

Lao PDR
Ministry of Agriculture and Forestry



**Strategy for Agricultural Development
2011 to 2020**

*Agriculture and Forestry for
Sustainable Development,
Food and Income Security*

*Vientiane
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Lao PDR – Administrative Divisions



Source: Messerli, P. Et.al. (2008)



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List of Abbreviations

ACB	ASEAN Centre for Biodiversity
ADB	Asian Development Bank
ADS	Agricultural Development Strategy (of MAF)
AFD	Agence Française de Développement (French Development Agency)
AGPC	Association des Groupements de Producteurs de Café du Plateau des Bolovens (Association of Coffee Producer Groups)
ANR / ANRD	Agriculture, Natural Resources and Rural Development Sector
APB	Agriculture Promotion Bank
ASEAN	Association of South-East Asian Nations
CPG/FPG	Crop Production Group or Farmer Production Group (FPG)
DAFO	District Agriculture and Forestry Office
DOA	Department of Agriculture (under MAF)
DoI	Department of Irrigation (under MAF)
DoLF	Department of Livestock and Fisheries (under MAF)
DoP	Department of Planning (under MAF)
DP	Development Partner (donor organizations)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FPG	Farmer Production Group
GAP	Good Agricultural Practice
GDP	Gross Domestic Product
GDPRD	Global Donor Platform for Rural Development
GHG	Green House Gas
GI	Geographical Indications
GMO	Genetically Modified Organisms
GMS	Greater Mekong Subregion
GoL	Government of Laos
GTZ	German Technical Assistance
HE	His Excellency
HRD	Human Resource Development
HYV	High Yield Variety
IADP	Irrigated Agriculture Development Plan
IATSC	Irrigated Agriculture Technical Service Center
ICT	Information and Communication Technology
IFAD	International Fund for Agriculture Development
IMT	Irrigation Management Transfer
IPM	Integrated Pest Management
RDMA	Integrated Rural Development in Mountainous Areas Program
IISD	International Institute for Sustainable Development
IFPRI	International Food Policy Research Institute
ISO	International Standard Organization
JICA	Japanese International Cooperation Agency
KIP	Lao currency; about 10,000 Kip to 1 EURO; 8,200 Kip to 1 USD
KOICA	Korean (Republic) International Cooperation Agency
LEA	Lao Extension Approach
LEAP	Lao Extension Agricultural Project
LFAP	Land and Forest Allocation Program
LNCCI	Lao National Chamber of Commerce and Industry
LULUCF	Greenhouse gas inventory that covers direct human-induced land use, land-use change and forestry activities



LWU	Lao Women's Union
MAF	Ministry of Agriculture and Forestry
MDG	Millennium Development Goal
MIT	Massachusetts Institute of Technology
MoIC	Ministry of Industry and Commerce
MPI	Ministry of Planning and Investment
MRC	Mekong River Commission
NAFES	National Agriculture Extension Services
NBRDPA	National Board for Rural Development and Poverty Alleviation
NCAW	National Committee for the Advancement of Women
NEM	New Economic Mechanism (as from 1986)
NGPES	National Growth and Poverty Eradication Strategy
NLMA	National Land Management Authority
NSEDP	National Socio-economic Development Plan (Five Year Plan)
NUDP	Northern Upland Development Program
NTFP	Non-Timber Forest Products
OA	Organic Agriculture
ODA	Official Development Assistance
OECD	UN Organization for Economic Cooperation and Development
PAFO	Provincial Agriculture and Forestry Office
PDR	People's Democratic Republic
PIP	Public Investment Program
PMO	Prime Minister's Office
PPD	Public Private Dialogue
PPP	Public Private Partnership
PPTA	Project Preparatory Technical Assistance
REDD	Reducing Emissions from Deforestation and Forest Degradation
regional	referring either to a sub-national territorial entity at meso-level (e.g. group of provinces or districts) or to a larger area of a group of countries (e.g. GMS)
SDC	Swiss Development Cooperation
SME	Small and Medium Enterprises
SIDA	Swedish Development Agency
SPS	Sanitary and Phytosanitary Standard
SUUFORD	Sustainable Forestry for Rural Development Project
STA	Science and Technology Agency
SWG	Sector Working Group
TA	Technical Assistance
TEEB	The Economics of Ecosystems and Biodiversity
UNDP	United Nations Development Program
UNFCCC	UN Framework Convention on Climate Change
VDF	Village Development Fund
VDP	Village Development Planning
WB	World Bank
WFP	World Food Program
WREA	Water Resource and Environment Agency
WTO	World Trade Organization
WUA	Water User Association
WUG	Water Users Group (informal non registered water users organization)
WUO	Water Users Organization (generic term for both WUG and WUA)



Executive Summary in English

The present Agriculture Development Strategy (ADS) 2011 to 2020 is a **long term framework for the development of the sector** which is not intended to provide operational details on the implementation of the 8 programs and their planned measures. The ADS will serve as a reference for orienting MAF decision makers and officers, as well as to serve as a reference for Development Partners providing their support to the ANR Sector.

A detailed **Agricultural Master Plan (AMP)** associated with an **Agricultural Investment Plan (AIP)** for implementing the Agriculture Development Strategy have been prepared as separate documents, which cover the 5 year period from 2011 to 2015. These plans will become integral parts of the 7th National Socio-Economic Development Plan (NSEDP).

The current overall economic context is characterized by a real **GDP growth**, which was estimated at 7 percent in 2009, is expected to increase to 7.8 percent in 2010, driven largely by resource sectors. Out of this growth of 7.8 percent, around 3.3 percentage points comes from the hydropower power sector; 0.9 percentage points from agriculture; around 0.4 percentage points for each of mining and construction; 0.8 percentage points from manufacturing; and, about 1.7 percentage points from services sector.¹ This growth has not only lifted a large number of poor out of poverty but the poorest also benefited. The goal is to graduate from Least Developed Country status by 2020.

The agriculture and forestry sector continues to be one of the key sectors contributing to the reduction of **rural poverty**. Accelerating poverty reduction depends largely on delivering an adequate combination of public investment, foreign direct investment, and trade liberalization to the sector. The ANR sector's overall contribution to national poverty reduction and aggregate economic growth has so far remained relatively modest and below its potential. Moreover, the contribution of the agricultural sector to overall national economic development has the potential to be very effective, as over 4 percent growth of agriculture translates into over 7 percent overall growth.

In broad terms, there are **two main farming systems**: namely the lowland rainfed and/or irrigated farming systems of the Mekong flood plains and its tributaries, and the upland swidden agriculture system. A third, smaller system, consists of horticultural crops and coffee cultivated on the Bolovens Plateaux. The Government has identified **specific area-based approaches and development initiatives** for the two main systems and aims to reduce income disparities between upland and lowland households. Rice cultivation remains the prevalent agro-economic activity and occurring on 72 percent of the total cultivated area, using more than 3000 varieties, many of them indigenous.

Global integration

The integration of Lao PDR into regional and world economies is an evolutionary process that is accelerating, providing the dynamism to catalyze development of the ANR sector. To accommodate this process the Ministry of Agriculture and Forestry (MAF) will transition from being a provider of public services to regulator of private sector involvement in service provision and facilitator of emerging new service providers; also by devolving gradually the provision of services to farmer organizations.

In the short- and medium-term, the challenge is to promote market-integrated ANR sectoral growth, while ensuring that benefits go to the rural poor in an environmentally friendly manner. Over the long-term, and as a responsibility to future generations, an additional challenge is to ensure that agricultural and forestry practices are ecologically sustainable: to

¹ World Bank, Lao PDR Economic Monitor, May 2010.



maintain production potential, the quality of agricultural biodiversity, and the integrity of natural resources.

Emerging trends and challenges

Several emerging trends are expected to pose challenges for the Government and ANR sector, making it more difficult for smallholder producers to participate in value chains when acting alone. In particular, Lao is expected to be seriously affected by the adverse impacts of climate change since its economy is relying on agriculture and natural resources affecting its efforts to achieve the Millennium Development Goals by 2015. Agricultural impacts of climate change particularly affect low-income rural populations that depend on traditional agricultural systems or on marginal lands. Price and quality competitiveness, mitigation and adaptation to climate change, grades and standards requirements (including sanitary and phytosanitary (SPS) measures), changing dietary patterns and consumer preferences in developed world markets, and the demand for higher levels of food safety -- resulting in the creation of private food standard organizations such as ASEAN-GAP and GLOBAL-GAP, are all seen as challenges as the ANR sector engages expanding regional and global markets.

Organic agriculture (OA), fair-trade, and geographical indicators (GI) are part of the global '**new agriculture**' trend and are promising elements of the agricultural development strategy. Organic agriculture is particularly suitable for economically lagging areas away from the Mekong corridor, where agro-chemicals have rarely been applied and which therefore have a distinct advantage in ease of certification.

Vision

It is in this context that the Government's vision for the development of agriculture, forestry, natural resources and rural areas is based on a holistic concept of long-term, **sustainable development**, including economic, social and ecological dimensions.

Development Goals by 2020

- Gradual introduction and increased application of **modernized lowland market-oriented agricultural production**, adapted to climate change and focused on smallholder farmers
- **Conservation of upland ecosystems**, ensuring food security and improving the **livelihoods** of rural communities

Reformulated specific goals by 2015

Goal 1: The improvement of livelihood (through agriculture and livestock activities) has **food security** as its first priority.

Goal 2: Increased and modernized production of **agricultural commodities** will lead to "**pro-poor and green value chains**", targeting domestic, regional, and global markets, based on organizations of small holder farmers and partnering investments with the private sector.

Goal 3: **Sustainable production patterns**, including the stabilization of shifting cultivation and climate change adaptation measures, are adapted to the specific socio-economic and agro-ecological conditions in each region.

Goal 4: **Sustainable forest management** will preserve biodiversity and will lead to significant quantitative and qualitative improvements of the national forest cover, providing valuable environmental services and fair benefits to rural communities as well as public and private forest and processing enterprises.



Strategic direction

The strategic direction for the ANR sector is to ensure a successful gradual transition from subsistence into commercial smallholder production. This can be achieved by applying innovative technologies and science-based practices for the systematic and continuous production of high-value agri-food products for local value-added agro-processing and for domestic, regional, and world markets. Modern farmer organizations will be created such as cooperatives, commodity associations, and commodity boards to provide economies of scale and effective participatory regulation.

