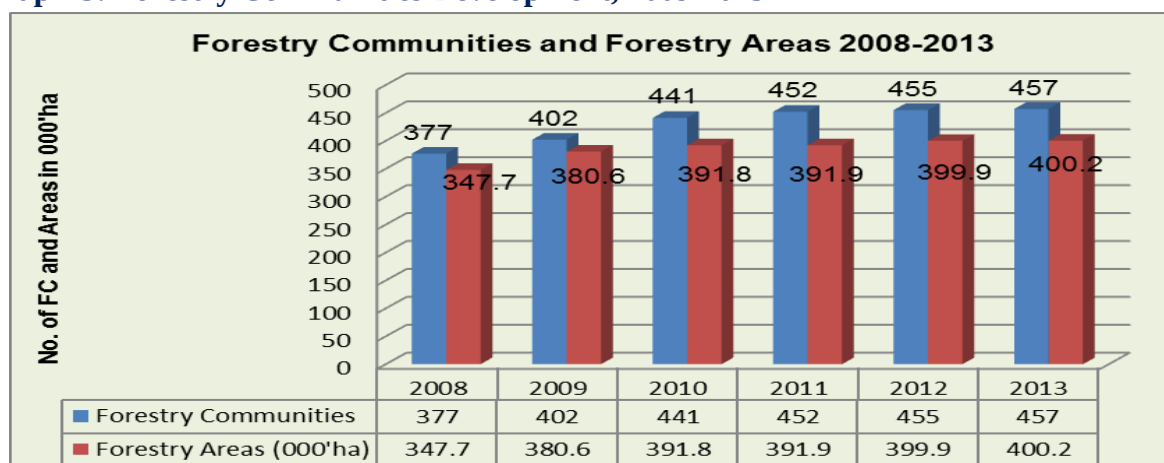
Table-5: Achievement for Reforestation, 2009-2013

Year Reforestation Area (ha)	2009	2010	2011	2012	2013	TOTAL (ha)
Forestry Administration	1,000	1,020	530	488	350	3,388
Companies in collaboration	-	-	-	-	845	845
Household	-	974	315	2,793	-	4,082
Forestry Day	69	66	68	84	72	359
Private Companies	17,924	26,775	3,590	13,400	16,665	78,354
TOTAL (ha)	18,993	28,835	4,503	16,765	17,932	87,028

Community forestry was established in accordance with the Prakas adopted in 2006. As a result, the number of forestry communities increased from 402 in 2009 to 457 in 2013 and covered 400 thousand hectares of forest areas.

The National Community Forestry Program was implemented by cooperating closely with development partners, and concerned local authorities. The development of action plans and proposals was actively carried out in order to seek financial and technical support for implementation to accelerate the management and development of the forestry sector, especially through the technical working group on forestry and environment.

Additionally, cooperation with local authorities was established for implementing the border demarcation process of the permanent forest reserve. In 2013, 817 poles were put in, along 97 kilometers.

Graph-5: Forestry Communities Development, 2009-2013

The Forestry Administration, which is responsible for the sale of carbon storage in Cambodia, conducted studies and research aimed at taking advantage of the opportunity from carbon credits that international communities have focused on to address climate change and global warming. The protection of forest is the main task and this could be carried out through the abolition of commercial logging of native forest for export and replacing the income by carbon

credit programs. Revenues contribute to poverty reduction in the forestry communities and provide the incentive to protect forests. The Forestry Administration has cooperated with development partners and national and international organizations in order to create the carbon credit programs in forest areas managed by the community forestry. Clean Development Mechanism and the greenhouse heat reduction activities have also been strongly supported and promoted during the past five years.

Furthermore, in every year, with the collaboration of involved institutions, local authorities and armed forces, the Forestry Administration has prevented many forest and wildlife crimes, and has classified those crimes according to their type. Illegal loggings, wood processing as well as wildlife criminal activities have been gradually suppressed.

6. SUPPORTING SERVICES

With positive achievements described above, there have been other services and supports which were implemented in order to improve agricultural production. Public and private sectors investment as well as the support from development partners including national and international organizations have been actively made toward to achieve the Government policy. The preparation of policy, strategic plan for agricultural development, the legal frameworks, regulations and other relevant laws have been actively made.

The RGC has set the strategic direction for reforming the budget management system of Cambodia in 2013-2020. The government is implementing this reform step by step, changing the emphasis from inputs and centralization to results/outcomes and decentralization. MAFF is one of the 10 ministries that are allowed to implement complete Program Budgeting (PB). It is one of the Budget Entities (BE) that will be created in 2015. A three-year rolling Budget Strategic Plan (BSP) for MAFF has been prepared in line with the RGC's circular. To implement this reform MAFF has established two working groups: (1) Budgeting Working Group and (2) Public Financial Management Reform Working Group, both based in the Ministry.

The work on international cooperation, bilateral and multilateral cooperation, ASEAN membership obligations, and other cooperation projects has been implemented, with many fruitful results such as the organization of the 35th ASEAN Ministerial Meeting on Agriculture and Forestry; the Agreements on Project Implementation with international organizations and diverse development partners in bilateral, multilateral and in ASEAN framework; the Memorandum of Understanding with ASEAN partners; and the Agreement on Purchase & Sale, Product Exchange & Commercial Services in Cambodia-Vietnam borders. Moreover, Cambodia has hosted many ASEAN meetings including the 10th Meeting of the Task Force on ASEAN Standards for Horticultural Products and other Food Crops, the 16th Meeting of the ASEAN Expert Group, the 21th meeting of the ASEAN Sectoral Working Group on Crops, the

17th ASEAN Senior Officials on Forestry (ASOF) Meeting, as well as individual the exchange visits among ASEAN senior officers and agricultural community officers.

During the last 5 years, MAFF has paid much attention to management and human resources development; especially the management of civil servants, work on nominating government officers to their positions, the preparation of organizational structures, payroll, social security fund, job promotion, and retirement procedure that align with laws and other related regulations.

Agriculture production is developing in line with the concept of a free market economy. Therefore, the role and responsibilities of each technical line department must be improved to enable and facilitate the functioning of the sector. A clear management structure, and strong human resources capacity is needed in all the units under MAFF. Much work was done on this between 2009 and 2013.

The Royal University of Agriculture (RUA) is the foremost institution in Cambodia for agricultural education. The number of students in 2013 was 5,973 of whom 1,403 are female (23% of the total). There are different kinds of degree such as Bachelor, Masters and Doctoral Degrees offered by 10 faculties: Agronomy Science, Animal Science and Veterinary Medicine, Forestry Science, Agricultural Engineering, Fisheries Science, Agro-Industry, Agricultural Economics and Rural Development, Land Management and Land Administration, and Rubber Science. There are two other national colleges: Prek Leap National Agricultural College with the number of students was 1,562 of whom 502 are female and Kampong Cham National Agricultural School with the number of students was 1,559 of whom 608 are female that also offer agricultural education and they have achieved very satisfying results.

C. ASSESSMENT AND CONCLUSION

1. STRENGTHS, CONSTRAINTS AND CHALLENGES

1.1. Strengths and Opportunities

There is great potential for Cambodian agriculture to continue on its positive course of development, providing food and income for the Cambodian people and, increasingly, higher-value business, export and revenue.

- The demand for agricultural products is expected to rise in the next 5 years to feed an increasing population, provide inputs for agri-business and produce for export.
- Agricultural production still has a large potential to develop. Soil and water resources are still available. Land area for cultivation will become increasingly scarce, so there will be a priority on increasing yields and the improving the skills of farmers and

extension workers. These are the fundamental factors that guarantee the growth of agricultural production.

- Private sector services supporting production, such as machinery and input supply, are growing and enabling agricultural production.
- The farmers are changing their practices from “subsistence farming” to “commercial farming”. Increases of in crop productivity, diversification and the use of agricultural inputs and machinery are the evidence of this.
- The RGC’s policies and strategies related to agricultural sector development have been clearly defined. It is noted that all the involved institutions including development partners, non-governmental organizations, private sector and farmers have strongly committed and recognized the importance of agriculture.
- The RGC has paid much attention to develop agriculture by increasing the investments in agricultural infrastructure (especially the irrigation system and rural roads etc.), capacity building, technical extension services, appropriate input use, agricultural land management, rural credit, farmer community development and agricultural market.
- Community organisations are being established for all subsector producer and user groups. These can play a vital role in the development of agriculture and support for households, helping to share knowledge and expertise, improving access to technical services and increasing bargaining strength.
- Agri-business is emerging and there is a great opportunity for Cambodia to increase its post-harvest and processing capacity in all subsectors, for the domestic market and to further enter international market competition.
- The increased use of machinery for agricultural work allows livestock production and husbandry to concentrate on meat production for domestic consumption and trade. There is an increasing market for meat with a growing population and increased tourism.
- The network of Village Animal Health Workers gives a direct dissemination route about animal husbandry to farmers.
- There is still more potential to sustainably increase fish production and capture. Fisheries Communities have been successfully established and these offer a strong channel to disseminating further good practice in conservation and in the opportunities of aquaculture.

1.2. Constrains and Challenges

Despite the significant improvements in agricultural productivity and production, there remain significant challenges both to further reducing rural poverty and to developing a profitable, value-added agri-business sector.

- To improve productivity and diversification, there is still a large need for both technical and financial support, as well as the participation of all concerned stakeholders in order to promote and increase the access to agricultural extension services, irrigation systems,

climate-resilient seeds and cultivation techniques and appropriate uses of agricultural input supplies and credit supports. The selected 10 varieties of rice seed for productivity enhancement have not been extended comprehensively to the farmers. In addition, the quantity of those 10 rice seed varieties is still not sufficient for supplying to the farmers. MAFF aims to overcome this over time by state research farms supplying seed to Seed Producer Groups who will supply farmers.

- Farmers have trouble finding the market to sell their products and difficulties in increasing their market competing ability in the context of free market economy. MAFF will ensure farmers have access to good information about market prices and support collaboration between farmers to strengthen their bargaining power with traders and millers.
- The regulatory environment and its enforcement needs more attention. In particular, the laws and regulations to further promote production and distribution of improved quality seed; strengthen agricultural land management including control on the use of inputs; strengthen farmers' organizations and promote contract farming; and facilitate domestic trading and export of milled rice need to be implemented and effectively enforced.
- The improvement of post-harvest management is still limited despite recent investment. To attract further significant investment and reduce informal exports, the environment for trade needs further improvement. MAFF will increase the capacity for Cambodian quality and SPS standards and certification.
- Agricultural communities (Agricultural Cooperatives), fisheries and forestry community groups are being established aiming to empower the skills, bargaining ability, the accessibility of technical and credit services, and the effective use of resources. But they are not yet operating very effectively and need much support to develop further. The rubber farmers' communities have not yet been established, and this is another important task.
- The encouragement of participation from the private sector in agricultural development is needed in order to increase investments in the sector. It is observed that there have been many companies that have invested in agro-industrial crops through economic land concession. However, some investors have not implemented their investment plans according to the contract/agreement and have left the land uncultivated. In this case, these companies are subjected to confiscation of the land and cancelation of the contract. Monitoring actions to the contract implementation must be strongly enforced.
- The capacity to disseminate technical knowledge and support is vital. Further training and support of the agricultural extension workers is required. Human resource development, vocational and professional training need to be accelerated, especially the improvement and development of local agricultural technical capacity for the grass-root level in order to provide agricultural extension services to farmers in rural areas in an effective way. All technical field staff specialized on agriculture, fisheries and forestry will be required to work more at the grass-roots level and support an increasing range of activities.
- The growth of livestock production has slowed due to the problems encountered, and challenges occurred in the past including the infectious diseases, the lack of facilities for

prevention and elimination of disease, and the competition of meat markets due to the high cost of production and the costly animal feeds and medicines.

- Further effective measures are needed to protect flooded forests. The human and financial resources in fishery offense elimination are still limited, both inland and marine. The flooded forest demarcation, fishery demarcation and concrete pole establishment and the fishery offense elimination are still the issues that will be addressed further by public authorities and local communities. There is competition between fishing and other uses for water – including for power, particularly the hydro-dam construction in Upper Mekong.
- It will be very challenging for Cambodia to meet its 60% forest cover Millennium Development Goal and MAFF will concentrate on protection, conservation and plantations. Forest land demarcation is still problematic, with boundary poles being destroyed, people moving to live near the forest and people still attempting illegal logging. Collaboration and participation from local authorities and relevant institutions also needs to increase, especially in the work related to controlling and cracking down on forestry offenses.

2. CONCLUSION

During the past 5 years, from 2009 to 2013, agricultural production has noticeably improved, even though the production of rice and other crops remains dependent on weather conditions. This has been achieved with the strong efforts of MAFF, under effective guidance and support from the RGC, and with the active participation from all relevant ministries and institutions, local authorities and farmers in the whole country, and also with contributions from development partners.

Rice production has obtained a great result. The rice production reached 9.38 million tons and generated a rice surplus of around 3.09 million tons (or 4.82 million tons in paddy surplus) in 2013. This is an excellent result and a great success for Cambodia. This output achievement in rice production has been achieved through two major factors: (1) the expansion of cultivated areas, especially the increase of seasonal production (double cropping); and (2) rising rice yield (from 2.83 ton/ha in 2009 to 3.16 ton/ha). This in turn has resulted from effective research and development, dissemination of high yielding seed and cultivating techniques and better crop management.

The subsidiary, industrial, crops and permanent crop production has also increased for smallholders, as well as medium and large scale farm businesses. The rubber plantation areas have considerably increased, in which the development of smallholder rubber plantation was at a remarkable point.

In addition, animal production has developed, with pig and poultry production increasing strongly. This demonstrates the results of research and dissemination on breed, vaccination

against infection, and the technical capacity and knowledge enhancement that have been extended and effectively implemented in the past 5 years. For cattle, the future focus will need to be on fattening for commercial sale.

Deep reforms have been implemented as a foundation for the sustainability of fishing and the protection of this resource which is so vital to food security for the Cambodian people. There has also been significant growth in aquaculture, and it needs to grow further.

Natural resources management, particularly in both forestry and wild-capture fisheries, needs to address the balance between “Development” and “Conservation”. This needs to be carefully discussed to reach a common consensus for the sustainable development and consideration of natural resource conservation, with strong enforcement of related laws and regulations.

Finally, the supporting services and MAFF interventions also made significant achievements aligned with the RGC policies and targets. However, this is just the beginning of the long route to accomplish our big ambition, aiming for an agricultural sector which is fully modernized and more effectively developed.

PART- II

AGRICULTURAL SECTOR STRATEGIC DEVELOPMENT PLAN, 2014 - 2018

I- AGRICULTURAL SECTOR STRATEGIC DEVELOPMENT PLAN, 2014-2018

A- BACKGROUND

The Rectangular Strategy-III of the Royal Government of Cambodia (RGC), under the strong and intelligent leadership of **Samdech Akka Moha Sena Padei Techo HUN SEN, Prime Minister of the Kingdom of Cambodia**, clearly defined the enhancement of agricultural sector as the dynamic element for accelerating the economic growth and poverty reduction by focusing on the improvement of agricultural productivity, diversification and commercialization, land reform and forestry & fisheries reform programme. The four Rectangles for accelerating economic growth have been defined as: (i) Enhancement of Agricultural Sector, (ii) Further Rehabilitation and Construction of Physical Infrastructure, (iii) Private Sector Development and Employment, (iv) Capacity Building and Human Resource Development.

The “**Rectangular Strategy Phase III**” represents the blueprint for Cambodia in moving to a higher level of development i.e. transitioning from a low income country to a lower-middle income country, while building the foundations to realize its long-term vision of becoming an upper-middle income country by 2030 and high income country by 2050.

Keeping these considerations in view, the Royal Government has set out “**Four Strategic Objectives**” and “**Four Priority Areas**” to reaffirm its commitment to continue implementing the “Rectangular Strategy”.

The Four Strategic Objectives are:

1. Ensuring an average annual economic growth of 7%. This growth should be sustainable, inclusive, equitable and resilient to shocks through diversifying the economic base to achieve a more broad-based and competitive structure with low and manageable inflation, stable exchange rate and steady growth in international reserves.
2. Creating more jobs for people especially the youth through further improvement in Cambodia’s competitiveness to attract and encourage both domestic and foreign investments.

3. Achieving more than 1 percentage point reduction in poverty incidence annually, including the realization of other CMDG targets, while placing higher priority on the development of human resources and sustainable management and use of environmental and natural resources.
4. Further strengthening institutional capacity and governance, at both national and sub-national levels, and ensuring the effectiveness and efficiency of public services to better serve people.

The four priority areas, which include development of the agriculture sector as the third priority area, are:

1. Development of human resources to ensure competitiveness in an increasingly open regional labor market.
2. Continued investment in transport infrastructure and improving trade facilitation to develop a vibrant logistics system through the development of a multi-modal transport network system to ensure connectivity within the country and with other countries in the region and rest of the world; and to respond to urban development.
3. Further development of and increasing value added in agriculture, in particular through:
 - ✓ *Enhancing value added of milled rice production and export, especially fragrant and organic rice and other high value agricultural products including rubber, cashew nuts, corn, mung bean, soy bean, sesame, pepper, silk, fruits, coffee, vegetables and flowers,*
 - ✓ *Promoting livestock production and aquaculture to meet market demand such as meat, fish and dairy products,*
 - ✓ *Encouraging investments in agro-industry; and*
 - ✓ *Enhancing agricultural productivity, modernization and commercialization.*
4. Strengthening governance and capacity of public institutions in order to improve the efficiency of public service delivery and investment climate.

Rectangle I: Promotion of Agriculture Sector

Cambodia's agriculture continues to play an important role in supporting economic growth, ensuring equity, securing food security, and promoting development of the rural economy. The Royal Government's vision is to modernize Cambodia's agriculture, based on a new approach and with changed scope and pace, to transform this sector from extensive stage of development, i.e. primarily depending on expanded use of available resources (such as land and other natural resources) and traditional agricultural inputs, into an intensive stage of development that primarily depends on the application of techniques, new technologies, R&D, mechanization and increased capacity of irrigation to improve productivity, and diversify into high value crops and other agricultural products including livestock farming and aquaculture while taking into account the need to ensure efficient management of land and sustainability of environment and natural resources. Moreover,

further promotion of commercialization and agro-industry development will increase added-value of agricultural products and income of people.