Smallholder farming systems and the economies of rural communities will be upgraded and become more diversified, to increase production for food security and improve rural living standards. Smallholder agricultural production will be market-oriented, linked by farmer organizations and contract farming to local traders, agro-processors, and agribusiness enterprises, including land concessions. The aim is to contribute to reducing rural poverty by creating rural employment opportunities, transferring modern technologies to increase productivity, channelling agricultural production inputs and finance, and facilitating linkages to regional and global value chains.

Additional investments in irrigation, rural market access roads, markets (both hardware and software), and other high-cost rural infrastructure will be linked to '**SMART AGRICULTURE**', defined as an investment's contribution to poverty reduction and food security, increased production of pre-identified crops with pre-identified markets, and demonstrated commitments from rural communities to organize production units and to utilize, manage, and maintain the infrastructure.

Major themes

The major themes of the ANR sector strategy include a strong focus on modernizing agricultural production and creating value-added food and agricultural products aimed at reducing rural poverty, maintaining food security, and applying science-based management to the natural resources that are the foundation for sustainable agricultural and rural development and resiliency to climate change. ANR sector development will contribute to articulating national economic development objectives in terms more closely aligned with the United Nations Millennium Development Goals and in support of regional programs, specifically the Greater Mekong Subregion and the ASEAN Economic Community.

Area based production

Lowland production will be largely capital intensive, with the application of science-based technologies to improve and maintain the quality of soils and guide the use of agricultural chemicals; use appropriate-technology agricultural equipment for mechanized production; and, apply climate change mitigation and adaptation measures. The lowland/flatland areas also will be the focus of irrigated agricultural production to produce supplementary dry season rice to ensure food security and high value crops for value-added processing and export to regional and global markets. Entrepreneurial smallholder farmer organizations will be practicing irrigated agriculture in partnerships with agribusiness enterprises; in some locations as mega-projects. Irrigated agriculture projects will be organized based on Irrigated Agriculture Development Plans (IADPs) prepared by local governments in consultation with communities, and incorporated into district and provincial socioeconomic development plans. The financing of irrigation development and rehabilitation will be in the form of partnerships between communities and interested private investors, with the Government playing a facilitating and coordinating role, while monitoring and evaluating policy implementation.

Upland and highland agricultural production in the Northern and Southern regions will first and foremost aim to meet local food security needs. Livestock producers will raise cattle and buffalo both for domestic consumption and export, as well as small livestock and fish to



meet local protein needs. Upland agricultural production will be more diversified to provide a greater range of food groups to meet the nutritional needs of local populations.

Contributions of the sector to overall national development

In the next 10 years, the Agriculture and Forestry Sector will continue to play a substantial (although gradually declining) role in achieving the expected overall economic growth. On plausible assumptions of a slower decline in public investment and slightly higher FDI and trade, agricultural value added is likely to grow at 4.20 percent per annum. For the observed agricultural growth rate of 4.16 percent to be maintained, public investment has to be larger by 3 percent. If fiscal constraints are less binding, a 20 percent higher public investment would lead to a growth rate of just under 5 percent. While the short-run elasticity of GDP to agricultural value added is currently evaluated at about 0.67, the long-run elasticity is 1.59. This implies that a 1 percent growth in agricultural value added will result in 1.59 percent GDP growth. Agriculture will remain a key driver of the poverty reduction process, notably by incorporating progressively a larger proportion of the smallholders into commercial agriculture.

In various forms of co-management, rural upland communities and the Government will be collaborating to manage natural resources that provide valuable **environmental services** to the Nation. Fiscal policy measures will have been formulated that reward farmers as good eco-stewards to preserve watersheds, protect biodiversity, domesticate NTFPs, and conserve forests. Fiscal policy measures will include the granting of land use certificates to farmers providing satisfactory environmental services through agroforestry, biodiversity conservation and domesticated NTFPs, and conservation agriculture.

Forests in watersheds will be preserved to ensure their integrity for sustained hydropower production. Biodiversity will be conserved for eco-tourism. NTFPs will be available for consumption to supplement food security and for sale as cash crops to niche markets to increase household income. Forests will be conserved to sequester carbon and allow participation in income-generating international carbon pools (e.g., REDD and LULUCF). Each of these environmental services provided by the ANR sector generates income to support the economic development and quality of life of the Lao Nation.

Goals, outcomes and key implementation measures

An overview of goals and programs is presented as a Matrix in **Annex 1**. For the five year period until 2015, a detailed elaboration of the implementation measures is presented in the Agricultural Master Plan, accompanied by the respective Agricultural Investment Plan.



Part 1: Main trends in agricultural and forestry development

1.1 Overall economic growth and development context²

1. The economy has been growing at a rate of 6.5 percent each year since 2001, with growth reaching 7.6 percent in 2006. Real **GDP growth** in 2009 is expected to decelerate to 7 percent from 7.5 percent in 2008. An estimated 5 percent of the growth comes from non-resource sectors, namely: investment in plantations for agricultural crops and industrial forestry, manufacturing (including garments), steadily rising tourism revenues, growing retail and construction, and newly emerging food and non-food processing industries. Much of this growth is associated with increased foreign direct investment (**FDI**) in the hydropower and mining sectors. Recent analyses indicate that the overall effects of public investment in agriculture have been positive but that the effect of FDI on agriculture and forestry could be negative³.
2. **Poverty** rates have been declining, with the number of poor households falling from 46 percent of the total in 1992/93 to approximately 33 percent in 2002/03 and 27 percent in 2008. Growth not only lifted a large number of poor out of poverty but the poorest also benefited. **Inequality** (Gini coefficient) rose between 1992/93 and 1997/98 and dampened the contribution of growth to poverty reduction. Poverty remains largely rural (81% of poor lived in rural areas in 2007/08). The National Socio-Economic Development Plan (NSEDPlan) lays out the objectives of sustaining economic growth, accelerating efforts to reduce poverty, protecting the country's environmental resources, and promoting industrialization and modernization. The goal is to graduate from Least Developed Country status by 2020. Agriculture and Forestry sector is believed to be one of the key sectors contributing to the poverty declining trend.
3. A large majority of the population depends on agriculture and the use of natural resources for **livelihood**. Rapid growth in agriculture and non-agriculture sectors pushed the overall growth rate up to 7.5 percent in 2008 with a trend rate of growth of 4.16 per cent per annum for agriculture. The high rate and rural location of poverty indicates that successful agricultural and rural growth are the foundations for further poverty reduction and agricultural growth as observed in Lao PDR has larger poverty reducing effects than overall GDP growth. Accelerating poverty reduction will thus depend largely on delivering an adequate combination of Public investment, FDI and trade liberalization to the sector. Moreover, the contribution of the agricultural sector to the overall national economic development has the potential to be very effective as over 4 per cent growth of agriculture translates into over 7 per cent overall growth. However, direct and indirect increases in employment in other sectors, in combination with a slowing of current high population growth rates, may hinge largely on agricultural growth.
4. The **integration of Lao PDR into regional and world economies** is an evolutionary process that is accelerating, providing the dynamism to catalyze development of the ANR sector. However, with a small internal market, limited technical and institutional capacity (both public and private), and an extensive production base, the ANR sector's overall contribution to national poverty reduction and aggregate economic growth has so far remained relatively modest and below its potential.

² Data from World Bank: <http://go.worldbank.org/WZC7Y7W810>; Oxford Policy Management (2008)

³ Gaiha, G. & Annim, S. (June 2010), see also: World Bank (2010 b "investors are targeting countries with weak laws, buying arable land on the cheap, and failing to deliver on promises of jobs and investments"), Dwyer, M. (2007), Kenney-Lazar, M. (2010), IISD (2008), BBC (2010)



5. Factors influencing regional integration include: (i) increased flows of FDI; (ii) planting of new commodity crops such as rubber, tea and cassava; (iii) increased informal and formal trade volumes and participation in regional trading agreements; and, (iv) increased migration to both domestic urban areas and to neighbouring countries. These factors have accelerated the pace of market integration and have resulted in a significant **shift from subsistence to commercial agricultural production**. At the regional level, integration takes place through cross-border contract farming (usually between smallholder farmers and Thai, Chinese, or Vietnamese collectors, traders, or processors) and intensive (land concession-based or plantation-type) mono-crop commodity production.

1.2 Sector performance and overall sector development context

6. Agriculture is central to the Lao economy. It contributes 42 percent of GDP (2005/06); accounts for at least 15 percent of recorded exports; and accounts for 67 percent of the employed adult workforce. Most households in rural areas are near-subsistence farmers engaged in **rice-based agriculture**, collecting forest products, and raising livestock. The sector is still **dominated by smallholders** engaged in low-productivity rice production and characterized by low-level use of purchased inputs such as improved seeds/breeds and fertilizers. Most rice is consumed by the farm households that produce it, with less than 10 percent marketed. Agriculture-based products make up approximately 15 per cent (in 2007) of total recorded exports, the principal commodities being timber, coffee, corn and non-timber forest products. This proportion has declined rapidly in recent years (from 25 per cent in 2004) as a result of the increasing diversification of the export sector, particularly the rapidly-increasing export revenues derived from minerals and energy.
7. The **level of education** in the country remains very low although steadily progressing. Literacy rate among farmer is low as in the general population, limiting the capacity of farmers to benefit from a whole range of extension material or entering successfully and under fair conditions in many sorts of contractual arrangements with purchasers or suppliers (contract farming, 2+3, etc..). Actually, the formal agricultural education system focuses on the training of technicians (one faculty of agriculture at the national level and 3 provincial agricultural schools) and farmer education is only indirectly addressed through the extension system.
8. Production is primarily done at individual level with very few **farmer organizations** (groups, cooperatives, associations..) allowing for limited economies of scale and very limited bargaining power of farmers when engaged in commercial agriculture. Rural / market institutions are almost non-existent (no market boards, no commodity associations..) and this under-development stage allows for limited dialogue among stakeholder of a same commodity chain and limited capacity for the government to intervene successfully on markets (avoiding monopolistic behaviour, etc...).
9. At the national level, there are **positive trends** in yields of all crops except coffee. At the regional level, all crop yields show positive trends (except coffee). In the Central region, both maize and all four crops taken together show positive trends. In the Northern region, rice, maize, vegetables show significant positive trends. At the national level, maize yields grew most rapidly (annual rate of about 8 per cent), followed by vegetables (about 2.7 per cent) and rice (about 2.3 per cent). The combined crop yield thus grew at a rate of about 4.3 per cent. In the Southern region, maize grew at an impressive rate (over 8 per cent annually) while rice grew at a slow rate (about 1.75 per cent). By contrast, coffee recorded a more than moderate fall (over 5 per cent per annum). The Northern region recorded highest yield growth rates for maize, vegetables and rice (in that order). As a result, the combined yield growth was also highest (and



well above the national average).

10. On the other hand, there are **negative trends**, such as increasing land degradation as a result of inappropriate cultivation practices and as an emerging impact of climate change. Increased precipitation resulting from climate change causes increased erosion, especially on steep slopes. Erosion effects are most significant in areas where shifting cultivation has already led to soil degradation, particularly in those areas where population pressure has led to a significant decrease in the rotation period or where traditional lowland farmers encroach on neighbouring uplands to make up for low and often declining yields on their lowland paddy fields. Increased land degradation leading to lower productivity may also increase desertification as new lands are still threatened by slash and burn cultivation.
11. The sector comprises diverse subsectors ranging from crop production to livestock, fisheries, forestry, water resources, and non-timber forest products (NTFPs). The **diversity of agro-ecological zones dictates a range of production systems**, including rainfed and irrigated rice-based farming systems in the Mekong River valley plains; shifting cultivation in upland areas; and cash-crop and livestock production in upland plateau areas. Agriculture is still largely rice-based subsistence farming; however, some major changes in product diversification began in the early 2000s with the introduction of fast-growing trees, rubber, and maize. Rice cultivation is still the single most prevalent economic activity and takes place on 72 percent of the total cultivated area, using more than 3000 varieties, many of them indigenous to. Lao PDR has few comparative advantages for intensive commercial rice production except for specific or indigenous varieties (glutinous or non glutinous) or specific production systems (organic, fair trade, niche markets...).
12. Lao **smallholder farmers** produce the majority of the fresh food consumed, except for specific (e.g. milk) and processed products which are still mainly imported. Smallholders are rarely engaged in storage and processing of their production, due to their lack of skills and lack of investment capacity. With the current dominance of large scale regional agro-food companies, opportunities for smallholder to manage by themselves value adding agricultural products processing schemes will remain limited and risky, if not encouraged by adequate policies.
13. In broad terms, there are **two main farming systems**: namely the lowland rainfed and/or irrigated farming systems of the Mekong flood plains and its tributaries, and the upland swidden agriculture system. (A third, smaller system, is the cultivation of horticultural crops as well as coffee around the Bolovens Plateau in the south of the country.) Half of the population (3.0 million people) resides in lowland areas, about 30 percent (2.0 million) reside in upland areas, and the remaining population (1.0 million) is in areas of mixed upland and lowland.
14. Besides these broad categories, Lao PDR's rural landscape is characterized by **six major agro-ecological zones** (see map below) with the following dominant features:⁴

The Vientiane Plain extends over parts of Vientiane, Bolikhamxay and provinces and covers the higher plains and lower slopes in the areas. Altitude ranges from 500-1000 meters and annual rainfall from 2,500-3,000 mm. The period is 240-270 days. The landform is dominated by topography and middle mountain areas. Natural forests still exist but have been affected by shifting cultivation and illegal logging. Upland rice cultivation is one of the main crops but animal husbandry is also of importance. The

⁴ For a more detailed and technically more sophisticated approach, see JICA (2001), Chapter 4.2 on "Assessment of Agricultural Potential"



total rural population is approximately 300,000 people with low to medium density. Poverty is concentrated in semi-urban areas.

The Mekong Corridor includes the banks and floodplains of the Mekong River and the lower alluvial valleys of its tributaries. Altitudes range from 100-200 meters and the landscape consists mainly of plain to modestly sloping areas. The area is well suited for a wide range of crops, particularly lowland rainfed and irrigated rice in flatlands and cash cropping on sloping areas. The total rural population in the Mekong Corridor is about 1.5 million people making it the most densely populated area in Laos.

Lao PDR – Geographic Areas



Source: <http://www.mapsof.net/laos%20map/physical-maps>

The Central-Southern Highlands zone include parts of Khammouane, Savannakhet, Saravane, Sekong and Attapeu provinces and extends parallel to the Mekong covering the upper valleys of its tributaries and upland areas. Altitude range varies from 200-500 meters and the zone has limited potential for productive agriculture (poor acid soils, high risk of UXO). The rural population density is low and poverty incidence is one of the highest. Extractive cross-border investments (mining,



forest) and improvements in transportation have started impacting the local rural economy without significant poverty reduction.

The **Northern Highland** zone covers the mountain areas of Phongsaly, Luangnamtha and Bokeo in the extreme Northwest, parts of Huaphanh and Xiengkhuang and eastern parts of Bolikhamxay. Altitude varies from 1,500-2,500 meters. The zone is characterized by remoteness and high erosion risk (steep slopes). However, soils are suited for farming, and both cash cropping (annual and perennial) and animal husbandry are developing quickly when communication means are improved and investments in place. Natural forests have been largely removed by shifting cultivation and commercial or smallholder rubber plantations. Overall population density is low; poverty incidence is medium to high.

Upland livelihoods and farming systems are undergoing a rapid transition from subsistence-based systems to ones more geared towards the market. The main factors behind this are a “policy push” aimed at reducing poverty and stabilizing farming systems (land allocation policy, focal area development) and a market “pull” coming from increasing regional demand for agriculture products.

The **Northern Lowlands** area comprises parts of Luang Prabang, Phongsaly, Oudomaxay and Xayabury. Altitude ranges from 500-1,500 meters and annual rainfall ranges from 1,500-2,000 mm. The landforms in this zone are predominantly mountainous and similar to those in the Northern Highlands. The original natural forests have been removed and remaining forests are largely shaped by shifting cultivation, rapid expansion of cash cropping (maize) and livestock grazing. The population density is higher than in the Northern Highlands, poverty incidence is in decline. Development of commercial agriculture is bringing sustainable improvements in farmers livelihood. There are, however, major concerns regarding the sustainability of the farming systems that have emerged (severe erosion).

The **Bolovens Plateau** zone includes parts of Saravane, Sekong, and Attapeu provinces in the south of the. With altitudes ranging from 500-1,500 meters, good rainfall (2,500-3,000 mm) and very rich soils the Bolovens Plateau is extremely suitable for a wide range of farming systems. This natural area is primarily used for cultivation of tree crops (coffee, tea and cardamom) but some shifting cultivation for upland rice production occurs as well. In recent years, medium to large scale agriculture concessions have developed rapidly leading to tensions on land access and the emergence of a radically different agriculture model (capital, chemical and manpower intensive coffee, rubber plantations). The total rural population is estimated to be around 60,000 people with a low poverty incidence.

15. The different regions of the country have different production potentials (as exemplified by the irrigated area in Table 1 below), which lead to **regionally unbalanced development and income disparities**.
16. Based on the above agro-ecological zones, the Government has identified **area-specific development initiatives to reduce the disparities** between the outcomes for these zones (see chapter 5.4.6 below on area-based approach, and see example for irrigated agriculture in Annex 2). Some 300,000 to 400,000 ha of rainfed lowland is used for traditional glutinous rice production during the wet season (May-October) with the land left fallow and grazed during the dry season (November-April). Constraints to lowland rice production include low soil fertility, moisture stress during critical periods of growth and/or inundation, poor seed quality, insect pests and rodents, and low use of suitable high-yielding varieties (HYV) of rice. Irrigated rice is produced on between 100,000 and 150,000 ha, mostly to supplement wet season production, often along with



high value vegetable crops during the dry season. These latter farms show significant potential for the development of commercial farming.

1: Dry Season Crop Areas 2007-2008 - Paddy and Other Crops

	Provinces	Agric. Land 2008 (ha)	Paddy upland 2008 (ha)	Paddy Wet S 2008 (ha)	Irrigated Area 2007-2008 (ha)			
					Planned Irrigable Area	Irrigated Area Planted	Irrigated Paddy	Irrigated Crops
Northern Region		385,980	83,374	116,010	20,900	19,984	9,386	10,598
1	Bokeo	25,726	8,677	14,258	3,600	4,565	1,653	2,912
2	Luangnamtha	23,489	5,141	11,221	3,850	2,294	663	1,631
3	Phongsaly	25,681	12,743	5,922	1,900	486	36	450
4	Oudomxay	60,851	7,460	12,340	1,200	884	384	500
5	Xayabury	86,437	13,450	27,370	3,500	4,313	2,237	2,076
6	Luangprabang	122,023	15,779	12,578	3,100	3,758	2,208	1,550
7	Huapanh	12,962	12,040	11,815	2,200	2,307	2,156	151
8	Xiangkhouang	28,811	8,084	20,506	1,550	1,377	49	1,328
Central Region		452,614	17,586	159,744	47,750	56,384	40,206	16,178
9	Vientiane Province	146,423	12,009	45,338	12,200	21,824	11,856	9,968
10	Vientiane Capital	119,700	898	39,280	21,800	24,373	20,728	3,645
11	Bolikhamsay	54,972	4,679	24,346	4,950	3,471	3,278	193
12	Khammouane	131,519	0	50,780	8,800	6,716	4,344	2,372
Southern Region		518,392	10,563	344,196	48,850	62,533	41,765	20,768
13	Savannakhet	240,924	570	161,354	28,200	38,806	25,486	13,320
14	Saravane	94,839	5,509	65,424	9,250	8,463	8,013	450
15	Champasak	144,205	0	92,160	9,150	13,411	6,750	6,661
16	Sekong	14,073	3,134	6,969	1,250	1,130	870	260
17	Attapeu	24,351	1,350	18,289	1,000	723	646	77
Total Area (ha)		1,356,986	111,523	619,950	117,500	138,901	91,357	47,544