The four sides of the rectangle are:

Side 1: Improved Productivity, Diversification and Commercialization

Side 2: Promotion of Livestock Farming and Aquaculture

Side 3: Land Reform and Clearance of Mines and UXO

Side 4: Sustainable Management of National Resources

The ASDP has been designed to reflect this strategic framework.

B- VISION

The long-term vision of the Ministry of Agriculture, Forestry and Fisheries is:

“To contribute poverty reduction, ensure enough & safe food availability for all people, through modernization of agricultural sector based on a new approach and with changed scope and pace for accelerating agricultural economic growth, and sustainable natural resource management & conservation”.

C- MISSION

The mission of the Ministry of Agriculture, Forestry and Fisheries is to:

“Support the economic growth of Cambodia by providing high quality services which result in a secure safe food supply, increased agricultural outputs and add value on a sustainable and cost effective basis to agricultural, fishery and forestry based sectors”.

D. POLICY GOAL FOR AGRICULTURAL DEVELOPMENT

(1) Overall Policy Goal:

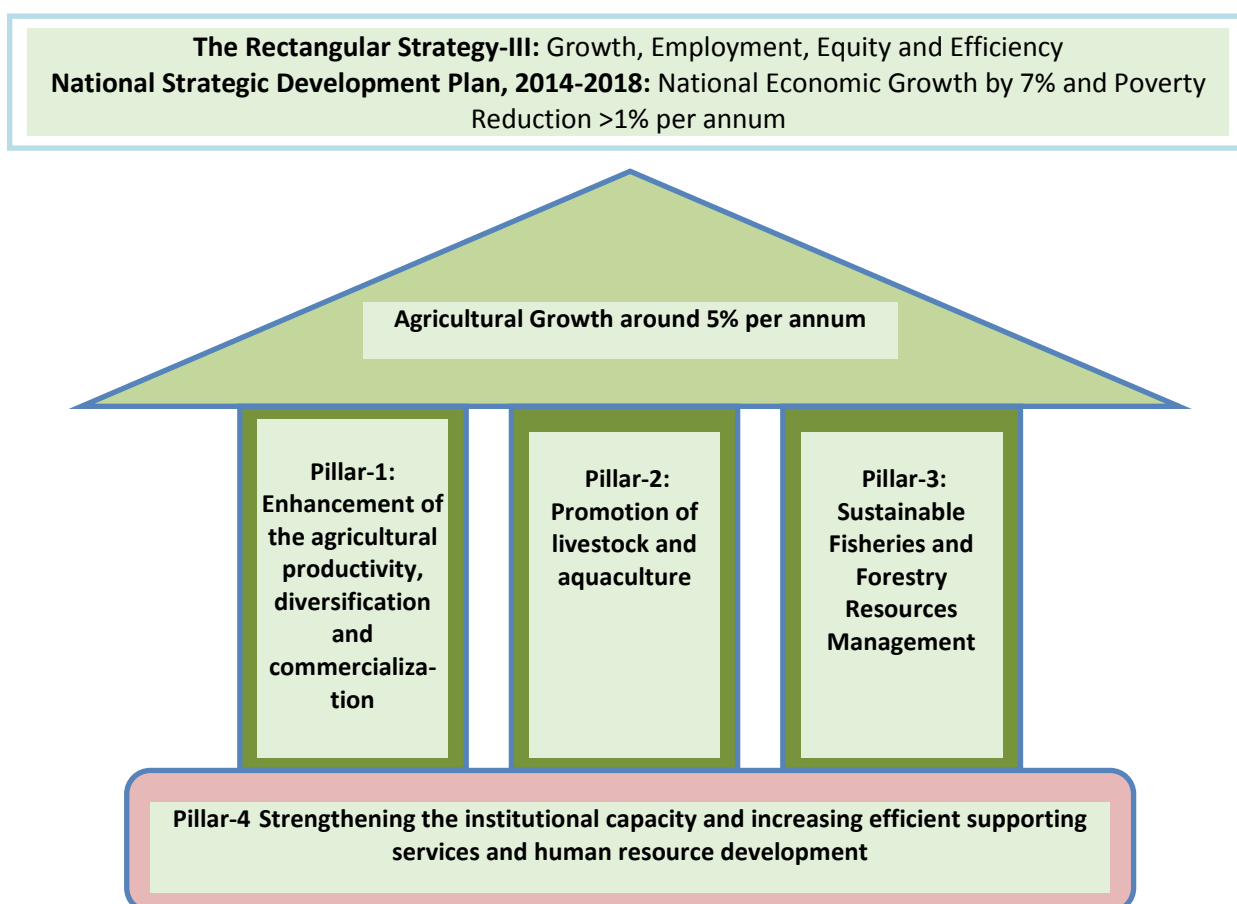
The overall goal of the policy will be to “Increase agricultural growth to around 5% per annum through enhancement of the agricultural productivity, diversification and commercialization and livestock and aquaculture farming by taking into account the consideration of sustainable forestry and fisheries resource management”.

(2) Four Basic Pillars:

To achieve the overall policy goal of the Ministry as well as contributing to achievement of the objectives of the NSDP, 2014-2018, the Ministry of Agriculture, Forestry and Fisheries defined four "**Basic Pillars**" for the development of the agricultural sector as follows:

- Pillar-1:** *Enhancement of the agricultural productivity, diversification and commercialization;*
- Pillar-2:** *Promotion of livestock and aquaculture;*
- Pillar-3:** *Sustainable Fisheries and Forestry Resources Management;*
- Pillar-4:** *Strengthening the institutional capacity and increasing efficient supporting services and human resource development.*

Pillars 1 to 3 are the fundamental activities for accelerating agricultural growth. On the other hand, Pillar-4 supports the first three Pillars by strengthening agricultural institutions, and human resources in the agriculture sector.

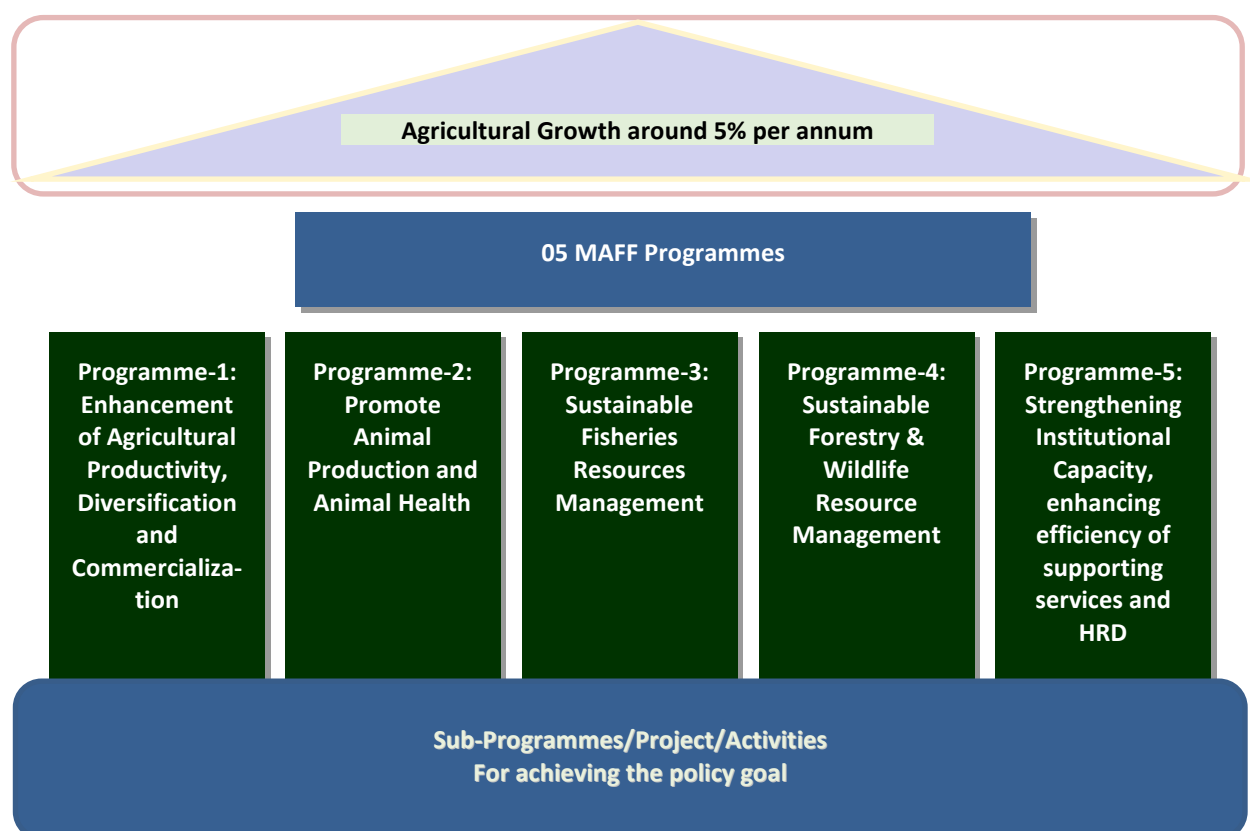


E. Five Programmes for MAFF:

In order to achieve the main policy goals, the Ministry of Agriculture, Forestry and Fisheries formulated five priority programs which incorporate the Public Financial Reform Program of the RGC under Programme-5. The programmes will be financed through a budget that combines domestic financial resources with the contributions of development partners. The 5 priority programs are as follows:

Programme-1:	Enhancement of Agricultural Productivity, Diversification and Commercialization
Programme-2:	Promote Animal Production and Animal Health
Programme-3:	Sustainable Fisheries Resources Management
Programme-4:	Sustainable Forestry & Wildlife Resource Management
Programme-5:	Strengthening Institutional Capacity, enhancing efficiency of supporting services and Human Resource Development

The Programme Structure in ASDP, 2014-2018



Programme-1: Enhancement of Agricultural Productivity, Diversification and Commercialization

The enhancement of Agricultural Productivity, Diversification and Commercialization is the main strategic goal for promoting growth and reducing poverty in the agricultural sector. Productivity increases are needed to enable increased production by double cropping and crop intensification approach. Diversification will help farmers reduce risk and at the same time shift to the cultivation of crops with greater value-added. Poverty cannot be eliminated by improving subsistence alone, so commercialization is a necessary means of improving farm incomes and farmer welfare. At the same time, care must be taken to ensure that commercialization does not undermine food security.

Objective of the Programme-1: To increase the growth of all kind of crops production by 10% per annum through enhancing agricultural research and extension aiming to increase crop yield, improve the product quality, strengthening capacity of agricultural cooperatives in connection with contract farming system and improving sustainable agricultural land management and utilization.

To reach this objective, the Ministry of Agriculture, Forestry and Fisheries will focus on the following strategic approaches:

- Efforts will be made to continue the increase in productivity of rice and other commercial crops. Research and development (R&D) will continue to improve crop productivity and resilience to climate change through improving quality of seed for which there is a market demand. There will be a focus on increasing the technical capacity of extension staff at grass-root level (especially district agricultural offices and commune agricultural centers) and extending services to farmers who currently receive no support, better post-harvest technology, formulating and adjusting the legal framework for seed and other input management, implementing the "Contract Farming System", agricultural land improvement and human resource management in agricultural production.
- Agricultural diversification will be promoted through the creation of an enabling environment to increase the involvement of private sector. Actions to ease trade will be accompanied by the construction of local infrastructure to improve farm access to markets. At the same time, MAFF will conduct local trials of seed for commercial crops and provide extension activities to introduce cash crops to small farmers.
- As agricultural commercialization intensifies, the role of MAFF will need to change. Over time MAFF field staff will take on the role of facilitator, rather than the direct deliverer of services to farmers. Increasingly the private sector will provide extension services to farms with commercial potential. MAFF field staff will need to oversee trading relations between farmers on the one hand and traders and integrated

agricultural supply and marketing firms on the other. Agricultural communities and farmer organisations will be promoted to strengthen farmers' negotiating position against traders and agro-industrial firms. At the same time large scale commercialization will be encouraged through the "One Window Service" for the registration and licensing of agricultural FDI and closer oversight of the commercial development of ELCs.

- The National Agricultural Laboratory will be strengthened through and mobilization of national budget and support from development partners for staff capacity development and the installation of equipment for the conduct of laboratory testing and analysis to ensure the quality & safety of agricultural products for exports.
- Rehabilitation and building of infrastructures of state farms, research stations and agricultural development centers to serve for all forms of crop-related research & development and appropriate technology transfer activities, particularly rice, in order to contribute to gradually achieving target set in the Policy on the Promotion of Paddy Production and Rice Export adopted by the Royal Government of Cambodia.
- Climate-resilient rice commercialization will be promoted through improving the legal and regulatory environment that will encourage the production and distribution of improved quality seed; strengthen agricultural land management; strengthen farmers' organisations and promote contract farming; and facilitate domestic trading and milled rice exports. Examples of laws and regulations that will be reviewed include the following:

Laws on "Plant Protection and Quarantine", "Law on Agricultural Land Use and Management", Sub-Law and regulations under "Agricultural Cooperative Law", Sub-Law and regulations under Law on "the Management of Agro-Chemical and Fertilizer, Draft National Policy for Agricultural Cooperative Development, Sub-Decrees and Prakas under the Law on "Seed Management and Breeders' Rights", other Prakas related to "Fees for Plant Quarantine Inspection and Pest Control", Prakas on "Designation of Appointment as Juridical Police for Plant Quarantine Officers", and Amendment of Prakas on "Uniform, Symbol and Seal for Plant Quarantine Officers" etc.

- Agricultural land use planning will be improved both to identify areas suited to particular types of agriculture and to identify areas at high risk of flooding.
- Infrastructure deficiencies through the rice value chain will be addressed by construction of paddy drying and storage facilities; and construction of seed cleaning, drying, grading and storage facilities in selected provinces. Public Private Partnerships (PPPs) will be promoted for enhancing agricultural productivity.
- Rice value chains will also be strengthened through improving the availability and quality of commercial rice seed; improving rice extension services; capacity building of mill operators; and facilitating access to credit for farmers, traders and millers.
- Government role in extension will continue to include traditional direct training and support of farmers by government officials. However, there will also be a shift

towards building the capacity of extension staff to support and regulate extension services provided by the private sector and NGOs.

- Rubber production will be promoted for both existing private rubber estates, and small holders. Technical cooperation with international rubber research institutes for experience & technology exchanges for improving rubber research and development will be strongly focused and implemented.
- Strategic actions to respond to climate change impacts on rubber production will focus on the development of rubber clones adapted to climate change, research for new rubber clones, and increasing the technical capacity of staff to develop resilient rubber production and increase the Good Agricultural Practices (GAP) in rubber development.
- The progress development of Economic Land Concession will continue to be monitored and contracts for the concessionaires who fail to implement their investment contracts will be cancelled.

Indicators for Programme-1:

Indicator	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Area under all crops	Million ha	4.50	4.81	5.02	5.23	5.44	5.65
2. Rice Yield	Ton/ha	3.16	3.17	3.18	3.21	3.23	3.25
3. Paddy Surplus	Million Tons	4.82	5.24	5.41	5.60	5.79	6.00

Programme-2: Promote Animal Production and Animal Health

The Royal Government of the fifth legislature wishes to promote broader livestock farming through the introduction of a policy framework based on value chain principles that will reduce barriers to the development of this sector, taking into account issues of food safety standards and market regulation, especially sanitary and phyto-sanitary standards.

Objective of the Programme-2: To increase the growth rate of animal production by 3% per annum through enhancing effectiveness of research and extension; improving capacity of animal disease and zoonosis prevention, thereby ensuring the supply of animal and meat with sanitation and safety, and increasing export potential.

To reach this objective, the Ministry of Agriculture, Forestry and Fisheries will focus on the following strategic approaches:

- 1- Promoting the development and implementation of livestock farming policy and strategy.
- 2- Enhancing the research and development on breeding, animal health, feeding production and livestock farming system.
- 3- Implementing the strategic measures to response to climate change impact in livestock production, taking into accounts of animal scientific development and techniques for capacity strengthening and extension programme, implementation of intervention measures, animal waste management, strengthening the law implementation and other principles.
- 4- Promoting the adoption and implementing the law on animal health and production to provide the basic for the institutional arrangement and management of this sector, aimed at strengthening the enforcement of sanitary standards for animal products, and strengthening and enforcing animal sanitary and phyto-sanitary measures to prevent and combat the outbreak of animal diseases, and to protect public health.
- 5- Encouraging investments in medium and large-scale animal feed production to support livestock farming, along with improvements in the extension services system, animal breeding, credit and market access for farmers, incentive for private investment in processing of livestock, establishment of modern slaughterhouses as well as facilitation of trade in livestock and meat products.

Indicators for Programme-2:

Indicator	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Livestock Production (All kind)	Million Heads	34.81	35.86	36.93	38.03	39.17	40.34
2. Ratio of Animal Vaccinated	%	-	10	12	15	17	20
3. Slaughter House implemented GHP	No. of Slaughter House	-	25	50	75	100	125

Programme-3: Sustainable Fisheries Resources Management

The Royal Government of Cambodia (RGC) focused on fisheries reform aimed at livelihood improvement, addressing the food security and nutrition needs of the population and preserving fishery resources through organizing fishery communities, conservation of flooded forests, combating illegal fishing, and promotion of aquaculture for contributing to national economic growth and poverty reduction.

The RGC has deepened fisheries reform by cancelling all the fishing lots and making them available for artisanal fishing, strengthening and expanding fisheries communities and fisheries conservation zones, and implementing measures to protect inundated forest, especially in the areas surrounding Tonle Sap Lake which is an essential breeding habitat of many aquatic species.