17. The agriculture sector is expected to contribute even more significantly in the future to national economic growth, income, and employment for much of the country's population. In the short and medium term, the challenge is to promote sectoral growth and to ensure that this **growth benefits the majority of the poor in the rural areas** in an environmentally friendly manner. For the longer term, and as a responsibility to future generations of Lao people, an additional challenge is to **ensure ecological sustainability** of agricultural and forestry practices to maintain production potential, biodiversity, and the integrity of natural resources.
18. However, this **long term sustainability is threatened** by a number of factors, notably the **long term trends in climate change**. It is predicted that the annual mean **precipitation will increase** in the **last** decade of the 21st century (2080–2099) by **4.2 percent** averaged across the Mekong River Basin (MRB), with the majority of this increase occurring over the Northern part. Annual mean temperatures are also projected to increase by approximately 2.6°C (averaged across the MRB), leading to significant changes in the hydrology of the MRB. The Mekong River sub-basins will experience an increase in the number of wet days in the future. It is also predicted that the magnitude and frequency of what are now considered extreme events are also expected to increase resulting in increased risk of flooding. More frequent extreme climatic events may also cause a loss of rice productivity in the range of 30 to 50 percent during a moderate flood year.⁵
19. **Household vulnerability to drought** is proportional to their livelihoods' exposure (non irrigated agriculture, farm labour) to drought, and to the resilience of the household. According to WFP estimates, 46 percent of the rural population in Lao PDR are vulnerable to drought, most of whom are located in the lowlands, especially in the Southern regions and in the provinces of Savanakheth, Xayabury and Luang Prabang.

⁵ See, e.g.: IFPRI (2009), FAO (2007), World Bank (2010 a), MRC (2009), WFP (2009)



This is in addition to the 2 percent that are already chronically food insecure. Most households vulnerable to drought are farmers or unskilled labourers. 12 percent of agro-pastoralists are also considered vulnerable to drought. In total, it is estimated that around 188,000 households are at risk of food insecurity caused by drought. These vulnerable households are mostly located in Khammuane, Savannakhet, Saravane, Champasack, Xayabury and Vientiane provinces.

1.3 Recent structural and territorial changes

20. The ANR sector has been undergoing a slow, but steady process of evolutionary change for the past two decades. The **reform process** that began with the New Economic Mechanism (NEM) in 1986 can be divided into several distinct periods, over the last two decades. Table 2 summarizes the milestones of economic reform.

Table 2: Economic Reform Milestones

Period	Character	Major Macroeconomic and Policy Events
1975–1986	Prereform	Accelerated socialism, state ownership and control of assets, collectivization of agriculture, economic stagnation, collapse of rice production (1979), and inflation; COMECON aid and trade predominate; realignment of the local currency (kip)
1986–1989	Early economic reforms	Price and trade liberalization, ending of major state monopolies, exchange rate adjustment, and tax reform; beginning of the New Economic Mechanism (NEM); foreign investment law and foreign investment code, allowing foreigners to hold 100% capital, repatriation of after-tax profits, and guarantees against nationalization
1990–1994	Successful economic management and stabilization	Adoption of new Constitution in 1991; structural adjustment measures, supported by World Bank, International Monetary Fund, United Nations, Asian Development Bank, and other aid agencies; increased revenue collection, effective monetary policy, stable exchange rate, and modest inflow of foreign direct investment; Central Bank Law (Bank of Lao PDR as the central bank)
1995–1997	Emerging financial problems	Political commitment to reform weakened; decentralization began; weak fiscal (weak revenue administration, partly compounded by decentralization) and monetary policies (such as policy lending to state-owned enterprises [SOEs]); competitive kip devaluations, slow structural change (especially with SOE divestment); the Lao PDR joined the Association of Southeast Asian Nations (ASEAN)
1997–1998	Asian financial crisis	Foreign exchange losses, some capital flight; budget problems and deficit financing; recurring bouts of inflation
1998–2000	Financial destabilization	Continuing destabilization and recurring budget deficits; excess liquidity and inflation, currency depreciation
2000–2004	Recovery and restabilization	5-year recovery plan adopted; improved fiscal discipline, with some evidence of structural transformation and revitalization of reform process; increasing regional integration; National Growth and Poverty Eradication Strategy adopted

21. The following **main trends** can be observed as the agriculture and forestry sector evolves: **A continuous improvement of national rice self sufficiency and local food security**. Rice is the staple food, accounting for about 67 percent of daily calorie intake of most of the rural population. Rice production has dramatically increased from 1.3 million tons in 1993 to 2.7 million tons in 2007. The main drivers of this increase are: an expansion in irrigated area (correlated to heavy public investments in the sub-sector) and the adoption of improved varieties and advanced on-farm management practices. The on-going Irrigation Management Transfer (IMT) process has substantially contributed to increased effectiveness of the irrigation schemes. This evolution has contributed to rural poverty reduction and to attaining country self-sufficiency in recent years. Self sufficiency remains nevertheless limited geographically to regions with favourable natural conditions (mostly to the Mekong plains) and is not attained in many mountainous districts with distinct locational disadvantages.⁶

⁶ see MIDAS (2008)



22. At the national level, approximately 270,000 or 37 percent of children under 5 (CU5) remain underweight and over the past ten years, this rate has not declined. **Chronic malnutrition remains the biggest problem** with nearly 300,000 or 40 percent of CU5 stunted. There is a sharp increase in stunting and underweight between 6 and 24 months; with 23 percent of the population being undernourished. The most significant constraint to the availability of food is the low level of domestic production of food items resulting from low levels of productivity and high risks in the agricultural sector. A **National Nutrition Policy and Action Plan** has been elaborated by the GoL with support from several development partners. This document forms the strategic guideline for all stakeholders in the field of nutrition and food security in Lao PDR.
23. **The gradual shift from “subsistence smallholder agriculture” to a “subsistence associated with commercial orientation smallholder agriculture”** concerns the challenge of increasing the marketable surplus of subsistence smallholders from the current approximately 10 percent to a significantly higher percentage by the year 2020. In order to achieve this, more reliable baseline data will be gathered in the near future with the update of the Agricultural Census. Specific and realistic targets and milestones in terms market exposure will have to be defined for the conditions of every agro-ecological region and production system. However, depending on these conditions (and to a certain extent on the mind-set of the stakeholders in every region), this gradual shift will go at different paces for different regions, and in some localities might take generations to complete.
24. Although agriculture’s share of the national economy has declined from 61 to 41.8 percent between 2000 and 2007, production volumes continue to grow and provide inputs to regional and global value chains. The recent growth of agricultural output, and particularly of cash crops and livestock production has mainly been the **result of the following factors**:
- **Reforms** that reduced the barriers to domestic trade, allowing comparative advantage in cash crops and livestock production to be better exploited;
 - Substantial **improvements in transport infrastructure** (north south / east-west corridors);
 - Strong **economic growth in China, Thailand, and Viet Nam** exercised a “demand-pull” effect;
 - Administrative **barriers to international trade were reduced**, in particular to trade with China and Thailand, allowing farmers to respond to market opportunities; (Registered agricultural trade grew 8.4 percent annually between 1997 and 2007, but the sector’s unregistered trade, including that of rice, is believed to be significantly higher);
 - Substantial **increases in the price of the main agricultural commodities** during the period 2000-2008, increasing sharply farm profitability and stimulating production.
 - **Availability of land** in Lao PDR, allowing farmers to expand their cropping area (example: average size of smallholder farms multiplied by 5 during the period 1995-2005 when commercial maize production took off)
 - An active **involvement of the private sector** (mainly represented by large regional agri-food conglomerates) in the dissemination of techniques, inputs, and adequate genetic material to the smallholder farmers, credit, hybrid seeds, tractors and/or land preparation services, etc;
 - **Increased domestic demand**, resulting from a population growth of 53 percent between 1986-2003, and the simultaneous impact on incomes of economic growth and a steady decline in the need for rice self-sufficiency;



25. At meso-level, a strong **correlation between cash-cropping orientation and lower poverty rates** can be observed on poverty incidence maps⁷. This is particularly obvious in regions such as the Bolovens Plateaux (coffee, cabbages, legumes, vegetables); the “feed corn production basins” of southern Xayabouri Province, the Xieng Khouang Plain, other northern provinces (Nam Beng “valley” in Oudomxay, etc..). When a conducive environment is set (market demand, attractive prices, availability of land, and provision of adequate production factors/environment such as seeds, credit, free markets etc.), the involvement of smallholders into commercial agriculture can be very quick and effective. Nevertheless, over-reliance on a single commercial crop may place households at risk due to market fluctuations or crop failures. Diversity of production remains a key smallholder risk mitigation strategy worthy of support.
26. While the volumes and value of exported agricultural commodities have increased significantly during the last decade, the vast majority of the production exported remains unprocessed at farmer level (e.g., coffee sold mostly as cherries by smallholders) or even national level (export of unshelled corn and livestock). This **mode of operation with very little value-added domestically** drastically limits the impact of commercial agriculture development on farmers, local and national revenues.
27. The current shift towards (mainly export oriented) commercial agriculture is based on the interaction of several types of stakeholders, mostly private, based in Laos or not: producers, middle men, input suppliers (credit, chemicals, etc..) brokers, processors, exporters, importers, etc...The arrangements between these stakeholders are diverse and complex, but not always optimal and rarely properly regulated. **Monopolistic or oligopolistic situations** are frequent, interest rates offered to farmers by the private sector are high or governed by unclear arrangements, and, **access to information is often very asymmetrical** (exporters informed about international commodity prices trends, whereas farmers do not have access to price information systems).⁸
28. For some of the key exported agricultural commodities, some embryo of **organizations of value chains stakeholders** is beginning to appear, either promoted by the government or at the initiative of specific stakeholders: corn traders association in Oudomxay, Lao Coffee Association, Association of Coffee Producers Groups (AGPC), etc..⁹
29. **The emergence of a new type of “farmer”: commercial entrepreneurs who have been granted medium to large scale concessions.** Although still dominated numerically by smallholder and family farming, the agriculture sector has seen in the last decade the rapid emergence of a new type of “farmer” through the granting of medium to large scale agriculture concessions by the government to entrepreneurs.

However, the **majority of the areas granted as concessions is not yet in production** or hasn’t even started to be planted. The ADB states that only 4 percent of the total land area (23.6 million ha) or 947,200 ha is arable land (counting only ploughable flat land).¹⁰ Approximately 1.5 million ha (including sloping land) have been approved for concessions, of which only 500,000 ha are actually utilized.^{11), 12}

⁷ Messerli, P. et.al. (2008)

⁸ see Gebert, R. (2010); GoL-MAF (2009)

⁹ GoL-MAF (2010 a); GoL-PMO (2010); compare GoV (2007)

¹⁰ ADB (2006)

¹¹ GoL-MAF (2009)

¹² Initiated by the National Land Management Authority (NLMA), a discussion is ongoing about the introduction of a land tax, which could then also be imposed on under-utilized concession land with the intention of increasing the percentage of productive tillage of concessions. Estimated revenues are in the order of 5% of GDP; see Vientiane Times, 30th of June, 2010; compare for Vietnam GoV-PMO (2009)



Sudden expansion of large scale plantations has been particularly visible on rubber, leading to a situation where 80 percent of the area planted in rubber in Lao PDR pertains to the “medium to large scale plantation model”, de facto dominating family based rubber plantations. The emergence of this new type of “farmer” is leading to the definition of **new roles for the Ministry of Agriculture and Forestry**, such as: analyzing the suitability of the concession projects submitted (social and environmental safeguards, the risk of smallholders with indigenous / traditional land rights being expropriated and marginalized, plant protection, introduction of new species, etc.), controlling the operations of these concessions, evaluating and adapting land concession fees, encouraging the establishment of concessions basing their operations on national comparative advantages, auditing and re-orienting non-profitable concessions, etc..

30. **An increased pressure on the natural resources.** Often in competition with other projects (e.g. mining, hydropower) the Agriculture and Forestry Sector is actually one important factor of natural capital erosion. In the past, **shifting cultivation** expansion into pioneer areas (protected or primary forests) was an important factor of forest degradation. But this type of pioneer agriculture has been effectively discouraged, using a combination of policies.

Over the past 10 years, the **continued illegal logging**¹³ in conservation areas or non-allocated primary or secondary forests has entailed dramatic damages to the national forest cover and fragile soils. The development of medium to large scale agriculture concessions has also contributed to severe environmental degradation and biodiversity losses by encroaching on protected areas or by replacing diversified secondary forests with mono-cropping, notably rubber.

The current strong development of **smallholder-based cash cropping**, although beneficial in the short term, and contributing to poverty reduction, is accompanied by large scale deforestation (conversion of fallows or secondary forest into annual cropping plots), soil degradation and erosion, and an increased use of chemicals.

In an important number of cases, the environmental externalities of the new emerging production systems/modes (concessions, cash crops expansion, too intensive logging) are not internalized and compensated by the revenues generated. Sustainability and **cost-benefit ratios of these systems** (macro-economic and resource economics) need to be further analyzed in the near future. **Adequate policy guidance** needs to be issued to avoid further degradation or possibly the complete loss of natural capital (in particular valuable forest stands) by the year 2020.

1.4 Evolution in the roles of the Ministry of Agriculture and Forestry (MAF)

31. **Declining Public Expenditure in Agriculture and Forestry Sector**¹⁴, combined with sharp increases in FDI

At central level, agricultural public expenditures are on an overall declining trend, whether measured as a percentage of national or agricultural GDP, or in absolute amounts. Between 2000/01 and 2004/05 the volume of funds spent by MAF evolved from 17 percent of total public spending to only 6 percent by 2004/05. The steep decline occurred principally as a result of **rapidly falling capital expenditures**, particularly at provincial levels.

¹³ See, e.g. EIA (2008)

¹⁴ Source: Oxford Policy Management (2008)



In nominal terms, capital expenditure declined sharply from Kip 567bn to Kip 268bn because of reduced expenditure on the investment-intensive irrigation sub-sector. By contrast, **recurrent expenditure increased by 150 percent** over the same period. Unlike agriculture, total expenditure on all sectors at the national level showed a 12 percent annual increase over the same period.

Sub-national expenditures show a similar trend with the proportion of total agricultural expenditure accounted for by the provinces having seen a significant fall between 2000/01 (86.5 percent) and 2004/05 (65.7 percent). This can be explained almost entirely by the **precipitous drop in the funding of irrigation construction**: from Kip 356 billion to Kip 28 billion within these two years alone.

An average of 85 percent of the capital development funds made available through the budget from the government's own resources was spent on developing irrigation infrastructure. Donors ("foreign capital") accounted for some 75 percent of total capital expenditure in 2004/05, compared to only 18 percent five years earlier. Almost all recurrent expenditure is met from the GoL's own resources.

Given the positive effects of public investments on the agriculture sector, a **basic requirement would be to reverse the rapid decline in public investment in agriculture as well as its extreme volatility; since both have adverse effects on agricultural value added and its volatility.**

Nevertheless in a predictable context of relative decline of available public resources for the sector, the role of the Ministry of Agriculture and Forestry (MAF) is to catalyze and coordinate investments of **various sources of funding for the sector**. For the next five years, three main sources of investments are identified, namely: public Investments associated with official development assistance (ODA) grants, loan based investments, and mega-projects sustained by foreign direct Investment (FDI). MAF will play a role as promoter of the agriculture and natural resources (ANR) sector, attract and guide investors, mainly from the region.

Both ODA and FDI have played important roles in developing or reshaping the ANR sector. ODA has contributed significantly to capacity building of human resources and institutional strengthening. Several recent studies have examined the impact and implications of FDI on the ANR sector. An assessment of FDI activities in the south is presented in the "*Agriculture and Natural Resources Sector Needs Assessment*", Phase 2 (ADB, PPTA-4843-Lao), Annex on *Contract Farming and Plantations*.¹⁵

32. **Responsibility for rural development** is shared among a growing number of government bodies

A growing number of governmental agencies share responsibilities for rural development and managing land, natural resources and agriculture. Several of these agencies have been created relatively recently, and others have recently undergone major restructuring and reorganization exercises. This has resulted in a risk of overlapping jurisdictions, confusion over roles and responsibilities, and in some cases duplication of effort, both among the agencies and within the agencies. At the national level, the primary agencies involved are:

- National Leading Board for Rural Development and Poverty Alleviation
- Ministry of Agriculture and forestry (MAF)
- Ministry of Industry and Commerce (MoIC)
- National Land Management Authority (NLMA)
- Water Resource and Environment Agency (WREA)

¹⁵ ADB (2008), available on LaoFAB website: www.laofab.org



The **National Land Management Authority (NLMA)** and the **Water Resource and Environment Agency (WREA)** serve as focal points for government policy related to land, water and environment. Since these sectors have large and important areas of overlap with the agriculture and forestry sector, coordination in policy related research and analysis is extremely important. The **Ministry of Industry and Commerce (MoIC)** has become an increasingly relevant player in rural development, since commercialization is a key element of agriculture and forestry sector policy. MoIC also links with the private business sector through the **Lao National Chamber of Commerce and Industry (LNCCI)**.

The recently created **National Board for Rural Development and Poverty Alleviation (NBRDPA)**, institutionalized directly at the Prime Minister's Office as a body for policy coordination, is still in the process of being built up and overlaps with MPI and MAF on policy formulation and implementation issues. A further clarification of role and mandate of this board is urgently needed if it is to effectively coordinate the various government bodies involved in rural development issues.

33. **Agricultural services:** new missions for the Ministry of Agriculture and Forestry and a necessary gradual shift from the direct provision of services to the provision of an **enabling regulatory framework with a level playing field for all stakeholders**.

Since the enactment of the New Economic Mechanism (1986), the role of the Ministry of Agriculture and Forestry has constantly evolved, withdrawing gradually from a direct role of provider for some of the agricultural services. In parallel, the **private sector has come into force** and is actually actively providing a certain range of agricultural services to farmers: inputs (fertilizers, chemical), seeds (e.g. maize hybrid seeds), tools/innovation (hand tractors, etc.). An active network of private retailers linked to large - sometimes regional – input providers (e.g. the hybrid maize seeds provision by CP) is gradually established where road access has improved and commercial agriculture is developing.

On irrigation management services, MAF has applied since 10 years a policy of gradual withdrawal, allowing and facilitating the **emergence of Water User Associations (WUA)**.

The development of commercially based provision of agricultural services is bringing numerous advantages to farmers, but is as well posing new problems and challenges to them and to MAF and its provincial and district offices. Among the most severe problems, the following issues can be extensively observed at field level, calling for more regulatory capacity from MAF:

- the provision of dangerous chemicals (sometimes banned from imports);
- the lack of awareness of farmers, women, children concerning the risks of some of these chemical, and the fact that quite often these chemicals are sold without clear user instructions in Lao language;
- the selling of counterfeit chemicals or fertilizer;
- the selling of fake or low quality seeds (e.g. maize hybrid seeds);
- the provision of loans by the private sector to farmers at very high interest rates, usually in the framework of contract farming (e.g. coffee and maize value chains with real interest rates close to 40 percent annually);
- the tendency of some private sector stakeholders to organize local monopolies on the provision of some services, not allowing market rules to function properly.

In parallel, one can observe in more **remote regions of the country and for certain types of services** that the private sector is still not actively responding to the smallholders' needs. This is in particular the case for areas with high factor costs for



transport and for veterinary services, agricultural extension, training and coaching in general. In these cases of obvious market failure, the situation in these areas and for these services is calling for MAF to - as far as possible - continue providing services directly, but in parallel provide incentives for the private sector to provide so-called **“embedded services”** (e.g. the provider of agro-chemicals provides training to farmers on how to properly use these chemicals).

In this context, MAF will transition from being a provider of public services, to being a regulator of the private sector involvement in service provision and a facilitator for the emergence of new service providers, also by **devolving gradually the provision of services to farmer organizations**. Carefully planned **public-private agricultural development partnerships will** be favoured, working closely with communities and local governments to bring agricultural development and natural resources management closer to the grassroots. The objective is to ensure effectiveness and a sense of ownership by key stakeholders, particularly smallholder farmers. Measures to achieve this objective include contracting out of services; creating public-private partnerships when feasible; devolving management to user groups; forming service cooperatives; and, selective privatization.