To reach the policy goal, and objectives in the National Strategic Development Plan 2014-2018, The Ministry of Agriculture, Forestry and Fisheries (MAFF), has defined 3 main targeted measures as follows:

- Achieve the 5 years targets (2014-2018) as also stated in the 10 years Strategic Planning Framework for Fisheries, 2010-2019.
- Continue to prepare and implement a complete strategy for the regional cooperation, by defining internationally-related challenges for the fisheries in Cambodia including climate change, hydro-electric power plants, and environmental degradation.
- Ensure the annual per capita fish consumption at 52.4 kg for the Cambodian population.

Objective of the Programme-3: “To increase the fisheries resources protection and conservation efforts by effective law enforcement, eliminating all types of illegal fishing activities, strengthening fisheries management capacity for 100 Fisheries' Communities annually and promoting the aquaculture development by 15% per annum for ensuring the sustainable fisheries resources and to improve the quality and safety of fishery products for domestic uses and export”.

In response to the targets, MAFF will focus on the following priorities:

- Further implementing Strategic Planning Framework for Fisheries 2010-2019 with the aim of boosting fish production to serve domestic consumption and export markets by relying on three pillars: (1) sustainable management of freshwater and marine-based natural fisheries; (2) promotion and development of freshwater and marine aquaculture; and (3) enhancement of fisheries processing and trade for local consumption and exportation.
- Further strengthening the sustainable management and preservation of fishery resources according with the “Strategic Planning Framework for Fisheries 2010-2019” and “Policy Statement for Fisheries”. This can be done by the combat against all forms of illegal fishing, the strengthening of the management of fishing tools, the elimination of over-fishing, the development of human resources of fishery communities (management, use, and preserve fishery resources), the protection of biodiversity and aquatic animal habitat, the quality control of freshwater and seawater by minimizing poisonous substances, the conservation of flooded forests and mangrove forest, the demarcation of flooded forests and fishery conservative areas; and the capacity building human resources, especially research and extension.
- The promotion of aquaculture is essential for increasing fish for consumption, along with the supports to be provided to aquaculture farms in terms of techniques, fish

breeding, credits and market access. The improvement of law implementation through the use of existing mechanisms that is the priority for protecting the fishery resources.

Indicators for Programme-3:

Indicator	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Aquaculture Production	000' Ton	90	120	144	172	207	250
2. Capture Fisheries Production (Inland and Marine)	000' Ton	600	600	600	600	600	600
3. Rate of processor improved quality and safety fishery products	%	2	5	10	15	20	25

Programme-4: Sustainable Forestry & Wildlife Resource Management

The strategic objective of the Royal Government focused on the management and conservation of natural resources to ensure the sustainability of economic growth and improvement in livelihoods of rural population by further implementing “National Forestry Programme”, monitoring forest exploitation, enforcing the Law on Forestry and strict measures against forest offenses; strengthening the management of protected areas, and deepening the reform of forestry sector.

the Royal Government of the Fifth Legislature will reinforce and broaden the management of natural resources to strike a **“balance between development and conservation”**, in particular, increase the contribution of natural resources to the development of agriculture sector by ensuring: (1) green cover, forest and wildlife conservation; and (2) the sustainability of the ecosystem, so that the quality of land and sustainability of water sources could be improved by focusing on the protection of biodiversity, wetlands and coastal areas.

Objective of the Programme-4: “To strengthen the sustainable management of forestry and wildlife through law enforcement, promoting reforestation at least 25,000 ha per year; create the protected forest and wildlife conservation with 50,000 ha/year; and establish 32 forestry communities per annum”.

To reach this objective, the Ministry of Agriculture, Forestry and Fisheries will focus on the following strategic approaches:

- Further managing forest and wildlife resources in a sustainable and equitable manner, in accordance with the **“National Forestry Program”**, in particular through better law

enforcement and governance, demarcation, classification and registration of forest, effective management and exploitation of state and private forests.

- Implementation of measures for improving the livelihoods of economic efficiency and promoting participation from forest-dependent communities, enhancement of management and effectiveness of conservation measures, reduction of deforestation and degradation of forests.
- Intensified tree planting and forest rehabilitation, strengthening the conservation of wildlife and wildlife sanctuaries, development of institutional and human capacity, and promotion of research studies and their dissemination.
- Intensifying the implementation of necessary measures to ensure the sustainability of the ecosystem, aimed at ensuring the quality of soil, and surface and underground water for serving the agriculture sector and the livelihood of Cambodian people by promoting the preparation and effective implementation of policies and regulations, as well as related action plans and programs for the management of protected natural areas such as national parks, wildlife sanctuaries, protected landscape areas, natural heritage conservation areas.
- Stepping up cooperation with relevant development stakeholders under the framework of the “**National Policy on Green Development**” and the “**National Strategic Plan on Green Development 2013-2030**” through the development of regulatory frameworks and mechanisms for carbon trading, strengthening the capability, preparation and implementation of climate change adaptation measures.

Indicators for Programme-4:

Indicator	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Protected Areas and Wildlife Conservation Areas	Million ha	1.50	1.55	1.60	1.65	1.70	1.75
2. Reforestation	ha	17,950	20,280	22,300	24,500	27,000	29,700
3. Forestry Communities established and strengthened	No. of Community	457	489	520	550	570	600

Programme-5: Strengthening Institutional Capacity, enhancing efficiency of supporting services and Human Resource Development

In order to promote the agricultural sector, the strengthening of institutional capacity, the enhancing of efficiency of supporting services and human resource development are a priority action to be implemented.

Objective of the Programme-5: “To increase the effectiveness of institutional management, service delivery, and strengthen the capacity for agricultural education and training for the sustainable agricultural development”.

To reach this objective, the Ministry of Agriculture, Forestry and Fisheries will focus on the following strategic approaches:

- Strengthening Institutional Capacity: promote technical departments under MAFF to have enough capacity in implementing the policies for sustainable agricultural sector development.
- Enhancing Efficiency of Supporting Services: increase capacity in building and implementing the strategic plan; strengthen agricultural information and marketing system, management of public and private investment, improve the effectiveness and the efficiency for implementing the programme budgeting, inspection, auditing, international cooperation and other supporting services.
- Human Resource Development in Agricultural Sector: improve the knowledge on techniques and other agricultural skills, efficient research on appropriate technologies aiming to strengthen human resources in agricultural sector in order to respond to the labor market need and the agricultural development.

Indicators for Programme-5:

Indicator	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Ratio of Activities achieved in Programme Budgeting	%	91	93	94	95	95	95
2. Students graduated	No. of Student	1,920	1,950	1,950	2,000	2,000	2,000
3. Staff obtained local and oversea training	No. of Staff	280	290	300	310	320	350

F. Sub-Programs and Action Plans by Sub-Sectors

To achieve the main goal of the Ministry, as well as the RGC’s National Strategic Development Plan, the Ministry of Agriculture, Forestry and Fisheries has clearly defined 5 “**Programmes**” supported by “**Sub-Programmes**” for implementing this strategic plan. The Sub-Programmes and Activities to be carried out are mentioned below:

Programme-1: Enhancement of Agricultural Productivity, Diversification, and Commercialization

1.1. Sub-Program 1.1: Technical Facilitation and Increase Institutional Capacity

Objective: “To enhance capacity in formulating and implementing development plan for agricultural production and supporting services with efficient manner”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Efficiency rate of budget implementation	%	95	96	96.5	97	97.5	98
2. Agricultural stations, development centers and farms to be developed	No. of Agricultural stations	1	2	4	6	8	10

Activities:

1. Effective implement of General Directorate of Agriculture's framework through capacity building to prepare work plan and budget and programme budgeting monitoring and evaluation and management of state property.
2. Expanding the restoration and construction of physical infrastructure at agriculture farm, agriculture station and agriculture center for the purpose of seed production, on farm trial and research and transfer technology for crop production to all farmers and producers.
3. Implement gender policy and strategy in agriculture through gender awareness and gender mainstreaming in agricultural production and encourage women's participation in leadership and management of agricultural cooperative.
4. Increase the spirit of competition, recognition, innovation, exchange visit and experiences among farmers for agricultural development through annual farmer congress forum.

1.2. Sub-Program 1.2: Promote Sustainable Management of Agricultural Land Resources

Objective: “To improve soil fertility, land use zoning and classification for effective agricultural land use, and reduce soil degradation and adapt to climate change.”

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Map of the soil classification and the agricultural land use to be determined and developed	No. of map by district	18	27	38	51	66	83
2. Areas of cultivated land to be improved	Hectares	420	630	855	1,090	1,340	1,615

Activities:

1. Maintenance and improvement of soil fertility as the basic element for sustainable crop intensification through the increasing technical knowledge on soil fertility management, particularly encouragement for use of organic fertilizer and proper use of chemical fertilizer following the technical standard.
2. Assessment and collection of baseline data for evaluation of agriculture land deficiency, cropping zone, soil classification for rice production in order for preparation of agriculture land use to improve intensification and diversification in a sustainable way. Disseminate the land mapping.
3. Strengthen the capacity for climate change adaptation into the agricultural production system through the upgrading of climate change adaptive research activities for agricultural production system, identification of vulnerable areas caused by natural disaster such as flood, drought and salt water penetrating area as the critical element for preparation of strategic plan and work plan for risk mitigation in agriculture sector.
4. Speed up the drafting of law on agriculture land use and management and related regulation and technical documents as guiding tool to ensure sustainable use of agriculture land.

1.3. Sub-Program 1.3: Promote Rice Production Development

Objective: “To increase rice productivity to ensure food security and rice exportation through the development and utilization of good quality rice seed and proper techniques with the efficient manner”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Rate of farmers household using pure rice seed	%	20	25	30	35	38	40
2. Rice yield	Ton/ha	3.16	3.17	3.18	3.21	3.23	3.25

Activities:

1. Conduct research, development, production and extension of potential and high quality rice seed adaptive climate change and market needs.
2. Conduct research and development of technology for rice production responsive to geographical agro-ecology system in order to promote production, upgrade product quality and economic efficiency.
3. Develop technical documents and provide training to technical staff at national and sub-national level on rice production technology and post harvesting technology in order to strengthen the capacity of production and increase yield in an economic efficient way and high quality of product responsive to market demand and high returns.
4. Develop policy, strategy and regulation in order to promote the rice production and quality control compliant to national and international standard and requirement.
5. Conduct survey, data analysis and organize forum for exchanging of technical experiences, challenges and solutions relevant to production and evaluation of results achieved.

1.4. Sub-Program 1.4: Promote Horticultural and Subsidiary Crops Development

Objective: “To increase horticultural crop productivity and production for local demand and export through improving research and development on horticultural production techniques with providing high yield, resistant to pest composition, and climate change adaptation”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Cultivated areas of vegetable crops	Thousand hectares	52	55	58	61	64	67
2. Vegetable Production	Thousand tons	423	444	466	489	513	539
3. Cultivated areas of fruit crops	Thousand hectares	79	83	87	91	96	101

Activities:

1. Conduct research, development, production and extension of potential and high quality horticultural seed and secondary crop seed adaptive to climate change and market needs.

2. Conduct research and development of technology for horticultural and secondary crop production responsive to geographical agro-ecology system in order to intensify and diversify, upgrade quality of product and economic efficiency.
3. Develop technical documents and provide training to technical staff at national and sub-national level on horticultural and secondary crop production technology and training farmers on production technology, secondary crop seed production, good agriculture practices and post-harvest technology in order to modernize horticultural and secondary crop production in an economic efficient way and high quality of agricultural product to ensure quality standard and safety.
4. Develop and disseminate legal and technical documents as tools and guidelines for the horticultural and secondary crop development.

1.5.Sub-Program 1.5: Promote Industrial Crops Development

Objective: “To increase productivity of industrial crops in order to support local processing activities and exportation through conducting research, development and dissemination on production techniques”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Cultivated areas for industrial crops	Thousand hectares	832	857	881	905	929	954
2. Industrial crop production	Million tons	9.80	10.20	10.50	10.90	11.30	11.70

Activities:

1. Conduct research, development, production and extension of potential and high quality agro-industrial crop seed adaptive to climate change and market needs.
2. Conduct research and development of technology for agro-industrial crop production responsive to geographical agro-ecology system in order to intensify and diversify, upgrade quality of product and economic efficiency.
3. Develop technical documents and provide training to technical staff at national and sub-national level on agro-industrial crop production technology and training farmers on production technology, agro-industrial crop post-harvest management, and good agriculture practices in order to modernize agro-industrial crop production in an economic efficient way and high quality of agricultural product to ensure quality standard and safety.
4. Develop and disseminate legal and technical documents as tools and guidelines for the agro-industrial crop development.

1.6.Sub-Program 1.6: Strengthen the Development and Utilization of Agricultural Machinery and Equipment

Objective: “To increase the utilization of agricultural machinery and equipment effectively in order to contribute to poverty reduction, ensure food security and adapt to climate change.”

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Land Preparation by using agricultural machinery	%	60	65	70	75	80	85
2. Rice harvest by using agricultural machinery	%	7	10	15	20	25	30

Activities:

1. Conduct research, experiment works for improvement of agricultural machinery and equipment supporting to agricultural production chains and agricultural processing which will be suitable for different kind of crops, soil condition, geographical area and affordable by the users.
2. Conduct technical training and dissemination on operation and maintenance of agricultural machinery and equipment to government staff at national and sub-national level and farmer through provision of training courses, demonstration and agricultural machinery supporting activities.
3. Improvement of cultivation land and on farm irrigation system following technical norm in order to increase productivity and profit and resilient to climate change.
4. Develop and disseminate relevant legal and technical documents for development and management of agricultural machinery.

1.7.Sub-Program 1.7: Enhance Plant Protection, Sanitary and Phyto-sanitary Measure

Objective: “To reduce production loss, and assure quality and safety of agricultural products for domestic consumption and exportation”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Pest rescue rate	%	50	70	75	80	85	90
2. Agricultural products accepted in the international markets	Thousand tons	2,900	3,190	3,480	3,770	4,060	4,350

Activities:

1. Conduct research, prepare list and take measure to eliminate pest composition on crop and storage conditions.
2. Conduct technical training on crop protection and sanitation to government staff at national and provincial level and farmers through provision of training courses, demonstration and other intervention activities.
3. Improve agricultural productivity, quality and safety through capacity building on good agricultural practices (GAP) and monitoring & evaluation of potential risk.
4. Risk prevention on pest composition within Cambodia through the acceleration of monitoring and evaluation on importation of goods and agricultural product which is the subject matter phyto-sanitary inspection in conformity with standard phyto-sanitary measure in force.
5. Develop and disseminate legal and technical document as guidance for development, management and protection of plant and phyto-sanitary.

1.8. Sub-Program 1.8: Strengthen and Improve Agricultural Extension Services

Objective: “To improve the agricultural extension system and services, and increase the growth of effective implementation by the farmers”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Rate of farmers household received agricultural extension services	%	25	28	30	35	38	40
2. Number of trained extension workers	Person	10,500	11,100	11,700	12,300	12,900	13,500

Activities:

1. Strengthen agricultural extension system through institutional and legal framework improvement for agricultural extension, monitoring and evaluation of agricultural extension service and effectiveness of adoption of agricultural extension service and updating the database of agro-ecosystem analysis (AEA) and conducting research on farm economy.
2. Human resource strengthening and developing at national and sub-national level in order to increase the outreach of agricultural extension service to production community in the whole country through the development of guideline and guidebook for agricultural technical extension and training in technical skills and

participatory development skills to staff at national and sub-national level, particularly commune extension worker and village agriculture extension workers.

3. Increase the scope of accessing agricultural technical information and relevant services through the development and compilation of agricultural technical package, publication and dissemination of agricultural technical document, training activity, demonstration and dissemination through public media. Consider selecting and using model farmers as trainers.

1.9. Sub-Program 1.9: Promote Agricultural Communities Development

Objective: “Establish and strengthen capacity of agricultural communities to increase the effectiveness of the value chain system in agricultural production and marketing.”

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Communities established and registered	No. of community	480	550	580	600	620	640
2. Leaders and members of community trained	Person	1,756	3,847	5,597	7,472	9,672	12,072
3. Communities capable to run business activities	No. of community	2	4	6	8	10	12

Activities:

1. Facilitate the establishment and registration of agricultural cooperative in order to enable integrated agricultural development in partnership with private sector in light of accessing new technology and credit and ensure stable supply of product to local and international market.
2. Develop agricultural cooperative to become the rural agricultural enterprise by enable members of the cooperative to access capacity building on the leadership and management, business plan preparation, annual report and accounting report preparation and agricultural marketing through participation in training course, workshop and other national and international forum.
3. Facilitate the development of business activities of the agricultural cooperative through the organization of business forum, learning and experience exchange workshop and study tour, etc. in order to enable agricultural cooperatives to find out business partners and increase market price negotiation power which will lead to increasing of household income.
4. Conduct dissemination of agricultural cooperative law and develop legal framework, legal document and mechanism in order to enforce the full implementation of agricultural cooperative law.

1.10. Sub-Program 1.10: Strengthen and Develop Capacity of National Agricultural Laboratory (NAL)

Objective: “To strengthen the technical capacity in analytical works and quality control on soil, fertilizer, water, pesticides, agricultural chemical residues, and technology in order to increase agricultural productivity, quality, and safety of agricultural products for domestic consumption and exportation.”

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Samples to be tested	No. of sample	550	605	665	731	804	884
2. Methodologies / procedures to be developed	Document	34	37	40	43	46	49

Activities:

1. Strengthening and building capacity of laboratory services for relevant experiments by compiling technical protocol in conformity with international standard as basic scientific experiment and staff training.
2. Provide public support service for quality testing on agricultural inputs to make sure proper use of inputs for agricultural production.
3. Survey and quality control on fertilizer and agriculture medicine and risk of agriculture medicine on vegetable and fruit.
4. Develop legal and technical document for management of national agricultural laboratory.