34. ANR Sector as an environmental service provider

A greater emphasis will be placed on **valuing the environmental services** provided by the ANR sector to other economic sectors including tourism (eco-tourism and agro-tourism); energy (hydropower development linked to healthy watersheds), industries (wood industries dependent on sustainably managed forests), carbon sequestration, and, processing and trade in niche market products (non-timber forest products or NTFPs), which are all likely to feature in modern ANR sector management.

In this context, MAF will invest important resources, launching initiatives such as the REDD plus mechanism as well as other similar **global initiatives financing the provision of environmental services by the agricultural sector**. MAF will participate actively in the implementation of the National Action Plan for Climate Change Adaptation.

35. Managing successfully regional and global market integration, upgrading and pro-poor governance of value chains

The value of commercially exported agriculture and forestry products has constantly increased over the last 15 years, and cross-border trade has become more and more effective on an informal or formal basis. Farmers involved in commercial agriculture have become part of regional or even global value chains and will need new skills to manage this integration successfully.

MAF's role will be to ensure that the newly shaped **“pro-poor and green value chains”** are effective and that the interests of the poorest stakeholders are respected. MAF's role in this systemic approach is that of **“Pro-poor Value Chain Governance”**¹⁶ in the best interest of the weaker stakeholders in the chain and with the intentions of strengthening their position, and ensuring that a significant part of the value-added remains as additional incomes with small scale producers and rural SME.

¹⁶ For a clarification of concepts and terminology, notably the distinction between “supply chain management” (as seen from the perspective of large scale buyers in industrialized countries) and “value chain governance” (as seen from the perspective of local producers and government), see Wiemer, H.-J. (2009); see also Humphrey, J. and Navas-Alemán, L. (2010)



In particular, MAF is to ensure by proper monitoring and – if necessary – by honest brokerage, that trade monopolies are not organized, that the bargaining power of smallholders is increased and that cross-border trade is taking place following the regional and bi-lateral agreements, that Lao products are well labelled and better recognized by regional and global markets as quality products. Creation of commodity associations will be encouraged by MAF in the next ten years in collaboration with the Ministry of Industry and Commerce. These commodity associations will be public-private partnerships, taking the shape of public forums where **value chain upgrading strategies** for Lao agriculture products will be discussed. It is anticipated that by 2020, commodity associations will be in place for 5 major agricultural commodities: Maize, Coffee, Rubber, Rice, and Livestock.

The specific implications for **ANR sector governance** will require an effective, transparent, and inclusive review mechanism. State interventions in the ANR remain important for managing market failures and uncertainties that will increase with new forms of agriculture.

Part 2: Capitalizing on lessons learned

2.1 Policy and legal framework

36. Agricultural and forestry development policies announced in March 2006 at the 8th Party Congress of the Lao Peoples' Revolutionary Party (8th Party Congress) and implemented by the Government, were influenced by the **National Growth and Poverty Eradication Strategy** (NGPES) (2004). The Government translated these policies into specific targets and objectives through the five-year Socio-Economic Development Plan which further identifies strategic programs and priorities to be achieved in each sector. In this context, the NGPES was subsequently incorporated into the current **Sixth Five-Year National Socio-Economic Development Plan** (2006-2010, 6th NSEDP) that was adopted by the Lao National Assembly in June 2006. The NSEDP has played an important role in achieving the targets outlined in the **Ten-Year Socio-Economic Development Strategy** (2001-2010) approved by the 7th Party Congress in 2001, and reaffirmed by the 8th Party Congress in March 2007.¹⁷ The legal framework for the role of MAF in rural development is found in Decree 09/2004 and Decree 13/2008 of the Prime Minister's Office (PMO).
37. Four goals and 13 measures were formulated by MAF to support the 11 National Programs and 111 Focus Projects, to execute the resolution of the 8th Party Congress and to achieve the targets of the 6th NSEDP. They have formed the core of the **Government's Strategic Vision for the Agricultural Sector to 2010**.¹⁸ The goals and measures provided guidance to MAF personnel responsible for preparing and implementing agricultural development interventions and other development-related activities at all levels of government. The four goals adopted by MAF and the ANR targets expected to be achieved include:
- **Goal 1: Food Production:** The specific targets related to national food security have been defined as follows:
 - Increase agriculture and forestry GDP growth rate by 3.4 percent annually.

¹⁷ Opening Address by HE Mr. Bouasone Bouphavanh, Prime Minister of Lao PDR & Chairman of the National Steering Committee for the Round Table Process, the Millennium Development Goals, and National Growth and Poverty Eradication Strategy, 28 November 2006, Vientiane.

¹⁸ GoL-MAF (1999); for other strategic planning documents in Lao, see GoL-MAF (2003), JICA (2001), GoL-MAF (1990) and GoL-MPI (2010); for comparison, see e.g.: Vietnam MARD (2007), Uganda MAAIF (2010); for a planning approach with a different agenda see: Northern Laos Planning Group (2008)



- Maintain the level of food production at 400-500 kg per capita per year, which corresponds to 3.3 million tons of paddy rice by the end of 2010.
- Increase the quantity of food in the 47 poorest districts bringing it equivalent to the national level (350 kg per person per annum).
- Increase the production of meat, eggs, fish, and fresh milk by 5 percent annually, corresponding to an average consumption demand of 40-50 kg per capita per year.
- **Goal 2: Commodity Production:**
 - Supply raw materials and agriculture and forestry products to the industry and services sectors (processing industries).
 - Increase the export share of agriculture and forestry products to 1/3 (approximately US\$1 billion) of the total export value of the commercial and services sectors (US\$3.48 billion) by 2010.
- **Goal 3: Stop Slash-and-Burn Cultivation:**
 - Total end of shifting cultivation practices.
 - Actions under this goal focus particularly on the 47 poorest districts and are linked to initiatives for rural development, poverty reduction and environmental protection.
- **Goal 4: Sustainable Forest Management and Balance between Exploitation, Utilization, and Protection / Conservation:**
 - Increase forest cover from the current 41.5 percent to 53 percent (nine million hectares to 12 million hectares) of the total land area by 2010.

38. These goals were expected to be attained by implementing the following

13 measures:

- Measure 1: Agriculture and forestry sector perspective
- Measure 2: Survey and allocation of agriculture and forestry production zones
- Measure 3: Seed and breed availability
- Measure 4: Extension and technical services: and human resources development
- Measure 5: Establish village development groups linked to sector development
- Measure 6: Organizing production and establishing economic structures from local/ grassroots levels
- Measure 7: Irrigation development and prevention of droughts and floods
- Measure 8: Increase productivity
- Measure 9: Quality control and disease prevention
- Measure 10: Financial mechanisms
- Measure 11: Achieving economies of scale in production
- Measure 12: Implementation of monitoring and evaluation
- Measure 13: Decentralization

39. Promotion of gender-specific equal opportunities, gender mainstreaming

Women are very active in agriculture and form 60 percent of its labour force. Nevertheless, **gender mainstreaming** is not yet well understood in Lao society. Cultural traditions continue to pose a heavy burden on women, especially on those with a low educational background and a language barrier. There are only a limited number of professional gender experts in the country. The **National Committee for the Advancement of Women (NCAW)** and the **Lao Women's Union (LWU)** have overlapping mandates, leading to a duplication of efforts.

According to the NGPES, promoting gender equality is an important national goal, as reflected in Articles 22 and 24 of the 1991 Constitution, in numerous international commitments (e.g., the Convention on the Elimination of All Forms of Discrimination Against Women) and in the recently established National Commission for the Advancement of Women (NCAW). **Ensuring equal access to basic services and productive resources** is a matter of equity (fundamental fairness), efficiency (poor women are a valuable resource) and effectiveness (women's support is needed to implement national policies on shifting cultivation, opium production, education, health and population). Under the guidance of the new NCAW-Lao, all ministries are expected to develop strategies and action plans to promote gender equality at national, provincial, district and village levels. Line ministries have begun to



mainstream gender concerns by (i) establishing high-level gender working groups, (ii) collecting sex-disaggregated data relevant to poverty reduction and other national goals, (iii) using the data to develop a gender profile or assessment of the sector, (iv) developing a gender strategy and action plan, identifying issues or problems related to women's participation in the sector and actions to redress them, (v) providing gender training and capacity-building to staff, (vi) improving the gender and ethnic balance of staff at all levels, (vii) screening all new policies, programs and projects from a gender perspective and (viii) consulting local women in the design of new projects for poverty reduction, and ensuring that they participate in project activities, including extension services and training.

MAF produced a **National Gender Profile of Agriculture Households** (April 2010). This profile provides data on the gender gap between male and female headed households working in the agricultural sector in terms of access to productive resources, livelihood generation, and livelihood outcomes. The information in this profile can be used for planning and policy making purposes, for addressing gender inequalities and for improving agricultural production for both rural men and women. In April 2010 MAF completed launching **gender promotion networks** (sub-CAW) on central ministerial level as well as provincial and district levels, and also collaborated with **women focal points at village level**. MAF disseminated the comments of CEDAW from CEDAW/C/LAO/Q/7 to relevant divisions to keep them informed and prepared responses to those comments.

2.2 Achievements and limitations of government policies

40. Despite **considerable recent economic growth**, gross domestic product per capita was ranked eighth among the ten ASEAN countries: US\$918 (at current prices, nominal, as of 6 October 2009).¹⁹ Although this is a significant improvement over 2000 (US\$332 per capita GDP),²⁰ Lao PDR remains one of the poorest countries in the Asia and Pacific region. The key structural factors constraining growth and poverty reduction include a small domestic market, a large segment of the rural population living on subsistence agriculture, skill shortages, and remoteness and isolation of many rural communities. **Reliance on external support** for the budget remains high, with externally-funded programs accounting for nearly two-thirds of all public investment. A large public debt and a weak domestic revenue base challenge the government's ability to maintain public infrastructure and to provide stable financing of poverty reduction programs.
41. While the **legal framework exists** to protect common property resources (*e.g., Law on Water and Water Resources, Forestry Law, Land Law, Agriculture Law, Environmental Protection Law, etc., all legislated in the late-1990s*), **deficiencies remain in enforcing rules and regulations**, including inadequate transparency and poor accountability. Policies often are inconsistent and contradictory. Improved governance is challenged by remoteness from Vientiane and close proximity to international borders.
42. The ANR policy environment also affects relations between central government organizations and provincial government units. **Provinces have autonomy without accountability**, which is reflected in ANR trade and investment relationships. One **issue currently being debated is land allocation**: although the Prime Minister's Office (PMO) has imposed a moratorium on granting of land concessions of over 100 ha, some provinces continue to authorize agriculture land concessions.