1.11. Sub-Program 1.11: Promote the Investment and Development of Rubber Production with High Efficiency and in a Sustainable Manner

Objective: “To enhance the capacity in rubber production development aiming to increase both quantity and quality of rubber, strengthen capacity of household rubber producer communities, and increase the efficiency and effectiveness of sustainable rubber land use and management”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Rubber plantation areas	Thousand hectares	328.77	334.35	362.35	384.35	404.35	422.35
2. Rubber tapping areas	Thousand hectares	78.49	110.05	141.60	183.60	220.50	280.50
3. Rubber production	Thousand tons	86.24	121.53	157.10	206.50	262.50	333.07

Activities:

1. Conduct training courses on rubber tapping skill to small holder rubber producers.
2. Conduct the technical extension programmes for dissemination on rubber production techniques to small holder rubber producers.
3. Conduct field surveys for data collection on rubber production and geographical identification of the production areas for small holder rubber plantations.
4. Conduct Training of Trainers (TOT) on rubber production techniques.
5. Strengthen and establish associations or household rubber producer communities.
6. Conduct technical extension programmes on rubber production techniques via TV.
7. Conduct assessment surveys on suitable soil for rubber crop and rubber zonification.
8. Conduct study and assessment on the result and the effectiveness of workshops and trainings.
9. Conduct study on the profile of the small holder rubber plantations.
10. Produce and disseminate technical papers on rubber.

1.12. Sub-Program 12: Promote Rubber Value Chain

Objective: “Strengthen and promote the technical extension program and dissemination on rubber market in order to increase the incomes of household rubber producers, contributing to poverty reduction”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Rate of incomes received by household rubber producers	%	70	72	74	76	80	80
2. Number of household rubber producers trained on rubber market	Person	90	180	200	250	300	350

Activities:

1. Conduct training and disseminate on rubber market to household rubber producers, and encourage them to establish a rubber business center.
2. Disseminate information on rubber supply, demand, and price information to rubber producers.
3. Create a website on rubber information.

1.13. Sub-Program 13: Improvement of Rubber Quality

Objective: “Strengthen rubber processing techniques aiming to increase quantity and quality of rubber products in accordance with the standard requirements”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Rubber operators receiving training on processing techniques	Person	-	40	240	370	420	470
2. Rate of rubber product quality	%	71	73	75	76	78	80

Activities:

1. Carry out data collection on rubber processing factories and rubber processing enterprises.
2. Conduct dissemination on rubber sheet processing techniques (USS) to household rubber processors.
3. Conduct dissemination and training on rubber sheet processing to household rubber communities.
4. Establish rubber sheet processing (USS) center.

1.14. Sub-Program 1.14: Strengthen the Management and Human Resource Development in Rubber Sector

Objective: “Increase the effectiveness in the implementation of laws and regulations relating to the rubber development and increase technical capacity for rubber operators”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Rubber operators aware of regulations related to rubber development	Person	200	300	350	400	450	500
2. Rubber operators received training and increase their skills	Person	-	-	20	20	20	20

Activities:

1. Facilitate between agro-industrial rubber plantation owners to support household rubber plantation.
2. Prepare the draft law on rubber and related regulations under the laws.
3. Conduct dissemination on the regulations related to rubber development.
4. Conduct trainings to develop technical skill and capacity for rubber operators.
5. Conduct study on the requirement of human resources and labor force in rubber sector.

6. Conduct assessment on the result and effectiveness of implementation on the regulations related to rubber development.

1.15. Sub-Program 1.15: Strengthen Administration and Governance in Rubber Sector

Objective: “Increase the effective management and good governance in rubber sector”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Effectiveness of budget implementation	%	89	90	92	93	94	95
2. Staff training on Management & Governance	No. of courses	-	01	02	02	02	02

Activities:

1. Improve the efficiency in budget implementation.
2. Conduct training on the organization and management of sub-programs.
3. Conduct annual meeting.
4. Follow up the implementation of planning activities on rubber investments and conduct assessment on the results.
5. Administrative support and coordination.
6. Follow up and monitor the operations of the offices collecting rubber resin from household rubber producers.
7. Conduct investigation on the profile of agro-industry rubber plantations.

1.16. Sub-Program 1.16: Enhance Quality of New Rubber Seeds and Improve Quality of Cambodian Rubber Products

Objective: “To increase the effectiveness in using new rubber seeds adapted to climate change and improve rubber products with good quality and high price on the international market”.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Ratio (%) of certificate on rubber seed granted	%	10	20	30	40	50
2. Registration Rate of CSR	%	10	15	20	25	30
3. Farmers received training	Person	200	400	600	800	1.000

Activities:

1. Create new rubber seed nursery, seed maintaining and seed breeding.
2. Establish 2 larger scale field experiments for rubber clone.
3. Follow up the progress and conduct data collection on rubber field experiments for 5 regions.
4. Maintain experiment field, rubber seed nursery at the rubber research stations.
5. Management and maintenance of immature rubber plantations and rubber matured plantations.
6. Conduct research on fertilizer application on rubber production in immature rubber plantations and rubber matured plantations.
7. Create and implement research programs on rubber field experiments.
8. Conduct dissemination on new rubber production techniques: planting, cloning and maintaining of rubber trees.
9. Conduct experiment and research on soil quality for rubber production development.
10. Follow up rubber taping system at the station.
11. Conduct analysis on rubber resin organs, and field experiments in the station on TSC, Inorganic, Sucros and Thiol.
12. Conduct training on rubber tar harvesting techniques.
13. Conduct testing on rubber quality in the inter-laboratory with IRA.
14. Conduct testing on rubber quality with local laboratories.
15. Conduct monitor on factories CSR and Lab CSR.
16. Carry out the internal and external audit by international standard audit firm ISO/IEC17025.
17. The overall expenses for research and experiment process.
18. Contribution to IRRDB and sending resin sampling.

1.17. Sub-Program 17: Promotion and Enhancement Agro-industrial Development

Objective: the main objectives for are: (i) to promote value added of agricultural products and job opportunities for rural people through capacity building of agro-industrial skills and quality and safety improvement of agricultural products. (ii) to link market through contract farming.

Indicators:

Indecators	Unit	2013	2014	2015	2016	2017	2018
1.Targeted farmers and stakeholders were trained on agro-industrial skills	Persons	1,110	1,110	1,500	1,750	2,000	2,250
2. post harvest and agro-processing enterprises will be increased and quality and safety of agricultural products will be improved	%	5	5	5	5	5	5
3. Market access of agricultural products will be increased	%	5	10	10	10	10	10

Activities:

1. Training on agro-processing skills
2. Training on standards, quality, and safety of agricultural products
3. Training on contract farming and legal frameworks
4. Training on post harvest technologies of agricultural products
5. Contract farming facilitation between producers and buyers
6. Training on monitoring and evaluation of economic land concession companies for provincial agro-industrial officers
7. Constructing a training center on agro-industrial technologies
8. Database development on agro-industrial enterprises
9. Agro-industrial cluster development
10. Policy, laws, and regulations development on quality, safety management of agricultural products
11. Engagement of climate change adaptation and mitigation through using of appropriate technologies of post harvest, transportation, drying, storage, processing, and packaging of agricultural products
12. Engagement of GHG mitigation through research and development on appropriate post harvest, agro-processing, and packaging of agricultural products
13. Engagement of GHG mitigation through management and usage of all agricultural and agro-industrial wastes and processing of wastes into fertilizers, and feeds
14. Engagement of GHG mitigation through training on appropriate technologies to agro-industrial enterprises
15. Training laboratory officers on quality and safety analysis of agricultural products
16. Laboratory equipment supply for quality and safety analysis of agricultural products
17. Laboratory officer health assuring

1.18. Sub-Program 1.18: Strengthen Research on the Promotion of Agricultural Crops Productivity

Objective: To promote the conservation and utilization of plant genetic resources by developing plant varieties, well adapted to climate change and good quality acceptable to markets' demand, and researching new technologies useful as agricultural inputs for enhancing agricultural productivity.

Indicators:

Indicators	Unit	2012 (Achieved)	2013	Forecast				
				2014	2015	2016	2017	2018
1. Number of germplasm collected	Sample/ Accession	6,171	200	100	100	100	100	100
2. New plant varieties released	Variety	50	1	2	1	2	1	3
3. New technologies developed and recommended	Technology	32	9	7	6	7	10	9

Activities:

1. Collect, evaluate, conserve and utilize plant genetic resources for food and agriculture.
2. Develop lowland rice varieties tolerant to abiotic and biotic stresses for high yield and good grain quality.
3. Develop early rice varieties tolerant to brown plant hoppers for high yield and good grain quality.
4. Develop variety of legumes, sesame, maize, mango vegetables for high yield and quality.
5. Study and develop technologies and knowledge for technical management of soil sustainability and determine crop nutrient requirement for rice and cassava production system.
6. Study and develop technologies and knowledge for technical management of irrigated water for economic value and environmental sustainability.
7. Study and develop technologies and knowledge for technical management of rice pests such as golden apple snail, hoppers, diseases and weeds and soybean insects.
8. Study and develop technologies and knowledge for technical management of pre harvest for rice responding to the utilization of agricultural machineries.
9. Study time and methodologies in harvesting rice and maize by combined harvester.
10. Study affected factors to quality and safety of preliminary packaging and transporting leaf vegetables and banana.
11. Study and develop grading tool for grain of rice and mungbean
12. Study and evaluate capability of rural communities in adopting and using CARDI released technologies responding to climate change.
13. Study and evaluate impact of adopting and using CARDI new released technologies responding to rural socio economy.

1.19.Sub-Program 1.19: Strengthen Research on the Promotion of Agricultural Crops Diversification and Extension of Technology

Objective: To enhance the development of technology package for rice based diversification suitable to farmers' cultural practices and their socio economy and to promote the extension of agricultural technology and seeds of new plant varieties potentially to production and export.

Indicators:

Indicators	Unit	2012 (Achieved)	2013	Forecast				
				2014	2015	2016	2017	2018
1. Technology package for rice based diversification developed and recommended	Technology	3	-	2	1	1	1	1
2. Increase in areas cultivated by new rice varieties and technologies released by CARDI	Percentage	30	2	2	2	2	2	2
3. Quantity of rice seed with high purity and promising quality produced and disseminated by CARDI	Metric ton	46	50	50	55	55	60	60

Activities:

1. Develop package of technology suitable for rice based farming system focusing on environmental and economic sustainability in the rainfed lowland, irrigated and coastal region.
2. Study conservation agriculture in Cambodia.
3. Promote CARDI technology to market through rice contract farming of Phka Rumduol, Phka Romeat and Sen Pidao.
4. Promote CARDI rice seed production system and utilization of the seeds
5. Improved CARDI information technology for R&D dissemination to stakeholders.

1.20. Sub-Program 1.20: Increase in Efficiency and Effectiveness of Support Services and Develop Research Professionals for Agricultural R&D

Objective: To enhance capacity and skills of research managements and researchers for the improvement of supporting services and to further development of physical research infrastructure for supporting the agricultural technology development.

Indicators:

Indicators	Unit	2012 (Achieved)	2013	Forecast				
				2014	2015	2016	2017	2018
1. Number of post graduated staff and training opportunities	Opportunity	128	132	105	105	105	105	105
2. Number of Internationally published scientific papers	No. of paper	150	1	2	3	5	6	7
3. Growth of effectiveness in providing research services to stakeholders	Percentage	100	2	2	2	2	2	2

Activities:

1. Increase in effective management, good governance, developed human resources, agricultural services and research infrastructures and facilities supporting to CARDI sustainability and innovation.
2. Increase in capacity and skill supporting to scientists, researchers and extension workers through in country and abroad trainings.

1.21. Sub-Programme 1.21: Increase Agriculture Productivity of Municipal/Provincial Department of Agriculture (MDA/PDA)

This Sub-Programme is the consolidation of cluster of all activities for implementation by 25 MDA/PDA which will contribute to achieve the objective and indicators of Programme 1: ***“Enhancement of Agricultural Productivity, Diversification and Commercialization”***.

2. Programme-2: Promote Animal Health and Production

2.1- Sub-Programme 2.1: Improve Animal Production and Increase Animal Productivity

Objective: Improve the animal production and increase animal productivity.

Indicators:

Indicators	Unit	2013	2014	2015	2016	2017	2018
1- Number of animal farms complied with technical guideline	Places	-	-	30	60	100	200
2- Number of pig increased 2% per year	Million Head	2.40	2.45	2.50	2.54	2.60	2.65
3- Number of Poultry increased 4% per year	Million Head	27.31	28.39	29.52	30.70	31.90	33.20

Activities:

- 1- Develop and publish the technical documents related to bio-safety techniques of household and farm animal production following GAHP principles.
- 2- Conduct the dissemination programme on bio-safety techniques of animal production for household and farm following GAHP principles to all stakeholders involved in livestock production.
- 3- Conduct technology transferring on bio-safety techniques for household animal production.
- 4- Conduct demonstration on animal production at farm following GAHP principles
- 5- Strengthen capacity of staff on the techniques of animal production.
- 6- Monitor and evaluate the effectiveness of principle enforcement on GAHP.
- 7- Promote the management of animal waste and establish bio-digesters.
- 8- Establish the management system for animal data, appearances and ID.
- 9- Inspect the animal production management at municipalities and provinces.

2.2- Sub-Programme 2.2: Strengthening of Animal Health Services and Infectious Disease Prevention

Objective: Increase animal disease control to reduce infectious disease spread-out and prevention and improve animal health.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Vaccinate FMD (Cow and Buffalo)	%	2	2	4	6	8	10
2. Vaccinate Salmonellosis (Cow and Buffalo)	%	40	45	50	55	60	65
3. Number of staff trained	Persons	-	250	350	450	550	650

Activities:

- 1- Research for identification of the risk areas of infectious disease.
- 2- Strengthen staffs' capacity and stakeholders on technique, veterinary rules and animal health management.
- 3- Conduct nationwide animal infectious vaccination campaign.
- 4- Monitor and evaluate nationwide animal infectious vaccination campaign.
- 5- Manage animal health situation, prevent animal infectious disease and implement veterinary rules.
- 6- Support animal health cooperation services to village animal health workers.
- 7- Follow up and assess works related to the animal health, management and infectious disease prevention.

2.3- Sub-Programme 2.3: Strengthening the Inspection Works and Quarantines

Objective: To strengthen the animal sanitation inspection and control the movement of animal products, feeds and livestock medicines.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1- Number of quarantine stations established	Stations	-	-	1	1	1
2- Number of animal movement inspection	Missions	50	100	200	300	400
3- Number of depots of animal medicine, feed, and materials inspected	Places	-	50	100	150	200

Activities:

- 1- Conduct feasibility study to identification of areas for establishment of animal quarantines.
- 2- Establish animal quarantine stations and operating expenses.
- 3- Monitor and manage the movements of animal and meat products.
- 4- Inspect and manage the business depots involved with animal medicine, feed and veterinary equipment.

- 5- Conduct the training programmes for capacity strengthening to the staff and stakeholders on the inspection techniques, veterinary rules/regulations and animal movement management.
- 6- Conduct dissemination to involvers on technical standard related to agricultural sector and animal health.

2.4- Sub-Programme 2.4: Improvement of Public Health, Strengthening Slaughterhouse Management, and Zoonotic Disease Prevention

Objective: Protect and prevent the infectious diseases and ensure safety meat and meat production for improving public health.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1- Number of slaughterhouses improved techniques	No.	-	-	25	50	75	100
2- Number of trained staffs and stakeholders	Persons	-	450	500	600	700	800
3- Monitoring and evaluation of animal sanitation inspection, meat and products	Times	18	20	22	25	28	30

Activities:

- 1- Prevention and protection animal disease transmit from human to animal and vice versa and public health.
- 2- Follow up and monitor slaughterhouse management, meat sanitation and meat showroom at market (slaughterhouse and meat showroom follow the technical norm).
- 3- Conduct capacity training to staff and stakeholders on slaughterhouse inspection and meat product.
- 4- Conduct dissemination on regulations and procedure relevant to slaughterhouse management, animal and meat sanitation inspection.

2.5- Sub-Programme 2.5: Disease Surveillance and Animal Diagnosis

Objective: To identify the sources of animal disease, report and timely respond the animal disease.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Number of trained staffs and stakeholders	Person	200	250	300	350	400
2. Number of monitoring,	Time	15	20	25	30	35

surveillance of AI, FMD, CSF, PRRS and HS						
3. Number of Samples diagnosis	Sample	9,222	9,683	10,167	10,675	11,208

Activities:

- 1- Investigate, and search animal diseases.
- 2- Conduct staff capacity training related to investigation, inspection, and search for animal disease.
- 3- Train and strengthen capacity of lab staff on animal diagnosis.
- 4- Search for disease sources in case of pre and post infectious disease outbreak.
- 5- Equip tools, equipment and materials for the operation of animal disease diagnosis lab.
- 6- Manage and prevent Bird Flu (H5N1) and humans.
- 7- Health guarantee and bio-safety of lab staff.
- 8- Conduct the study on animal infectious disease in Cambodia.
- 9- Establish reporting mechanism of animal disease situation.
- 10- Monitor and evaluate the implementation of animal surveillance, animal disease research and diagnosis.

2.6- Sub-Programme 2.6: Research on Animal Production, Genetic, Feed, and Breeding

Objective: To improve animal breed and feed quality, and breeding improvement aiming to increase animal production.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Number of produced breed piglet	Head	500	750	830	910	1,000
2. Number of produced semen	Dose	200	200	220	240	260
3. Number of sample and feed analysis	Sample	-	-	50	55	60

Activities:

- 1- Develop and publish technical documents and norms, and dissemination.
- 2- Conduct experiment and research on the raw materials, animal feed and composition and other additives.
- 3- Conduct research works for animal breed, genetic and breeding.

- 4- Conduct experiment and research pig breed at Cam-Sino Pig Breeding Demonstration Farm.
- 5- Conduct experiment and research on cattle breed at Phnom Ta Mao Cow Breeding Farm.
- 6- Conduct experiment and research on poultry breed to extend to the farmers.
- 7- Monitor and value the implementation of investigation, surveillance and diagnosis.