¹⁹ ASEAN Statistics (2009)

²⁰ United Nations Statistics Division (2009)



43. A best practice example of achievements is the agricultural extension services, labelled the “Lao Extension Approach” (LEA), as profiled in the box below.

The role of the Public sector in delivering services to the population has been in evolution since the last 20 years in Lao PDR. A unified national extension approach, called the LEA, has been officially adopted by the GoL, and a framework for its implementation has been established at national, provincial and district levels. The vision of the approach is “extension for everyone”; all farmers, rich and poor, men and women, all ethnic groups, regardless of literacy levels. It is a decentralised and pluralistic approach which is groups and needs based, and participatory. It has expanded activity to 200 villages in 30 districts, in 17 provinces.

Development partners are adopting the extension approach in their project activities. In addition, their experiences are complementing and improving the breadth and depth of agricultural support services being provided. Service provision is also being partially provided by private investors through agricultural concessions and farming contract arrangements (*embedded services*), which provide technology hardware and training, planting material and channels to the market place.

A recent analysis²¹ conducted on the effectiveness of ODA delivered for the purpose of strengthening Lao agricultural extension capacities indicates that:

- “Farmers living in villages where LEA has been introduced experienced quick and lasting benefits in the form of substantially increased yields and incomes.
- LEA has been developed and exists. LEA is well integrated into the existing power structures on village level. Newly introduced technologies spread well whereby the Village Extension Workers play an important role.
- Compared to ten years ago, the linkages between research and extension improved remarkably, the availability of good extension material is a remarkable change and success, the farmers’ access to agricultural inputs and credits has improved.
- The National Agricultural and Forestry Extension Service (NAFES) is rather a coordination body than a unit that manages extension. This has mainly to do with the decentralised organisation of the services and with the flow of funds for extension. AE in Laos remains dependent on donor projects.

Provision of extension services by the public sector is still limited by low capacities and finances to respond fully to the needs of vulnerable groups.

There is an opportunity for coming rural development programs in the Northern Uplands for strengthening financial, organizational and technical capacities of the public agriculture services, promoting the provision of complementary services through private stakeholders (business, farmer organizations) and ensuring an adequate regulatory framework (introducing norms and fair competition, performing inspections on the quality of inputs, etc..).

44. An example of the limitations of policies remains the issue of Rural Land Rights

The land and forest allocation program (LFAP) was the government’s key program from 1995 to 2007 to formalize land use rights for rural people. Activity on this program has been curtailed while an improved approach to village and village cluster level planning is developed.

²¹ Schmidt, P. (2009)



Individual Land Use Rights: The Land Use Certificates issued under the LFAP were inherently weak in securing tenure rights over family agricultural land parcels because, although farmers usually value them, they are not legally recognised in the land registration process. The land titling programs I and II - while being effective mechanisms in urban and peri-urban areas - have not assisted the rural poor with improving their tenure rights to permanent and non-permanent agricultural land.

Communal Land Use Rights: Land use and management agreements and land use zoning maps for the various categories of village forest and agricultural land prepared under the LFAP have been virtually disregarded in the process of approving concessions and contract farming arrangements. These agreements - while being valuable tools for village management purposes - will not have official recognition in any future registration of communal land areas such as village use forest or village protection forests.

Current government land tenure programs favour the urban and peri-urban areas while the main mechanism for rural areas, participatory land use planning and land allocation, was not able to deliver secured land use rights for rural people. A policy shift since then has rescinded the issue in favour of land titles. NLMA Decree No 564 enables the issue of land titles for village land of three types, individual, collective or community, and state.

45. Progress has been made in the **transition to a market-based economy**. Institutional and regulatory weaknesses remain however, that affect the efficiency of service delivery. Accountability, predictability, and transparency in the management of ANR resources are weak. Underpaid officials and decentralized agencies operating with weak rule of law and lack of accountability contribute to the slow establishment of capacity for effective management of a market economy. Information systems managed by the Ministry of Agriculture and Forestry, including statistics, are only moderately reliable. Important sector trends, such as the evolution of cross-border trade are hardly monitored. The Government has recognized these weaknesses and taken several important steps to increase the efficiency of public services.
46. **Decentralization** has been introduced as a tool to reduce poverty. Provinces are responsible for designing local strategies and setting the development framework in their jurisdiction, while districts have responsibility for planning and budgeting.

Although decentralization creates new opportunities for provinces and districts to develop local solutions to development challenges, it **can also lead to new risks**. In the sense of fiscal decentralization, the change has led to some increases in the transfer of financial and human resources from central to provincial administrative units to strengthen the capacity of local agencies to meet these responsibilities. However, further clarification is needed to define local governments' rights to manage tax revenues that are collected locally. At the same time, local governments need to provide the central Government with information to show that they are fulfilling their obligations.

47. Although the experience of economic reform and transition process has been positive, **implementation has been uneven**. ANR policy reform has stopped from time to time, but it has not been reversed. A large number of laws affecting the ANR sector have been passed by the National Assembly, decrees issued by the Prime Minister and ministers, and orders and instructions issued by government ministries and agencies. But, they are not always clear in intent, nor completely consistent with one another.



Some ANR laws have been passed, but few instructions or implementing regulations have been issued.²² The ANR legal framework has **several legislative inconsistencies and administrative uncertainties**. In some cases, the ambiguity is derived from the current policy-making and institutional situation, which requires greater responsibility and transparency.²³

48. Other factors that determine the impacts of policy reform are related to the legal system. The **unclear division of authority between judiciary and executive authorities** hinders legal enforcement.²⁴ The rule of law is weak, and contracts are often unenforceable.²⁵ Although in principle there is an open investment policy (*the Foreign Investment Law and other laws allow 100% foreign ownership, long leases on land, transfer of property, and protection against expropriation*), in practice the protection available to foreign investors is weak. Potential agribusiness investments fare poorly in this business environment, because they are land based and long term.
49. In addition, ANR sector decision makers tend to be separated from the technical and professional members of the civil service. Human resource capacity and technical support in government ministries and agencies are generally weak. Relatively senior government officials (*particularly at the provincial and district levels*) are often poorly informed about government policies, legislation, and administrative procedures. This means that there is a **fundamental disconnect between the reform process on paper and its implementation in reality**.

Part 3: Major issues, constraints and emerging trends

3.1 Major issues and constraints to be addressed

50. **Agricultural productivity is relatively low, inducing a limited competitiveness of agriculture on regional and global markets for the major basic unprocessed crops.**
51. Agriculture remains **centred on subsistence agriculture** with rice as the main crop, occupying 68 percent of the total cultivated area (of 1.8 million ha, according to satellite imagery). Input use is still very low. Rice yields, although increasing, are low by Asian standards; national average yields are within the range of 1.5 to 3.5 tons per ha.²⁶ Other seasonal and annual crops and permanent crops account for only 9 percent and 8 percent respectively. Only 28 percent of households used chemical fertilizers in 2005, and less than one third of households use any form of mechanization.
52. About half of all households keep buffaloes for draught power, and a third has cattle. Pig raising also is common. About one-third of households currently vaccinate their cattle. **Livestock** trade with Thailand and Viet Nam is significant, but poor quality cattle and livestock health obstruct this trade and expose farmers to the rent-seeking behaviour of middlemen and dishonest officials. **Fish** is the major source of protein, accounting for 40 percent of total protein intake. Fish farming is characterized as extensive low density without feeding, to semi-extensive farming with a small amount of

²² For example, there was a 5-year gap between the passage of the Water Law (watershed and water resources management) in 1996 and the implementing Prime Ministerial Decree in 2001.

²³ In general, laws, decrees, rules, and regulations are not readily made available to the public.

²⁴ The Constitution establishes differentiation of authorities among the executive, legislative, and judicial branches of the government.

²⁵ Governance programs funded by UNDP and SIDA are strengthening institutions such as the Lao Bar Association (established in 2004 with 75 members), but this is a long-term process.

²⁶ This is compared with 2.5-3.5 tons/ha/crop in Thailand, and 3.5 to 4.2 tons/ha/crop in Vietnam.



feeding. Despite support through the operation of fish stations with hatcheries, mortality rates are high. The main constraints are lack of technical capacity and lack of a consistent technology for fish breeding.

53. The **low intensity and low productivity of agriculture is attributed to several factors**, namely:

- Rural household risk aversion livelihood strategies;
- Limited number of input suppliers;²⁷
- The lack of information concerning input use due to the absence of viable extension;
- Inadequate working capital and access to credit and other financial services; and,
- Limited access to markets due to physical barriers created by poor roads, high transport costs²⁸, poor logistics, and a marketing system where a limited number of traders tend to dominate market transactions constraining downstream movement to the next links in the marketing chain.²⁹

In particular, for more remote areas, the above factors accumulate to a distinct locational disadvantage in the transition to a more market- and export-oriented mode of production.

54. The low productivity of agriculture has not prevented commodity markets, contract farming and subsequently agricultural commodity exports to develop strongly during the last decade, but farmer revenues/gains from these exports remain low in comparison to the neighbouring countries. This situation is aggravated by the fact that the price paid for commodities such as feed-maize to the Lao producers remain lower than the price paid to farmers for the same commodity in the sub region according to statistics provided by the FAO.

55. The marketing of agricultural products tends to be limited to the Greater Mekong Subregion (GMS), resulting in significant variation in market prices between northern, central, and southern provinces. Such **regionally unbalanced markets** are created by several key factors, principally:

- Formal and informal regulations that hinder the free movement of goods;
- Prohibitive fees and administrative costs;
- Poor trade logistics and lack of modern trade procedures and facilities;
- An underdeveloped farm to market road network;
- Transportation shortages and high transport costs;
- Low purchasing power in both urban and rural areas;
- Cross-border transport fees and controls imposed by all countries in the GMS;
- Low technical expertise, limited human resource capacity, poor agricultural support and delivery services;
- Limited access to domestic and international markets for inputs and outputs;
- Lack of access to market information, constraints to export, inter-provincial, and external trade; and,
- Small number of local agribusinesses.