2.7- Sub-Programme 2.7: Strengthen Entity Capacity, Law Enforcement and Human Resources Development in Animal Production

Objective: To increase entity management through strengthening the capacity of staff, and law and regulation enforcement.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Number of trained staff and stakeholders	Person	-	120	120	120	140
2. Number of staff and stakeholders to be aware the law and regulations enforcement	Person	50	120	120	120	140
3- M&E and dispute solution	No. of Mission	-	15	20	30	40

Activities:

- 1- Develop and publish the regulation related to the animal health and production.
- 2- Enforcement of law and regulations related to animal production and health.
- 3- Strengthen M&E mechanism and conflict solution related to animal production and health.
- 4- Strengthen technical capacity for the staffs and concerned stakeholders on administrative management affairs, law enforcement and technical norms of animal production and health.
- 5- Support administrative coordination affairs to support the development of livestock production.
- 6- Promote the implementation of law and legal documents on animal health and production sub-sector.

2.8- Sub-Programme 2.8: Strengthen the Implementation of Policy, Strategic Development Plan and Budgeting, and Increase Effectiveness of Animal Production Support Services

Objective: Strengthen capacity of formulation and implementation of policy, strategy, development plan and budgeting of animal production and health, and coordinate works to increase effectiveness of supporting service and evaluation.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Number of staff and stakeholders trained	Person	-	120	150	150	150
2. Number of M&E mission	Time	-	30	35	35	40
3. Number of concerned stakeholders received policy and strategy dissemination	Person	-	200	250	300	350

Activities:

- 1- Organize meeting and workshop on animal health and production activities participating by government staff at national and provincial level and concerned stakeholders.
- 2- Bilateral meeting on animal health and production
- 3- Monitoring and evaluation on the implementation of policy, program, strategic development plan in animal health and production, projects funded by development partner, projects funded by budgeting programme and the implementation of regulations relating to programme budgeting.
- 4- Implementation of international animal health standard including the contribution by international organization (OIE).
- 5- Operating support, staff salary, staff hire and supply of machinery and equipment.

2.9- Sub-Programme 2.9: Promote Technical Extension for Animal Husbandry and Health

Objective: To increase the technical extension by disseminating the techniques of animal production, preventing animal diseases and information on animal health and production to farmers and animal producers.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Number of trained officials and stakeholders	Person	100	200	400	600	800
2. Number of livestock communities established	Community	-	1	3	3	2
3. Number of farmers obtained the animal promotion extension services	Person	500	1,200	1,200	1,200	1,200

Activities:

- 1- Develop and publish technical documents on animal production techniques, animal diseases and information on the animal health and animal production.
- 2- Conduct dissemination on animal production techniques, animal disease controls and animal production information.

- 3- Strengthen capacity of staff on animal production techniques, animal diseases and information on animal health and production.
- 4- Support the publication of technical printing documents on the animal production technique, animal disease and information on animal health and production.
- 5- Support the operation: transportation, machineries, equipment and tools for dissemination, information collection, education and communication (IEC),
- 6- Establish animal production communities and village animal health workers at local levels.
- 7- Conduct propagandas to disseminate animal health and production at the provinces
- 8- Construct training centers for extension works and dissemination on animal health and production.

2.10 Sub-programme 2.10: Promote Animal Health and Production Activities of Municipal/Provincial Department of Agriculture (MDA/PDA)

This Sub-programme is the consolidation of cluster of all activities for implementation by 25 MDA/PDA which will contribute to achieve the objective and indicator of Programme 2: ***“Promote Animal Health and Production”***.

3. Programme-3: Sustainable Fisheries Resources Management

3.1 Sub-Programme 3.1: Strengthening the Community Fisheries (CFi) Management and Development

Objective: Strengthening the participation and improving the CFi capacity on sustainable fisheries management, conservation and development.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Community Fisheries registered	No. of CFi	360 Accumulate	377	427	477	516	516
2. Registered CFi strengthened effectively	No. of CFi	100	100	100	100	100	100
3. CFi livelihoods improved and income increased	No. of CFi practiced	10	20	30	40	50	60

Activities:

1. Preparation of boundary demarcation and mapping, and related legal documents for registration of CFi.
2. Prepare CFi agreement.
3. Prepare and implement CFi Area Management Plans (CFiAMP), including business plans and streamlining into commune development plan to become the CFi model, where no illegal fishing activities (including child labour's elimination, women enhancement and responding to climate changes).
4. Re-election of CFi committees which are expiration mandate.
5. Amendment of related legal framework for CFi management and development.
6. Establish and improve CFi conservation areas/fish sanctuary zones.
7. Strengthening and improvement of livelihoods (including gender responsive, climate resilience and child labor elimination) of CFi members.
8. Establish and strengthen CFi patrolling groups.
9. Organize CFi workshop at national and sub-national on the progress of CFi implementation.
10. Strengthening CFi capacity and disseminating fisheries law and sub-decree on Community Fisheries Management.
11. Coordinate and promote the establishment of fisheries eco-tourism at CFi sites.
12. Coordinate and promote exchange visits on sharing experiences and lessons learnt on CFi management and provide training courses.
13. Monitor and evaluate the effectiveness of CFi management.
14. Reducing vulnerability of the Communities Fisheries.

3.2 Sub-Programme 3.2: Fisheries Domain Management

Objective: Improving and enhancing the effectiveness of management and development of fisheries domain and fisheries exploitation in order to sustain natural fisheries resources.

Indicators:

indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Flooded forest and mangrove effectively protected and managed)	ha	200	450	3,500	7,500	12,000	15,000
2. Fisheries habitat rehabilitated effectively	km	-	-	5	10	15	20
3. Fishers followed effectively the regulations and the uses of fishing gears	No. of fishers	2,750	5,750	10,750	15,750	20,750	25,750

Activities:

1. Identification of the boundaries of flooded forest and mangrove forest.
2. Mapping of of flooded forest and mangrove forest.
3. Concrete pole installation of flooded forest and mangrove forest.
4. Study and improve fishery domain, including the promotion of climate change's resilience.
5. Study and assess the areas that will permit for developments in fishery domain, including CFi fishing area.
6. Extension on the proclamaion of fishing gears and the importance of flooded forest.
7. Prepare action plan to combat illegal unreported and unregulated (IUU) fishing.
8. Monitoring and control on fishing vessels registration applying for fishing.
9. Fishing vessels census, dissemination of the proclamation on technical order for fishing vessels management and fishing vessels logbook.
10. Monitoring and evaluation of fishing and fishery domain status.
11. Develop action plan for management and improvement of fisheries domain and fisheries exploitation, including transboundary fishing.
12. Promoting Climate Change Resilience of wild fisheries resources.
13. Enhancing the Climate Change Responses in fisheries sector.
14. Establishing GHG inventory and accounting system in fishery sector.

3.3 Sub-Programme 3.3. Aquaculture Development

Objective: To supply fish consumption and increase household income generation for people livelihood improvement and ensuring food security.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Proportion of fish farmers increased	%	5	10	15	20	25	30
2. Quantity of fingerling of aquatic animals increased	Million heads	150	170	200	220	240	260
3. The number of effective community fish refuge increased	No.	779	896	962	1,028	1,094	1,160

Activities:

1. Dissemination and follow up of fish culture techniques.
2. Dissemination and follow up of rice field fish culture techniques.
3. Dissemination and follow up of the technique of good aquaculture practice.
4. Dissemination and follow up of fish feed production technique.
5. Dissemination and follow up of fish seed production technique.
6. Census on fish farmers to develop aquaculture action plan.
7. Establishment of community fish refuge.
8. Strengthening the capacity of community fish refuge.
9. Disseminate fish culture techniques to students and teachers in village schools.
10. Develop National Aquaculture Resources Inventory (NARI).
11. Establish a phone/internet based markets information exchange.
12. Registration of fish farms.
13. Establish aquaculture farmers Networks for addressing their aquaculture issues.
14. Artemia Cyst production in Komport and Keb provinces.
15. Third country Capacity building on aquaculture technologies.
16. Produce aquaculture extension materials.
17. Establish Cambodia Aquaculture Education Networks.
18. Promoting Aquaculture Production Systems and Practices that are more adaptive to climate change.

3.4 Sub-Programme 3.4: Human Resource Development and Law Enforcement

Objective: Improvement of management capacity and strengthen law enforcement in combating illegal fishing practice in order to protect and conserve fisheries resource sustainably.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Proportion of illegal fishing activities decreased	%	56	40	30	25	20	10
2. Proportion of people received the knowledge on the fisheries law and related legal instruments increased	%	10	8	10	15	20	25
3. Proportion of FiA staff capacity strengthened and effectively work performed	%	-	-	5	10	15	20

Activities:

1. Disseminate fisheries law and related legal instruments, and monitoring & evaluation of the stakeholders' knowledge and law enforcement.
2. Controlling and eliminating of fisheries offenses.
3. Evaluate the effectiveness of stopping of illegal fishing activities.
4. Prepare and implement the strategic plan for human resources development in fisheries sector 2015-2020 and assess the staff capacity and work performance.
5. Prepare and implement the strategic plan for gender mainstreaming and elimination of the worst forms of child labor in fisheries sector, 2015-2020.
6. Prepare and implement the strategic plan for responding to the impacts of climate change and Disaster Risk Reduction in fisheries sector, 2015-2020.
7. Integrated and applied the Information Technology and Communication aspects in the management, conservation and development of fisheries sector.

3.5 Sub-Programme 3.5: Inland Fisheries Research and Development

Objective: Improvement of scientific research in order to promote the sustainable inland fisheries management and development.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1 Research reports on inland fisheries published (including fishers' statistics and the impact of hydro-power dam)	No.	12	12	13	15	17	19
2. Stakeholders effectively practiced the bio-ecology monitoring	No.	500	500	500	500	500	500
3. The inland fisheries data and information used	No.	100	110	120	130	140	150

Activities:

1. Analyse the value change of small prolific fish product include the impact of climate change.
2. Research of fish Larvae.
3. Research of Dai fisheries production.
4. Research of family fisheries production.
5. Assessment of inland fisheries productions and full-time fishing households.
6. Research of spawning habitat of inland fish species.
7. Research of inland fishing gears.
8. Bio-ecological health monitoring and Bio-ecological health education.
9. Research of impacts of hydropower developments on fisheries resources.
10. Research of Cambodia's inland fisheries management, include the impact of climate change.
11. Assessment of inland fisheries protected areas and setup network of inland fisheries protected areas.
12. Strengthening librarian capacity and improvement library management.

3.6 Sub-Programme 3.6: Research and Development for Marine Fisheries

Objective: Contribute and enhance of sustainable marine fisheries resource management and development.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Effective of research study and documentation on marine fisheries resources increased	No.	2	10	30	40	50
2. Effective development and implementation of the strategic and action plan for the marine fisheries research and development institute increased	%	-	10	20	30	40
3. Building capacity and extension knowledge to staff of FiA and stakeholder increased	No.	50	500	1,000	2,000	3,000

Activities:

1. Study monitoring evaluate and extension on status of marine fisheries production
2. Study identify and extension of the marine fisheries species.
3. Study and extension of biology of juvenile of marine fisheries species.
4. Impact assessment of the crab bank.

5. Research, observation, monitoring status on marine fisheries production and social economic.
6. Study on marine ecology biology and marine oceanology.
7. Research on technologies and identification types and effectiveness of marine fishing gears.
8. Research impact on marine fisheries resources caused by other activities.
9. Study on relationship and impact between fishing and aquaculture activities.
10. Research and extension of the marine fisheries aquaculture technologies.
11. Study and promote the production and extension of e of marine endanger species.
12. Study research enhance capacity laboratory on fish feeds, diseases and genetic.
13. Building and enhance capacity to fisheries officers and stakeholders on research methodologies; monitoring and evaluation; management; and aquaculture technologies; extension and other relevant technologies of the marine fisheries resources.
14. Developing the strategy plan and action plan for Marine Fisheries Research and Development Institute.
15. Building infrastructure and operation of the Marine Fisheries Research and Development Institute.
16. Establish data base system management, scientific information, technology and extension.
17. Study on value chain of marine fisheries production and market price
18. Study on impact of climate change to marine ecology, biology and marine oceanology.

3.7 Sub-Programme 3.7: Research on Aquaculture Technology

Objective: Research on aquatic animals seeds and fish culture technique and production in order to supply and support the development of aquaculture technology.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. New fish species and freshwater prawn researched for quality seed production and farming	No.	2	2	8	8	8	8
2. The quality aquatic animal brood-stock produced	kg	480	1,000	3,500	3,500	3,500	3,500
3. The quality fish and freshwater giant prawn seed produced	million heads	-	10	20	30	40	50

Activities:

1. Research on nourishing fish brood stock of *Cyclocheilichthys Enopos* (Trey Chhkok) and *Hemibagrus wyckii* (Trey Khia).

2. Research on nursuring of seabas and grouper.
3. Research on snakehead growth-out by artificial/filet feed.
4. Produce a quality of fish and freshwater giant prawn seed (with climate change resilience).
5. Research on feed for the quality production of brood-stock and fish seeds.
6. Transfer new technology and distribute fish seed, brood-stock fish and giant prawn to fish farmers and fish seed producers.
7. Release fish fingerling/seeds, giant prawn and brood-stock to natural water bodies or CRF.
8. Train NARDI officers through in-door and out-door trainings.

3.8 Sub-Programme 3.8: The Improvement of Fisheries Value Chains

Objective: Improvement of quality and safety of fishery product in order to protect public health and promote exportation.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Processors and stakeholders effectively applied the good hygienic practices (GHP) and good products	No.	210	250	250	250	250	250
2. Stakeholders received the sufficient information on fish processing technology	No.	300	300	300	300	300	300
3. Number of processing sites registered for certifying the quality and control on GHP and good products	No.	15	15	15	15	15	15

Activities:

1. Prepare a strategic plan for the fisheries post-harvest management and development.
2. Strengthen the institutional capacity on providing service relating to safety, quality and fishery products.
3. Construct a laboratory and equip lab materials for analyzing on safety of fisheries products.
4. Prepare related legal instruments and strengthen the implementation of management, safety and quality of fisheries products.
5. Provide training course on sanitation and good practice of production chain, including climate change.
6. Disseminate on safety, sanitation, processing technology, transportation, wrapping and preserve of fishery product.
7. Register fish processing sites, where have been applied the good hygienic practices and good fisheries products.
8. Inspector and control safety, quality of import and export of fishery product.
9. Extend market for fishery products in order to improve the exportation.
10. Develop and disseminate product standards, and other necessary standards.

11. Enhancing fish and fisheries products in the entire value chain in response to climate change impacts.

3.9 Sub-Programme 3.9: Protection and Conservation of Fisheries Resources

Objective: Ensuring fisheries resources through protection and conservation to contribute for sustainable fisheries utilization and management.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. The quantity of each endangered species increase	%	3	5	8	10	15	20
2. Number of fisheries protected and conservation areas effectively managed	No	31	40	50	65	70	75
3. The quantitative fisheries biology in the replanted flooded forest/mangrove areas increased	%	3	5	8	10	13	15

Activities:

1. Reforestation of flooded forest and mangrove to increase fisheries resources
2. Public awareness on importance of fisheries habitat and endangered fisheries resources.
3. Establishment and improvement of coastal fisheries conservation areas.
4. Establishment and improvement of freshwater fisheries conservation areas.
5. Protection and conservation of Makong Dolphin and Endangered fisheries resources.
6. Research on fisheries biodiversity in the Marine Conservation Area and reforestation areas of flooded forest and mangrove.
7. Strengthen wild crocodile conservation and enhance crocodile farming for qualitative skin for better international market.
8. Promoting the development and management of carbon size and blue carbon from the fisheries sector.

3.10 Sub-Programme 3.10: Improving the Implementation of Fisheries Strategic Development

Objective: To manage, conserve and develop the fisheries sector through promoting the effectiveness of SPF implementation.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Proportion of the activities of the SPF implemented successfully	%	80	90	90	90	90	90
2. Proportion of the implemented activities monitored and evaluated	%	5	10	20	30	40	50

Activities:

1. Prepare the progress report of 3 years' implementation of Strategic Planning Framework (SPF) of the Fisheries sector 2011-2013.
2. Update of strategic planning framework for the fisheries sector.
3. Prepare the annual fisheries action plan (national and sub-national).
4. Collect data and fisheries statistics through staff capacity building and practices.
5. Monitoring and evaluation of the annual action plan's implementation.
6. Prepare the related legal instruments for export and import of fisheries production.
7. Operate the Technical Working Group on Fisheries (TWG-F) as an effective coordination body between FiA, development partners and NGOs for improved sector development.
8. Developing and implementing of the Strategic Plan for Promoting Market of Fish and Fisheries Products in Fisheries Sector.
9. Developing and implementing of the Strategic Plan for Promoting the One Village One Fisheries Products/Services in the Fisheries Sector.

3.11 Sub-Programme 3.11: Governance and Operation of FiA

Objective: Facilitate to improve the uses of budget and expenditure, particularly on effective necessary supplies.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
Proportion of budget implemented effectively	%	95	98	98	98	98	99

Activities:

1. Fuel and oil supply, administration cost and cloth expenditure
2. Supporting to the expenditure for food and agricultural production (fish feeding)
3. Facilitate the payment of the minor materials, furniture, logistics, electricity, clean water, maintenance and repairing services

4. Facilitate the payment for research experiment, services and usage rights
5. Facilitate the payment for public communication, extension and information, documentation for disbursement expenses.
6. Facilitate the payment for communication services (telephone...).

4. Programme-4: Sustainable Forest Resources and Wildlife Management

4.1- Sub-Programme 4.1: Forest Development and Management and Community Forestry

Objective: To manage and develop forest resources through demarcation of permanent forest boundary, secure land registration, increase number of community forestry, and promote livelihoods of community.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1-Length of permanent forest boundary demarcated	Km	97	350	455	592	769	1,000
2-Number of forestry community established and strengthened	No. of community	54	32	32	32	32	32

Activities:

- 1- Demarcate permanent forest boundary, classify forest permanent for registration, and classify forest by function.
- 2- Conduct training on Mapping and GIS.
- 3- Conduct training on forest inventory technique for assessment of carbon storage.
- 4- Conduct dissemination on guideline on pole concrete of permanent forest boundary, and disseminate the importance of watershed.
- 5- Regulate and establish community forestry, sign agreement, formulate community forestry development plan.
- 6- Conduct law awareness on enforcement and forest governance, strengthen community capacity in community management.
- 7- Conduct training on forestry resources inventory assessment, forestry resource and status assessment for landscape designation.
- 8- Identify potential areas of forest resource for local use.
- 9- Conduct training on data completion of PB-M&E forms and MAR-SFM.
- 10- Strengthen capacity on forestry administration for forestry management planning, national forest action plan, and facilitate in planning for MAR.

- 11- Conduct awareness on forest fire protection, publish signboards and administrative letters.

4.2- Sub-Programme 4.2: Develop Forest Plantation and Forest Cultivation

Objective: To increase the reforestation and restoration of forest on degraded forest land in order to serve economic, social, and environmental benefits.

Indicators:

Indicator	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Forest Plantation Areas (State and private partners)	Ha	17,950	20,280	22,300	24,500	27,000	29,700
2. Seedling plants produced	Thousand plants	8,100	10,000	10,000	10,000	10,000	10,000

Activities:

- 1- Plant new forest and maintain old forest plantations from the first year to the fifth year.
- 2- Produce seedling plants for distribution to local people.
- 3- Organize Forest Day in the whole country.
- 4- Organize and improve the restructured forest nursery.
- 5- Develop genetic resources.
- 6- Implement agro-forestry and maintain demonstrated agro-forestry lots.
- 7- Prepare materials for forest plantations and Mapping forest plantations.

4.3- Sub-Programme 4.3: Wildlife and Bio-diversity Conservation

Objective: To increase wildlife conservation, forest protected area management, promote public service delivery through natural tourism arrangement.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Protected and conserved areas of wildlife strengthened and expanded (1.50 million ha in 2012)	ha	50,000	50,000	50,000	50,000	50,000
2. Identified Natural Tourist Areas	Region	1	1	1	1	1

Activities:

- 1- Enforce the management of forest protected and wildlife conservation areas.

- 2- Develop action plan for forest protected and wildlife conservation areas management. (Forest protected and wildlife conservation areas have been expanded about 50,000 ha/year).
- 3- Conduct study and research, and identify potential forest areas for natural tourism.
- 4- Conduct study and research on main wildlife species.
- 5- Conduct public awareness on wildlife business prevention and protection.
- 6- Conduct registration of wildlife raising.
- 7- Conduct monitoring on wildlife production farm and animal zoo.
- 8- Protect and maintain the forest.
- 9- Conduct training and dissemination on bio-diversity.
- 10- Organize and participate in technical meetings (local and international) for strengthening wildlife and biodiversity management.

4.4- Sub-Programme 4.4: Saving, Restoring Bio-diversity, Breeding, and Releasing Wildlife

Objectives: To preserve and protect endanger wildlife, forest, and bio-diversity through saving, breeding, educating, and tourist service to ensure the economic, social, and environmental sustainability.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Number of saved and cared wildlife	Head	1,000	1,000	1,000	1,000	1,000	1,000
2. Percentage of saved wildlife released	%	50	30	30	30	30	30

Activities:

- 1- Develop safety gates of zoo and Tamao Saving Wildlife Center.
- 2- Supply water and transportation.
- 3- Supply animal feed.
- 4- Rescue and take care of wildlife.
- 5- Make biological cage of bird.
- 6- Support operation, supply administrative aid and energy, and provide maintenance.
- 7- Improve wildlife biology and release.
- 8- Conduct public awareness on forestry and wildlife environment.
- 9- Prevent the forest fire.

4.5- Sub-Programme 4.5: Management and Development of Forest Industry, Trade, and International Cooperation

Objective: To manage and develop forest industry and trade aiming to increase quality of products for compliant with the market demands, and national and international cooperation as well as to increase knowledge of REDD+ implementation.

Indicators

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Number of processing woods and NTB	000 m3	16.50	18	20	22	24	26.50
2. Number of meetings and trainings regarding REDD mechanism and international cooperation	Time/year	-	-	27	27	27	27

Activities:

- 1- Develop action plan, budget plan, and strategic plan for management of forest industry and trade, and international cooperation.
- 2- Establish data management system and update forest industry.
- 3- Study and research processing technique of products and NTP, and update.
- 4- Establish data management system and update forest trade.
- 5- Develop logbook and registration of products and NTP for local use, export, and transit.
- 6- Study and update price of timber in local and international markets.
- 7- Disseminate market information for local community, private sector, and producers.
- 8- Coordinate and increase international cooperation with ASEAN and WTO, follow up MOU, agreements, and national convention related to forestry.
- 9- Conduct national and sub-national workshops and training on climate change, and REDD mechanism.
- 10- Produce materials for dissemination and public awareness (Posters, guidebooks on REDD+ and climate change).
- 11- Conduct consultation workshop with stakeholders on REDD+ strategy, and other related policies.
- 12- Conduct monitoring and evaluation on REDD+ implementation with partner organization.

4.6- Sub-Programme 4.6: Strengthening Research Capacity in Forestry Sub-sector

Objectives:

- To strengthen research capacity in forest management, rehabilitation, and conservation,
- To increase capacity and train HRD in forestry sub-sector,

- To disseminate and promote public awareness on forest resources benefits.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1- Number of trained people	Man/year	120	200	220	240	260	280
2- Number of legal norms and forest benefits dissemination	Course	-	1	10	15	20	25
3- Number of forest and bio-diversity research projects	Project	-	1	2	4	6	8

Activities:

- 1- Conduct training on forest management and conservation.
- 2- Replace planting and forest plantation maintenance.
- 3- Create research lots of climate change adapted plants, and pilot plating local forest species adapted climate change.
- 4- Conduct annual technical training to forest staff.
- 5- Establish forest research and rehabilitation stations at forestry cantonments.
- 6- Develop new technology projects and programs related to climate change in forestry sub-sector.
- 7- Collect and conserve tree seeds especially endangered tree seed.

4.7- Sub-Programme 4.7: Strengthen Law Enforcement to Protect the Forest in a Sustainable Manner

Objectives:

- To increase awareness on forestry law and regulations to people and related stakeholders,
- To prevent and suppress forest and wildlife offenses and forest land encroachment for protecting the forest in a sustainable way,
- To manage properly and effectively the forest and wildlife offenses and forest land encroachment database.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Strengthen law enforcement to combat the forest offenses	Time (Suppression)	-	175	200	225	250
2. Examine and verify forest offense tools registered in the forest land offenses	Case	200	150	150	100	100

Activities:

- 1- Prepare, compile and publish the action plan and annual budget plan.
- 2- Conduct meetings (national and provincial).

- 3- Conduct training and dissemination on legal norms and technical documents related to forest.
- 4- Enforce the law implementation at the local level.
- 5- Develop posters, mapping, and demarcate seized forest land boundary.
- 6- Prepare, compile and publish reports and other documents.
- 7- Conduct monitoring and follow up on grabbed forest land.
- 8- Follow up and verify information, and let the local forest administration to take further actions.
- 9- Create non-paid mobile phone and SMS systems to get information from the publics.
- 10- Check and verify files and logistics of forest, wildlife, and forest land offenses.
- 11- Develop data and information management system for forest, wildlife, and forest land offenses.
- 12- Conduct filed investigation and taking action on forest offenses.
- 13- Compile and publish legal norms and regulations related to forestry sub-sector.
- 14- Prevent and suppress forest and wildlife offenses and land encroachment at local forestry administration.
- 15- Conduct monitoring and evaluation of PB implementation at local forestry administration.

4.8- Sub-Programme 4.8: Increase Effectiveness of Plan Implementation and Budget Management of Forestry Administration

Objective: Strengthen accountability and transparency of budget management and the implementation of forestry and wildlife strategic development plan.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1) Number of implemented activities by sub-program	%	50	60	65	70	75	80
2) % of budget execution	%	90	94	94	96	97	98

Activities:

- 1- Conduct public awareness to local communities on forest benefits and policy, and gender mainstreaming to community forestry.
- 2- Manage and file forestry documents through data management system, and conduct dissemination on research and technical documents (www.forestry.gov.kh), update and upload forestry papers into website, and compile forest statistic books.
- 3- Conduct assessment on the implementation of action plan, program budgeting, strategic plan, and annual plan, set priority and formulate program, sub-program, and projects collaboration with line departments of FA.
- 4- Conduct monitoring and evaluation on the implementation of program budgeting.

- 5- Review, analyze, and update M&E data in website, collect and update information for ASEAN website (www.arnk.fpd.org).
- 6- Conduct analysis and assessment on the effectiveness of PB implementation, and design progress report.

5. Programme-5: “Strengthening Institutions, Improving the Efficiency of Supporting Services and Develop Human Resource in Agricultural Sector”

5.1. Sub-Program 5.1: Enhancement of Policy Planning Formulation and Implementation and Increase Agricultural Investment

Objective: Improve the capacity on policy formulation and implementation, budget plan, strengthen statistical information system, agricultural marketing, PIP management and private investment.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. % of activity implementation for PB	Percentage	92	93	94	95	95	95
2. Numbers of sample of paddy crop cutting survey	Thousands of sample	7	12.50	30	35	85	60
3. Numbers of SMS used for agricultural market information	Thousands of SMS/ year	18.50	21	22	23	24	25

Activities:

1. Training on utilization of management system for public investment program (PIP).
2. Training on capacity improvement of PIP management system and maintenance.
3. Strengthen capacity on Economic Land Concession (ELC) data management (18 targeted provinces).
4. Training on GPS & GIS system utilization of ELC (18 targeted provinces).
5. Conduct monitoring on implementation of provincial department of agriculture in target provinces to promote monitoring and evaluation of ELC.
6. Develop ELC mapping and bulletins.
7. Formulate long term master plan for agricultural development (20 years).
8. Formulate agricultural sector strategic development plan 2014-2018.
9. Training on annual budget strategy, Budget Strategic Plan (BSP) and Programme Budgeting (PB) preparation for central staff.
10. Training on annual budget strategy BSP and PB preparation for provincial staff.
11. Conduct monitoring and verification of paddy seed stock at Provincial Departments of Agriculture (PDA).
12. Conduct field monitoring and evaluation of projects and PB implementation.

13. Organize workshops to assess of mid-term result-based PB implementation.
14. Conduct training on PB monitoring and evaluation.
15. Organize workshops on output evaluation of annual PB implementation.
16. Publish annual report of result-based PB implementation.
17. Organize assessment workshops to evaluate the situation agricultural production.
18. Conduct crop-cutting survey (rice yield).
19. Conduct crop-cutting survey (permanent crops).
20. Conduct survey on crop production costs.
21. Training on survey methodology/agricultural statistics.
22. Compile and publish annual agricultural statistics bulletin.
23. Conduct nation-wide agricultural commodity price collection.
24. Compile and publish agricultural market price bulletin.
25. Disseminate agricultural market price bulletins through SMS & Website.
26. Conduct monitoring on agricultural market price information collection.
27. Training workshop on agricultural market price information by using SMS (Short Message Service-through mobile phone).
28. Conduct performance assessment for rice import and export movement.
29. Training workshop on agricultural market information for TOT staff.
30. Training workshop for Farmer Marketing School (FMS).
31. Conduct study on cassava production and market.
32. Conduct study on vegetable supply and demand in Phnom Penh markets.
33. Training on environmental impact assessment.
34. Conduct monitor and evaluation of reserved land area in ECL.

5.2. Sub-Program 5.2: Increase Efficiency of Budget Management and Execution

Objective: “Improve efficiency and effectiveness of budget preparation and execution”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Percentage of computerized financial accounting users	%	20	30	40	50	60	70
2. Percentage of budget execution	%	93	94	95	96	97	98

Activities:

1. Conduct training on budget preparation, budget execution, procurement legislation and state property management.
2. Organize the training courses for technical staff of Department of Accounting and Finance (DAF) in financial management.

3. Control and strengthen staff' capacities on procurement procedure and budget execution for provincial staff.
4. Build capacity of accountant and financial officers at provincial level on cost estimation for supporting budget preparation.
5. Build staff capacity of Provincial Department of Agriculture (PDA) officers on accounting and financial statement preparation.
6. Install IT-financial accounting management program for PDA.
7. Conduct training on IT-financial administration management system for central and provincial staff.
8. Control and strengthen revenue management collected by provincial staff (municipal-provincial departments of agriculture).
9. Monitor and promote budget implementation of line departments under MAFF.
10. Operate financial management IT system.
11. Collect economic land concession revenue.
12. Monitor and check state property inventory of all entities of MAFF.
13. Conduct assessment and clearance of state properties.
14. Monitor, check and collect revenue from entity of MAFF.
15. Monitor and check accounting and financial books by entity of MAFF.
16. Monitor and close annual accounting and financial books by entity of MAFF.
17. Join monitoring and evaluation with individual and inter-ministries, and others.
18. Compile and publish legal documents on accounting and financial management and overhead cost.
19. Identify the new revenue source from entities of MAFF.
20. Cooperate and facilitate project implementation which carried out by line departments under MAFF, supported by development partners.
21. Strengthen financing management and project execution with development partner.

5.3. Sub-Program 5.3: Strengthening Institutional Management and Human Resource Development

Objective: “To enhance institutional management and human resource development with effective, efficient, transparent and accountable manners”.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Number of workshops organized for strengthening institution's capacity	Workshop	-	4	4	4	4
2. Number of monitoring and evaluation on official management/collecting data of agricultural officials for establishing HRMIS	Times	25	35	40	45	50
3. Number of officers trained (Domestic and overseas)	Officers	453	525	545	715	735

Activities:

1. Organize workshops on functioning review and management of entities.
2. Organize consultative workshops on the discussion of the formulation of human resource management strategy plan.
3. Collect staff data and personnel information for preparation of human resource management information system.
4. Develop human resource management system through IT system.
5. Training on the utilization of human resource management information system (HRMIS).
6. Monitor and evaluate staff management by entities under MAFF.
7. Training on staff capacity building for improving human resource management.
8. Develop and implement HRD cooperation with overseas institutions and nominate staff to participate local and overseas trainings.
9. Formulation of human resource policy and strategic development plan.

5.4. Sub-Program 5.4: Improve the Efficiency of Internal Audit Affairs

Objective: “Promote auditoriums to be responsible for their duties and work effectiveness through strengthening internal audit system”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
Percentage of auditor’s recommendations implemented by auditorium.	%	60	65	67	70	73	75

Activities:

1. Conduct internal audit for entity of MAFF.
2. Monitor the recommendation implementation of auditorium.
3. Organize workshop on dissemination of law, roles and responsibilities of internal audit.
4. Conduct training on internal audit technique.

5.5. Sub-Program 5.5: Enhancing Capacity and Efficiency of International Cooperation Affairs

Objective: “Enhance the efficient cooperation capacity and management, monitoring and evaluation on international cooperation for sustainable agricultural development”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Number of meeting in and outside the country	Meetings	40	70	70	70	70	70
2. Number of training on relevant data system	Courses	4	5	7	8	9	9
3. Monitor the cooperation projects and NGO activity's implementation	Times	10	25	30	35	35	35

Activities:

1. Join meetings in the framework of ASEAN, ASEAN plus, FAO and UNCCD, as well as bilateral and multilateral parties.
2. Host a numbers of ASEAN, ASEAN plus, Development Partners (DPs), and Non-Governmental Organizations (NGOs) meetings; and organize meeting on agricultural commercialization discussion.
3. Organize workshop and training on the preparation of joining ASEAN economic integration, commercial procedure, technical standard, international relation, and project monitoring and evaluation.
4. Conduct monitoring and evaluation of project implementation under MOU, memorandum protocol, and NGOs projects.
5. Develop project management information system under PDs funding and NGOs operation.
6. Organize World Food Day and World Day.
7. Translate and publish documents related to WTO and bilateral and multilateral cooperation into national language.

5.6. Sub-Program 5.6: Strengthen Efficiency of Law Enforcement of Agro-Chemical and Fertilizer Management

Objective: “Ensure sustainable agro-chemical and fertilizer management and enhancement of public awareness in safe management and trade”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Officers, local authorities, and traders trained in input management	Participant	500	650	750	850	950	1,000
2. Depots where sold agricultural input in 15 target provinces are controlled and advised	Depots	375	450	600	715	800	875

Activities:

1. Conduct inspection of agricultural fertilizers and chemicals depots and disseminate regulations related to Law on Management of Agricultural Chemical and Fertilizers in 15 provinces.
2. Organize the training workshops for technical staff on the capacity strengthening on legal regulations awareness and Law on Management of Agricultural Chemical and Fertilizers.
3. Conduct the workshops for traders on Law on Management of Agricultural Chemical and Fertilizers and related Sub-Law dissemination, working in partnership with good quality chemicals firms.
4. Disseminate through video clips on Law on Management of Agricultural Chemical and Fertilizers.
5. Conduct quality analysis on chemicals sample.

5.7. Sub-Program 5.7: Strengthening Administration Affairs, Gender Mainstreaming and Childhood Development

Objective: “Strengthen administration’ capacity for MAFF staff to execute timely and effectively and promote gender mainstreaming and childhood development in agricultural sector”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Number of staff received training on general administrative affair	Officers	-	-	30	40	60	80
2. Number of staff, farmers, received training on gender mainstreaming in agricultural production in the province	Officers	300	300	300	300	300	300

Activities:

1. Facilitate administrative activities of ministry at central level and line entities under ministry and between ministries and government institution.
2. Prepare and manage the expenditure for MAFF management, building utilization, vehicles, materials of entities attach to ministry.
3. Consolidate the MAFF report and other related activities of the ministry.
4. Strengthen capacity of gender mainstreaming activities, provide education and extension for gender mainstreaming in agricultural sector.
5. Provide education and extension works for children development and protection in agricultural sector.

5.8. Sub-Program 5.8: Improve Effectiveness of Inspection in Agricultural Sector

Objective: “Strengthen and improve implementation on law and other legal documents to reduce inactivity of entities under the supervision of ministry”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Number of entity monitored	Entity	24	26	28	30	32	34
2. Number of officers trained each year	Officers	-	30	32	34	36	40
3. Entity implemented recommendations	Entity	5	13	14	15	16	17

Activities:

1. Inspect to selected entities to be inspected and identify complaints in the framework of agricultural works.
2. Monitor management, legal implementation and other regulations of entity under ministry supervision.
3. Organize regular trainings for inspecting officials.
4. Establish instruction guidelines, regulating and appreciating letter and strengthen the tasks of entities already inspected.
5. Ensure inspection operation including the administration; maintain equipment, and petroleum supply for inspection work.

5.9. Sub-Program 5.9: Agricultural Documentation and Information System Management

Objective: “Strengthen IT networking management, enhance technical capacity for officials related to internet and library management system in order to extent agricultural information and documents via electronic system”.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Network system in ministry compound set up	system	-	3	3	3	3
2. Website for entity under ministry supervision and agricultural provincial departments established	website	-	6	8	8	8

Activities:

1. Establish internet and intranet network and maintenance in ministry compound.
2. Establish website for entity under supervision of Ministry and provincial level.
3. Codify and maintenance documents in the library.

4. Strengthen capacity of national officials and provincial officials on information technologies and website.

5.10 Sub-Program 5.10: Strengthen Education Quality and Human Resource on Agricultural Technology Development at Royal University of Agriculture

Objective: “To strengthen training quality, actual implementation & practices and research of scientific techniques and build educational infrastructure”.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Student trained at all level	Student	800	850	900	950	1,000
2. Research and scientific development project developed	Project	10	10	10	10	10
3. Number of infrastructure to be established	Number	1	1	1	1	1

Activities:

1. Train students on agricultural technical skill and specialization for agriculture development, carry out exchange programs in country and oversea, establish full time senior bachelor degree and doctor degree.
2. Research and extent new innovation to increase agricultural production and enhance rural living and technical education for implementers.
3. Review job situation of students after graduate.
4. Organize scientific workshops, train officers, professors and lecturers.
5. Develop human resource plan, update study program, establish short and long term programs, establish new skills as required by market and increase direct implementation of students at each institutes.
6. Further improve and develop support services, equip tools for research and direct implementation.
7. Establish good environment for student’s study through distributing support services and infrastructures (equip computer and internet, increase numbers of book for research in library, strengthen short activities, adjust and equip experiment tools, strengthen health care service, canteen service, construct more rooms and strengthen fire safety....)
8. Establish monitoring and evaluation system for administrative and scientific affairs.
9. Establish and implement associations of former students.
10. Create the advertisement programme for attracting students.
11. Establish scientific extension forums for users and concerned stakeholders.

5.11. Sub-Program 5.11: Strengthen Education Quality and Agricultural Training Techniques at Prek Leap National School of Agriculture

Objective: “Strengthen human resource training and educational capacity on agricultural, social science and other relevant fields, responding to labor market requirement based on fundamental emerging innovation and technology for developing agriculture”.

Indicators:

Indicators	Unit	2014	2015	2016	2017	2018
1. Number of students trained each year	Student	1,200	1,200	1,200	1,200	1,200
2. Number of officers trained each year	Officer	25	30	30	30	30
3. Research project	Project	3	3	4	4	4

Activities:

1. Implement student training program, choose students in each year, lead students, prepare advertisement to attract students and process evaluation on graduated students.
2. Further improve study program, prepare actual implementation in study program, and prepare evaluation mechanism on study.
3. Organize scientific workshops and establish media campaign.
4. Build up technical capacity of staffs and professors, equip instructing equipment and distribute materials for implementation.
5. Organize cooperation and research works on projects to expand researching affairs and prepare trainings to build up students' capacity.
6. Educate and support sport activities.
7. Research on the requirement of student for developing curriculum responding to the needs.
8. Prepare internal relation network, further improve IT system in National School and prepare internal legal documents.
9. Develop educational plans for utilization in National School.
10. Establish and maintain infrastructure in National School especially further improve water and electricity systems.
11. Construct infrastructure at research station of National School.

5.12. Sub-Program 5.12: Strengthen Educational Quality System and Human Resource Development of Kampong Cham National School of Agriculture

Objective: “Enhance management effectiveness and capacity training in human resource in agricultural sector to responds to training requirement in consistent with agricultural labor”.

Indicators:

Indicators	Unit	2013 (Achieved)	2014	2015	2016	2017	2018
1. Students finished training	Student	320	320	350	350	400	400
2. Officers and professors graduate Master level	Officer	5	5	5	5	5	5
3. Officers and professors graduate PhD level	Officer	9	2	2	2	3	3
4. Farmers received training	Farmer	350	350	500	500	500	500

Activities:

1. Teach students based on study program, lead them for study tour, prepare programs for researching and implementing, and training on use of IT system and implement physical education and sport.
2. Train professors for capacity building on professional skills, and how to teach, further improve officers and teachers' capacity on language and computer skills.
3. Organize workshops on further improvement of study program, compile technical document of agriculture for sharing.
4. Establish committee for strengthening professional qualification to evaluate the skills and teaching capacity.
5. Organize meetings of advisory board.
6. Compile and publish technical information bulletins of agriculture, further improve IT system and share school's activities via Website.
7. Organize and implement full security protection in laboratory.
8. Train agricultural technique to farmers.
9. Organize public forum for students, establish a forum that illustrates the skills of students in Kampong Cham National School of Agriculture to the public especially employee and technicians.
10. Organize graduate exam for associate degrees, organize thesis defense presentation of bachelor degree.
11. Equip equipment and study tools, strengthen the security system, equip experiment equipment, chemicals, and other analysis equipment, equip computers for teaching IT system.
12. Construct and maintain the building of administration office, buildings of stations, construct and maintain wall around experiment station for 10 hectare, decorate study buildings and computer buildings, organize a suitable library, organize dormitories for students who wish to stay at the station.
13. Organize and provide transportation and communication for the operation of the station.

5.13 Sub-Program 5.13: Support by Municipal/Provincial Department of Agriculture for Programme 5

This Sub-Programme is the consolidation of cluster of all activities for implementation by 25 MDA/PDA which will contribute to achieve the objective and indicator of Programme 5: *“Strengthening institutions, improving the efficiency of supporting services and develop human resource in agricultural sector”*.

G. Strategic Framework for Cross Cutting Issues

(1) Strategic Framework for Climate Change in Agriculture Sector

The climate change has been considered a major issue which resulted strongly impact to the global livelihood and this was made attraction from national and international institutions to establish the effective mechanism for climate change adaptation and also reduce the activities which led to negative impact on environment in order to maintain the sustainable development. This mechanism was nationally and internationally implemented for solving this issue which maintained natural environment. It is recognized that the issues affected to the development of agriculture sector including the change of temperature, seasonality, rainfall regime, flooding, drought, earthquake, and storm etc. In addition, a number of human activities, such as illegal loggings, in-appropriate cultivation practices etc. led to change the climate as well.

In response to this challenge, 1992 UNCED (United Nation Conference for Environment Development) released the UN Framework for Climate Change to cope with the greenhouse gas emission. In order to effectively implement, KYOTO Protocol launched in 2005 for reducing the high temperature, i.e. reduced greenhouse gas emission by 2.5% of the level emitted in 1991. In this connection, a vision of ASEAN Community 2020 was also defined to move “A Clean and Green ASEAN” and as a result, ASEAN Multi-Sector Framework on Climate Change adopted in 2009 for coordinating the formulation and implementation of Climate Change Adaptation and Mitigation Strategy. A Core Environment Programme of Great Mekong Sub-Region has been implemented for reducing the climate change impacts and improving natural environment.

In Cambodia climate change context, the Royal Government of Cambodia strongly considered the climate change impact and accelerated the implementation to cope with the negative impacts by climate change. The National Action Plan for Climate Change Adaptation and Mitigation was approved and implemented in 2006. In order to fully implement, the Royal Government of Cambodia established a National Committee for Climate Change Management (Sub-Decree No. 99 dated 18, August, 2010) for coordinating and reviewing the implementation of climate change policy and strategy in order to respond to the climate change issue, contributing to the environment and natural resource protection.

The vision of the Ministry related to climate change is: “Cambodian agriculture sector continued to improve food security and safety, economic growth and sustainable environment through the implementation of climate smart policy contributing to sustainable and green development, especially to assist the rural communities and vulnerable population”.

The main goal of this strategic plan is to “Contribute to reduce negative impacts on agricultural production, livestock farming, forestry and fisheries caused by climate change for restoring losses and damages through the increases of intervention measures for climate change adaptation and mitigation”.

The objectives of this strategic plan are:

1. To enhance human and institutional capacity in developing new technology of rubber seed, animal production, forestry, fishery and tolerance to flood and drought, salinity water, disease and insect devastation against crops and animals.
2. To enhance capacity to farmers with new technology in coping with climate change.
3. To reduce GHG emission from the loss and forest degradation through forest restoration, animal production, crop production, and to encourage for sustainable forest management in particular forest community development, renewable energy (biomass) and appropriated agricultural technology.
4. Development and enhance the effectiveness of fishery management through water ecological improvement, protected flooded forest and mangrove forest, increase research development on aquaculture and post-harvest processing and to continue strengthening capacity of the fishery community.
5. Capacity development strengthening on crop production, rubber, livestock, forestry and fishery through trainings, awareness raising, exchange visits in relation to climate change and the process of global warming.

(A) Strategic Measures for Agriculture and Agro-Industrial Development:

In order to achieve the sustainable development for agriculture and agro-industry in the context of climate change as well as clean development, the following strategic measures needed to be addressed:

1. Improve agricultural productivity to ensure food security and farmers' livelihood improvement through an increase of crop & agro-industrial production, at 10% per year by promoting intensification, diversification adapted to the ecological environment and increase the adaptation and mitigation capacity for rural communities.
2. Strengthen scientific and technical research capacity for developing new innovation and technology related to climate change adaptation and mitigation in agricultural and agro-industrial production.

3. Promote low GHG emission in agriculture through sustainable natural resource management, carry out climate smart agriculture practices for contributing to enhance a community that resilience to climate change.
4. Strengthen technical capacity in coordination, natural calamity intervention, human resource development, policy development and mainstream climate change issues in agricultural education, and technology transferring on climate change to concerned stakeholders.
5. Increase technical capacity and responsibility for agricultural entrepreneurs in relation to climate change mitigation, reduce negative impact and vulnerability response to climate change for achieving sustainable social and environmental benefit.

(B) Strategic Measures for Rubber Development:

- 1) Enhance natural rubber seed production with more sustainable manner by focusing on adaptation and mitigation.
- 2) Promote the new rubber clones adapted to climate change and suitable for production in the context of Cambodian ecological environment, reducing the rubber seed imported.
- 3) Promote the study and research on the impact of climate change on rubber production and identify the possibility of carbon credit from rubber development.
- 4) Build staff capacity for implement activities responded to climate change impact on rubber production and establish climate change modelling, cropping pattern by production zones.
- 5) Increase technical capacity on Good Agricultural Practices (GAP) in rubber production, climate change impact awareness and adaptation measures through the improvement of rubber producers' capacity, especially land preparation, seed selection, cover cropping, and the proper use of fertilizer and chemicals.
- 6) Increase the efficiency of input use in rubber processing, rubber wood through the economical and efficient use of processing inputs, the use of renewable energy, bio-energy, and the proper management of waste.

(C) Strategic Measures for Livestock production and Development:

1. Promote the livestock production that responded to adapt and mitigate the climate change impact by changing production technology, especially the integrated livestock and farming production.
2. Develop appropriate technology and innovation in production system to adapt climate change, especially animal breeding, feed improvement and animal health.
3. Strengthen technical capacity and extension services to producers through the improvement of institutional capacity, staff capacity development as well as livestock producers for increasing the Good Animal Production Practices which adapted to climate change.
4. Provide intervention and rescue for livestock producers affected by natural calamity caused from climate change.

5. Improve the feed management and animal feeding through the change of feeding techniques which led to reduce methane for mitigating the climate change issue.
6. Improve the grass management for livestock production that contributing to GHG emission by applying the rotation of grass zones for feeding livestock, integrating the new grass seed as well as the legume into the natural grass zones for increasing the stock of carbon and azote in the soil.
7. Improve the animal waste management and establish bio-digester that contributing to reduce the GHG emission.
8. Strengthen the implementation of law and regulations related to livestock production and health and further implement the Climate Change Strategic Plan in connection to the livestock development.

(D) Strategic Measures for Forestry Sector:

1. Increase efficiency in forest management: forest demarcation, forest land registration, and preparing and implementing the plan for forest management & conservation. In this connection, the potential forest areas, including communities forestry, of about 2 million hectares will be implemented the REDD+ (Reducing Emission from Deforestation and forest Degradation). The revenue from carbon credit programme would be the potential sources to encourage concerned stakeholders, especially community forestry and local government, to more involving in forestry sustainable management.
2. Forest conservation and Reforestation: The priority actions related to forest conservation and management in associated with the climate change included: 1) land use mapping in economic land concession, 2) increase the awareness on forest fire protection, 3) protect and support minority communities as well as local communities depending on forest, 4) protect and conserve bio diversity, 5) restore forestry and carry out actions for reforestation aiming to improve the social livelihood and environmental services , 6) enact forestry law and related regulations to increase efficiency of sustainable forestry management.
3. Forestry research & development and extension programme: The focus would be on 1) conduct the study and research for climate change adaptation and mitigation in forestry sector, 2) increase technical capacity in forestry sustainable management connecting to climate change, 3) carry out extension programme for climate change adaptation and mitigation measures in forestry sector.
4. Build staff technical capacity and increase resources for efficient implementation in forestry management.
5. Climate change adaptation measure: Increase the climate change awareness, especially adaptation measures, to local communities living surrounding forest areas.

(E) Strategic Measures for Fisheries Sector:

Fisheries and aquaculture as an element of agricultural sector vulnerable to climate change because it is relied heavily on rainfall, drought and water temperature. In order to adapt and mitigate to the climate change and ensure sustainable fisheries and aquaculture development, the formulation of strategic action and measurement will be required for climate change adaptation and mitigation in line with 10 years Strategic Planning Framework for fisheries sector:

- 1) Improve fisheries productivity and production for food security and nutrition as well as increase income through the strengthening and promotion of fisheries management and conservation. The focus would be more on aquaculture development, by 15% per annum, creation of fish pond communities, 75% of total communes by 2019.
- 2) Enhance quality and safety of fishery products and 80% of fishery processors implemented safety standard by 2019 and promote the implementation of “One Village One Fishery Product” for the rural communities with integrating climate change adaptation measures in fishery development.
- 3) Improve research capacity in fishery sector and increase the extension works related to climate change in fish hatchery, spawning, culture, feeding and processing and fisheries development in accordance with market demand.
- 4) Strengthen and increase technical capacity for staff and concerned stakeholders through the capacity building and training programme in connection to climate change adaptation and mitigation in fishery sector.
- 5) Strengthen effective management, conservation and reforestation of flooded forest and mangrove in which 25% inland flooded forest and 75% coastal forest protected through the demarcation of boundary and 80% protected areas in Tole Sap lake restored, protected and awareness raising to the public by 2019 in line with the establishment of fisheries conservation areas at all fisheries communities to ensure the sustainability of ecological fisheries resources and creating fisheries product as part of climate change adaptation and mitigation.
- 6) Formulate and implement the law and regulations related to climate change adaptation and mitigation in fishery development and disseminate technical knowledge to concerned stakeholders including fishermen or fish culture farmer, processor and policy maker in fishery sector.
- 7) Promote the environment and ecological system protection related to climate change through the mitigation of navigation waste to water, reduce illegal land clearance in flooded and mangrove forest protection zones and other water pollution which will reduce greenhouse emission.
- 8) Consideration will be made for the gender issue in fishery sector in connection to climate change adaptation and mitigation.

(2) Strategic Framework for Gender in Agriculture Sector

Cambodia has expressed its commitment to gender equality through our prioritized development goals, ratifying the United Nations' Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), signing on declarations, creating national plan for women, establishment of committees for advancement of women in every ministry, provision of quotas for female participation in various administrations, etc. Royal Government of Cambodia also recognized that women participation in all sectors and levels, especially in decision making process is an important factor to reach Royal Government of Cambodia's strategic goal.

Although the law states that men and women have equal rights, the society does not value equally to women. Recently, there are small number of women in decision-making positions at all levels of Royal Government of Cambodia and civil service. Agricultural sector is backbone of Cambodia economy while women's capabilities recently in accessing natural resources are limited due to their low level of understanding. Obviously, half among female farmers are illiterate or have less than elementary level of education. Moreover, society still perceives that agricultural work is for men, and women only help to do this work for sometimes. All these factors cause women to get less opportunity to participate in community activities, training, and other opportunity which help strengthen knowledge and additional skills in accessing to and controlling of resources as well as the opportunity to get important supporting services such as agricultural extension service, credit, market information, and research which is crucial resources for female farmers to innovate agricultural production and to promote living quality of women.

In response to the aforementioned problems, in 2006 Ministry of Agriculture, Forestry and Fisheries has developed and implemented policy and strategic plan for gender mainstreaming in agriculture sector, and actively contributed to national and sub-national level mechanism such as Cambodia National Council for women, and Technical Working Group for Gender Mainstreaming by sector referring to promote gender equality and empowerment as well as women status in all levels.

To contribute to the implementation of rectangular strategy of Royal Government of Cambodia, MAFF will update policy and strategic plan for gender mainstreaming in agriculture sector; strengthen gender awareness among civil servant at all levels; strengthen women's associations in agriculture sector; increase empowerment and the number of women in the leadership roles at all levels; increase women's capability to access and control resources and agriculture services; as well as increase economic effectiveness for women in rural area.

MAFF vision is to promote gender equality, dignity, and women's benefits in agricultural sector following the United Nations' Convention on Elimination of All Forms of Discrimination against Women, and the Constitution of Cambodia.

The strategic goal is to strengthen gender equality in agricultural sector through active cooperation of both women and men, the opportunity of participation, and equal benefits from all sub-sectors of agriculture.

To achieve the aforesaid strategic goal as well as to ensure the effectiveness of the promotion of gender equality in agricultural sector, the MAFF has set five (5) missions as follows:

1. Updating policy and strategic plan for gender mainstreaming in agricultural sector.
2. Enhancing gender awareness to government officials of the MAFF.
3. Strengthening women's association in agricultural sector.
4. Increasing empowerment, capability, and quantity of qualified women to the leadership roles at all levels of the MAFF.
5. Increasing capability to access and control resources and agriculture extension services, as well as strengthening economic effectiveness for women in rural area in order to promote household livelihood and economic development.

To achieve aforementioned goals, a number of following prioritized activities will be implemented within the five years Agriculture Sector Strategy Development Plan (ASSDP) 2014-2018.

Prioritized activities:

1. Updating policy and strategic plan for gender mainstreaming in agricultural sector
 - 1.1 Preparation of working group to update policy and strategic plan for gender mainstreaming in agricultural sector.
 - 1.2 Activities evaluation and facing issue analysis of past implementation
 - 1.3 Draft of policy and strategic plan for gender mainstreaming in agricultural sector.
 - 1.4 Consultation workshop on updated draft of policy and strategic plan for gender mainstreaming in agricultural sector.
 - 1.5 Publishing and promulgating policy and strategic plan 2014-2018 to all National and Sub-national officials.
2. Enhancing gender awareness to government officials of the MAFF
 - 2.1 Training of gender focal point who are under department and Ministry of Agriculture, Forestry and Fisheries.
 - 2.2 Supporting gender focal point in opening gender training course and the concept of Convention on the Elimination of All Forms of Discrimination against Women to officials of the MAFF.
3. Strengthening women's association in agricultural sector
 - 3.1 Establishment of database management system.

- 3.2 Data collection and analysis.
- 3.3 Opening training course of usage and data management system.
- 3.4 Preparation of controlling, monitoring, and evaluation plan.
- 3.5 Controlling, monitoring, and evaluation of services and implementation of gender equity in agricultural sector.
- 3.6 Workshop of strengthening the capacity of gender focal point in controlling, monitoring, and evaluation of gender mainstreaming in agriculture sector.
- 3.7 Preparation of quarterly meeting of gender working group.
- 3.8 Annually workshop on evaluation and sharing experiences of gender work.
- 3.9 Study tour visit inside and outside of the country to get experiences on gender equity.
- 3.10 Uploading activities and progress reports of gender by sector to home page of the Ministry of Agriculture, Forestry and Fisheries.
- 4. Increasing empowerment, capability, and the quantity of qualified women to the leadership roles at all levels of the MAFF
 - 4.1 Coordination to increase women participation in technical training courses.
 - 4.2 Coordination for female officials in order to study with free of charge.
 - 4.3 Coordination to increase women's participation in training of management and leadership.
 - 4.4 Coordination to be equal opportunity between men and women in promotion at all levels of MAFF.
 - 4.5 Preparation of discussion with female officials to reflex issues and obstacles to the effectiveness of implementation.
- 5. Increasing capability to access and control resources and agriculture extension services, as well as strengthening economic effectiveness for women in rural area in order to promote household livelihood and economic development.
 - 5.1 Learning obstacles, issues, and needs of women to participate in household economy and community development.
 - 5.2 Widespread dissemination of various programs concerning food security to poor/female headed household.
 - 5.3 Arrangement of technical training (chickens and fishes raising, crops planting, sustainable usage and management of forestry and fisheries resources) for women with subjects satisfying their need and actual implementation.
 - 5.4 Encouragement to and provision of opportunity for female farmers to participate in various groups and communities.
 - 5.5 Coordination for accessibility of women to credit.
 - 5.6 Dissemination of marketing information to female farmers.

- 5.7 Encouragement to women with below-six-year-old children to use children caring services in community in order for them to participate in training and other activities.
- 5.8 Preparation of study tour, visit to improve knowledge and to get female farmers' attention in training courses and other activities.

To ensure the effectiveness of promotion of gender equality in agriculture sector, MAFF has established and nominated seventeen members of working group for gender and children, consisting of one Secretary of State as Chair-Person, one Under Secretary of State as Vice Chair-Person, and a number of leader of line department of MAFF as members. This working group plays an important role in preparation of policy and strategy plan to promote gender equality in agriculture sector, coordination in implementation, monitoring, monitoring, and evaluation of gender program by closely cooperation with gender focal point at the concerned organizations under the Ministry of Agriculture, Forestry and Fisheries.

(3) Strategic Framework for Child Development and Protection in Agricultural Sector

Cambodia ratified the United Nation's Convention on the Rights of the Child on 15 October 1992. A signatory of the convention, the Royal Government of Cambodia (RGC) has been focusing on the benefits of the child as stated in the article 48 of the Cambodia's constitution "The state assures to protect the rights of the child recognized in the Convention, especially the right to live, the right to be educated, the right to be protected during war and the protection from economic exploitation of the child. The state opposes work which interferes with the child's education or is harmful to the child's health."

Despite endeavors of the government and civil society in exercising the rights of the child, some children are still facing all forms of abuse and exploitation. Obviously, 1.5 million children are seen laboring, of which 75% are working in agricultural sector. Those children have been facing many health problems such as malnutrition, skin disease, respiratory disease and so on. What's more, around 430,000 children have dropped out of school while 400,000 children are deprived of the opportunity to study. These are caused by the lack of effective child protection measures and services, limited capacity of relevant officials, low level of understanding of parents and guardians (particularly in remote areas) on child protection and development while the opportunity to access child-related information and knowledge is still limited.

In response to the aforementioned problems, the RGC has developed policies, national action plans and other mechanisms to protect children in all levels including Cambodia National Council for Children, National Committee for Child Development and Protection, Technical Coordinating Committee on Children in each sector, Women and Children Consultative Committee, and so on.

To contribute to the implementation of the National Policy on Child Development and Protection so as to achieve human resources with accountability and active contribution to Cambodia's poverty reduction, the Ministry of Agriculture, Forestry and Fisheries (MAFF) will create legal framework and supportive mechanism, build capacity of relevant officials, promote the understanding of child protection and development to parents and guardians, establish and strengthen the monitoring and evaluation mechanism and mobilize resources to support the effective promotion of the protection and development of children in agriculture.

Strategic goal is to promote the protection and development of children in agriculture especially vulnerable children in poor farmer family to be in line with the Constitution of the Kingdom of Cambodia.

To achieve the aforesaid strategic goal as well as to ensure the effectiveness of the protection and development of children in agriculture, the MAFF has set 5 missions as follows:

1. Creating legal framework and supportive mechanism and implement the protection and development of children in agriculture.
2. Building capacity of officials relevant to the protection and development of children in agriculture.
3. Promoting the understanding of the protection and development of children to parents, guardians and child custodians.
4. Establishing and strengthening the monitoring and evaluation with participation of all levels of relevant stakeholders.
5. Mobilizing resources from all sources to support the activities of protection and development of children in agriculture.

Prioritized Activities:

The following primary activities will be implemented in 5 years of the Strategic Plan of Agriculture Development 2014-2018 to achieve the missions set above. Priority activities are set as follows:

1. Creating legal framework and supportive mechanisms and implementing the protection and development of children in agricultural sector.
 - 1.1 establishing a technical coordinating committee on children of the MAFF.
 - 1.2 preparing a policy on protection and development of children in agriculture.
 - 1.3 preparing guidelines for the implementation of the program on protection and development of children in agriculture.
 - 1.4 preparing the declaration on the serious form of child labor in agriculture.
2. Building capacity of officials relevant to the protection and development of children in agriculture.
 - 2.1 Organizing workshop to disseminate policy on protection and development of children in agriculture to leaders and officials of the MAFF in both national and sub-national levels.

- 2.2 Conducting training to farmer community, domesticated animal health agencies, agencies for agriculture dissemination in commune, animal husbandry community, fisheries community, forestry community etc.
- 2.3 Arranging a study tour to exchange experiences related to child protection and development.
- 3. Promoting the understanding of protection and development of children in agricultural production to parents, guardians and child custodians.
 - 3.1 Preparing promotional materials for local community concerning child's rights and message on agricultural techniques regarding nutrition, sanitation, health and safety of the child.
 - 3.2 Disseminating the information on the protection and development of children in agriculture to the local community.
- 4. Creating and strengthening the monitoring and evaluation with participation from all levels of stakeholders.
 - 4.1 Preparing the monitoring and evaluation
 - 4.2 Monitoring the implementation of the child protection and development activities in agriculture.
 - 4.3 Delegating a focal person for child-related works in the entities under supervision of the MAFF.
 - 4.4 Conducting quarterly meeting of the technical coordinating committee on children of the MAFF.
 - 4.5 Conducting annual evaluation meeting on the implementation of the plan on the protection and development of children in agriculture.
- 5. Mobilizing resources from all sources to support the activities on protection and development of children in agriculture.
 - 5.1 Organizing consultative workshop between leaders of the MAFF and provincial agriculture department to figure out problems and solutions for the protection and development of children in agriculture.
 - 5.2 Organizing a meeting with development partners to support the activities on protection and development of children in agriculture.
 - 5.3 Incorporating the protection and development activities of children in agriculture into National Plan of Action for Children.
 - 5.4 Mainstreaming the activities on protection and development of children in sub-programs of the MAFF.
 - 5.5 Incorporating activities and reports related to the works on protection and development of children in each sector into the website of the MAFF.

Monitoring and evaluation mechanisms: to ensure the effectiveness of protection and development of children in agriculture, the MAFF has established the Technical Coordinating Committee on Child Development and Protection. The Chairman is an Under-Secretary of

State and leaders of relevant agencies under the supervision of some member ministries. The committee plays important roles in coordinating the implementation, and monitoring and evaluating the implementation and the project outcome. This committee will be in close collaboration with Gender Unit of the ministry and the focal person in relevant agencies under the supervision of the ministry in terms of the implementation of the aforesaid project with some existing local communities such as farmer community, village animal health agency, commune agriculture extension workers, animal husbandry community, fisheries community, forestry community etc.

The quarter and annual meetings with participation of all relevant stakeholders will also be organized with the aims at evaluating the progress of the project, challenges, solutions and setting appropriate strategies for the better implementation of the project in the years to come.

H. BUDGET PLAN

To achieve the policy goal for the agricultural development, the Ministry of Agriculture, Forestry and Fisheries has set priority programs and projects and allocates the budget to support the implementation of those programs and projects/activities 2014-2018. Furthermore, the Ministry of Agriculture, Forestry and Fisheries strongly believes that the RGC will further increase the national budget resource together with technical and financial supports from international communities, development partners, non-government organizations, civil societies, and private sector. More importantly, the participation of local authorities and farmer communities would be increased to promote agriculture sector development.

The main financial resources for the promotion of agriculture sector development would be obtained from the national budget and external assistances. To realize the implementation of Agriculture Sector Strategic Development Plan, 2014-2018, the Ministry of Agriculture, Forestry and Fisheries has proposed the priority programs, sub-programs and projects, with budget allocation to support the implementation with the total amount of 347.56 million US\$, in which the amount of 289.63 million US\$ for recurrent costs and 57.93 million US\$ for investment costs.

In the total recurrent costs, the amount of 77,430,760 US\$ allocated for enhancement of agricultural productivities, diversification and commercialization, the amount of 46,701,130 US\$ allocated for promotion of livestock production and health, the amount of 72,551,130 US\$ allocated for sustainable fisheries resource management, the amount of 49,714,240 US\$ allocated for sustainable forestry and wildlife management, and the amount of 43,236,310 US\$ allocated for strengthening institutional capacity, increasing the efficiency of supporting services and human resource development in agriculture sector.

(The detail costs are shown in attached Annexes).

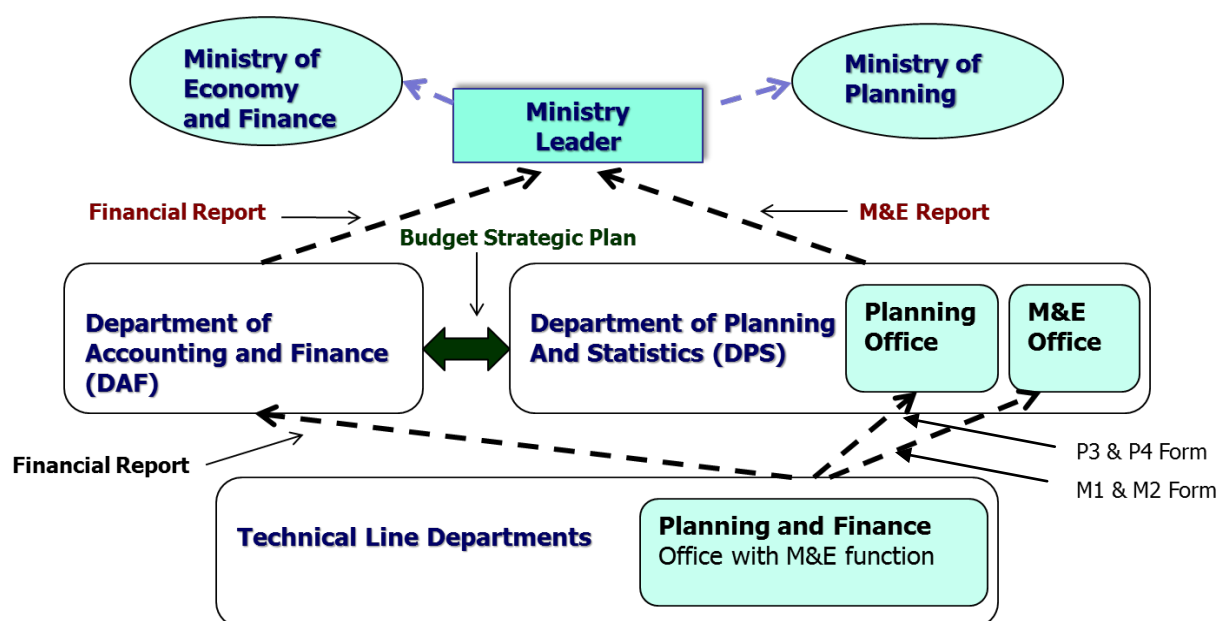
I. MONITORING AND EVALUATION

Based on lessons learnt from past experience, especially the assessment of the implementation of ASDP 2009-2013, it is clear that monitoring and evaluation (M&E) are crucial for ASDP 2014-2018.

In principle, the NSDP sets out the high level impact indicators and the Agricultural Sector Strategic Development Plan 2014-2018 sets out supporting outcomes measures to track change and output measures for regular monitoring against plan.

However, in some cases, it is extremely difficult to gather the ideal data and a choice has been made to use the best, reasonably available substitute, as an indicator of progress. This has also been done, where necessary, to balance the desire for a comprehensive view with the investment of time and resource needed for data collection and the accuracy needed for relevant decisions to be taken.

M&E System for Implementation of ASDP, 2014-2018



Line departments and institutions involved in ASDP implementation will report the progress in quarterly, semester and yearly basis to MAFF (Department of Planning and Statistics) using methodologies set out in the MAFF Monitoring & Evaluation Manual. Based on these, MAFF will submit a full ASDP progress report to Ministry of Planning and also to Ministry of Economy and Finance.

J. CONCLUSION

It is true that Agricultural Sector Strategic Development Plan 2014-2018 is a strategic document for implementing during its 5 years period which all necessary actions to be carried out will be required the concerned technical line departments, including provincial departments of agriculture, concerned institutions as well as development partners and private sector to fully participate in the implementation.

The RGC will further provide a full support to develop the agricultural sector as dynamic efforts in order to accelerate economic growth and poverty reduction with the increase of financial support for public investment as well as the increase of external assistances from development partners for the development of agricultural sector.

This document has also indicated the main obstacles and problems encountered and clearly provided the proposed actions to overcome with indicating the expected outcomes and outputs, especially the indicators set for achievements during the implementation of this strategic plan as the verification tools for monitoring process in the mid-term and full term of the implementation with estimation of budget required for operation as well as the schedule of activity to be successfully implemented.

The Agricultural Sector Strategic Development Plan 2014-2018 is truly important with the provision of clear indications, policy direction and the priority actions to be undertaken in order to produce great achievements as directed by the NSDP 2014-2018 and this is a basic strategic plan to provide roadmap for agricultural development as all concerned institutions and development partners referred to in order to provide their technical and financial assistance for implementation all relevant priority actions set in this plan which to be contributing to the development of agricultural sector.

The Ministry of Agriculture, Forestry and Fisheries highly committed in the implementation of the Agricultural Sector Strategic Development Plan 2014-2018 with high expectation of results. However, negative impacts and obstacles may be occurred during the implementation of productivity and diversification for agriculture, especially rice production. The natural calamities, including flood, drought and insect destruction may be the root cause for failure in crop production. But, these problems will be mitigated through the strong commitments and full efforts from all concerned parties for achieving the great success to accelerate the development of agricultural sector.



Annex 1: Key Indicators of Agriculture, Forestry and Fisheries Sector

Key Indicators	Unit	2014	2015	2016	2017	2018
Rice yield	Ton/ha	3.15	3.18	3.21	3.23	3.25
Rice cultivated areas	Ton/ha	3.10	3.15	3.20	3.28	3.34
Rice Production	Million tons	9.76	10.01	10.28	10.56	10.85
Paddy surplus	Million tons	5.24	5.41	5.60	5.79	6.00
Cultivated areas for all crops (including permanent and plantation crops)	Hectare	4,814,534	5,024,534	5,234,534	5,444,534	5,654,532
Agricultural communities	Number	475	575	675	775	875
All types of Animal production (+3%)	Million heads	35.86	36.93	38.03	39.17	40.34
Animals receiving vaccine (compared with total livestock)	%	10	12	15	17	20
Slaughterhouses applying technical norms for good hygiene	Number	25	50	75	100	125
Rubber plantation areas	Hectare	306,500	334,500	362,500	384,500	404,500
Rubber yield	kg/ha	1,257	1,282	1,311	1,373	1,368
Dry rubber Production	Ton	137,520	181,560	240,800	300,800	340,930
Aquaculture production with a (+15%)	Ton	97,800	112,500	129,400	148,800	171,170
Fisheries production (Fresh water, marine, and aquaculture)	Thousand tons	752	790	829	870	910
Community Fisheries strengthened capacity	Number	100	100	100	100	100
Areas for wildlife and forest conservation and protection	Hectare	50,000	50,000	50,000	50,000	50,000
Community Forestry	Number	32	32	32	32	32

Source: NSDP, 2014-2018