²⁷ There are only 57 very small input supply outlets with an average monthly turnover of 500 to 2,000 kg of fertilizer per outlet monthly in the entire Mekong corridor area. Source: GoL-MAF (1999).

²⁸ Transport costs in Laos average 7.5 baht per ton-km on good roads and 13.1 baht/ton-km on poor roads. By comparison, in Thailand, the average transport cost is 3.2 baht/ton-km.

²⁹ Marketing costs and margins for raw produce trade between the farm-gate and retail markets in Vientiane add some 84% to the produce costs of urban consumers. This is compared with an average 23% in Thailand. The difference represents lower Thai transport costs as well as higher Thai market chain efficiency from economies of scale within a more competitive marketing environment with less government regulation and interference in marketing mechanisms.



56. **Livestock**, an integral part of most family farm systems, contribute to almost half the average income of farmers. The livestock sub-sector has a comparative advantage among the neighbour-country export markets with considerable potential to increase production and production of value-added products for export. The principal constraints to the expansion of livestock production are lack of an integrated program of animal health, nutrition, and breeding; and lack of support services in marketing and market information systems. By improving livestock health and mortality, farmers can be assured of better farm household income. Similarly, local **fish farming** has a comparative advantage *vis-à-vis* its neighbours, which can be enhanced by applying appropriate technologies for breeding and rearing of high-value fish.
57. The **irrigated areas on the floodplains of the Mekong** and its tributaries produce most of the country's marketable surplus of rice and other crops. About 25 percent of households in this region grow maize, and about 30 percent grow some form of vegetable crops, either in irrigated fields, kitchen gardens, or along riverbanks. Overall, non-rice crop production and quality remain low even in the most highly productive agricultural areas because of low technical know-how, limited access to domestic and international markets for inputs and outputs, and low domestic demand because of the limited size of markets and scarcity of local agribusiness.
58. Despite the constraints currently faced by the ANR sector, commodities are exported through both **official and unofficial border trade** channels to China, Thailand, and Viet Nam. These include maize, soybean, chilli, tea, cotton, tobacco, sesame, red bean, cabbage, banana, tamarind, watermelon, mulberry bark and other non-timber forest products, buffalo, cattle, and pigs. With the continuous increase in prices of agricultural commodities during the last decade, the demand for Lao produced agricultural products has increased. Crops identified as having potential for export and/or import substitution include field crops such as fodder maize, (and sweet corn), peanut, soybean, sesame, sunflower, sorghum, and safflower. Industrial crops include coffee, sugar cane, cotton, rubber, and sericulture products.
59. The **impacts of climate variability** are taking their toll on local communities as they are experiencing reduced income due to increased mortality of crops from heat and water stress; reduced productivity of livestock due to declining fodder availability and heat stress. The potential loss of crops or crop productivity has significant consequences for the livelihoods of the rural population, including all of the factors that increase the vulnerability experiences of the poorer groups of society, largely the rural poor. Climate change related disasters have strong impacts on agricultural production and threat national development goals. Therefore, resilience to climate change and disaster risk management need to be integral parts of the Agricultural Master Plan.
60. The ANR sector continues to experience **deforestation and degradation of forests and agricultural land** resulting from weak land management, poor governance, and lack of awareness of the environmental services provided by natural resources. The degradation of natural resources is likely to be intensified as rural communities may seek to expand production areas if reduced crop yields are caused by climate change. ANR institutions will need modification modernization to implement **climate change mitigation and adaptation measures**, to make the agriculture sector more resilient; to ensure food security; and, to provide systematic and continuous environmental services to other key income generating sectors of the economy.
61. In recent years, the Government has been successful in fostering food self-sufficiency through increased rice production. However, this has been at a high cost and has depended on significant investment in irrigation infrastructure and delaying



diversification to higher value cropping systems. In upland areas, the Government has focused on land registration and a substantial reduction in shifting cultivation practices, both of which are reported to have had negative impacts on rural livelihoods.

3.2 Emerging agricultural development trends: drivers of change

62. **Intensive farming:** Land-based investments in the ANR sector from neighbouring countries have accelerated significantly, posing new challenges for the Government and rural communities. Land concessions are being promoted as a means to employ FDI to improve the use of un-utilized or under-utilized land in remote areas of the country. Modernization of the sector is well underway at some locations under the influence of the concessionaires. Agricultural mechanization, regional and international agricultural technical experts, modern agro-processing equipment, disciplined managers, and no-nonsense land management and concession administration procedures are all in evidence. These factors contradict, for the most part, the traditional natural agricultural practices and traditional attitudes with which the Lao people have become accustomed. However, the granting of hundreds of thousands of hectares of land as concessions to local and foreign investors is having a **mixed impact on agricultural and rural development**. Foreign private investors now have control of sizable areas (estimated at 1.5 million ha) of the country. Many Lao farmers remain in poverty and are dependent on (i) reduced land area to meet household and community food security needs; (ii) reduced grazing area for the rural household's most important asset: livestock; and, (iii) the reduction of family labour to earn off-farm cash income, (iv) access to markets still limited.
63. **Globalization:** As the economy becomes more formally integrated into global trade relationships (e.g., through AFTA, WTO, GMS, etc.), it will be increasingly impacted by global drivers of change in addition to local and regional factors. Of direct importance to ANR sector planning are several possibilities emerging from the '**new agriculture**'. This term refers to a set of conditions that arise from increasing globalization, and within which international flows of information, goods, financial capital, technology, ideas, and people can be expected to increase significantly. The importance of trade liberalization in accelerating agricultural growth is confirmed by recent econometric simulations showing that a 5 percent higher trade share would be associated with an increase of over 7 percent in crop value and also enhance the value of forestry products by 12 percent.³⁰
64. **Global markets:** International agricultural development is being defined by new consumers, many with different tastes and preferences, advanced technical and institutional innovations, and new roles for the state and civil society. Some of the more prominent trends include:
- Global market shifts: with a rise in demand for high value products, integrated food value chains, multinational agribusiness corporations, the supermarket revolution at the retail level, requirements for suppliers to meet strict quality standards, a proliferation of niche markets for organics and fair trade products, and new markets for animal feed and biofuels in rapidly expanding economies;
 - Technical and institutional innovations (including genetically modified organisms or GMOs) that increase productivity, but also introduce new requirements for competitiveness; and,
 - A modified role of the state: from one that directly provides goods and services to agriculture through parastatal organizations, to one that provides public goods, regulates market activity, compensates for market failure and undesirable social

³⁰ Gaiha, R. & Annim, S. (2010)



outcomes, and manages environmental externalities. The role of the state changes from being a provider of services to being a facilitator and coordinator.

65. The '**new agriculture**' is led by private entrepreneurs in value chains linking producers to consumers that include entrepreneurial smallholders producing high value and often very specialized products. The 'new agriculture' smallholder farmers are linked through local and regional traders and small- and medium-scale (agribusiness) enterprises (SMEs), and agro-processors to global value chains, with access to consumers in high-value markets in Europe, Japan, and North America. These consumers, as well as retailers, processors, and exporters, are demanding **higher levels of food safety**, resulting in the creation of private food standard organizations such as ASEAN-GAP and GLOBAL-GAP,³¹ which assures traceability from 'farm to fork'. In addition, ethical consumerism is increasing, where people purchase healthier and more environmentally- and social-friendly products that meet social responsibility standards (e.g., *Free Trade Certified, organic agriculture labelling, ISO 14000-Environmental Management Systems, ISO 24000-Social Responsibility, and European Ecolabel*). The growing demand by consumers and retailers for quality assurance, traceability, transparency, and accountability is a strong driver of change for global food and agricultural product value chains.
66. **Organic agriculture (OA)** is part of the 'new agriculture' and is emerging as a promising agricultural development strategy particularly in economically lagging areas away from the Mekong corridor, where agro-chemicals have rarely ever been applied and which therefore have a distinct advantage in ease of certification. Supporting the development of certified organic agriculture offers an alternative set of trading standards to mainstream commodity markets that can improve the environmental and social performance of agriculture. Certified organic agriculture is value-added agriculture accessible to resource poor farmers who have extensive local production knowledge and capacity for innovation. Based on recent studies,³² OA has been found to be pro-poor, contributing both directly and indirectly to achievement of the Millennium Development Goals (MDGs).
67. **Fair trade** is part of the "new agriculture", linking as directly as possible consumers interested in high quality products with local communities benefiting directly from this trade. Fair trade share in global agricultural markets has risen constantly (+47 percent from 2006 to 2007) representing more than 2.5 billion USD and involving more than 1.5 million producers worldwide. Fair Trade has already started developing successfully in Lao PDR notably for coffee, local varieties of rice, tea, fruit jams, etc. The impacts on producers is strong, both in terms of revenues as in terms of human capital acquired (farmer organization, trainings received, new techniques adopted, etc.). Upscaling these initiatives will need to be promoted by MAF in collaboration with the Ministry of Commerce and Industry.
68. **Geographical Indicators (GI)** are part of the "new agriculture", including branding. Labelling, certification and marketing for a specific geographical area as product origin. Lao PDR has strong comparative advantages on producing agricultural commodities based on the GI concept as farmers have a long tradition of using local varieties, produced in very specific locations. There are more than 3000 varieties of rice in the country, the majority being indigenous and a high number of tea varieties; including wild teas for which regional demand (especially in China) is very strong. Application of the

³¹ GLOBAL-GAP (global good agricultural practices) was organized by 37 chains of food retailers that guarantee 'farm to fork assurance' to consumers. The system operates in 90 countries, representing 130 certification bodies and harmonizes standards for retailers.

³² ADBI (2006)



GI concept has been already positively pilot tested on coffee and the 'khao kai noy' variety of rice and needs to be further upscaled.

69. **Competitiveness** is seen as an important driver of change in the ANR sector. The competitiveness of food and agricultural products in global markets will be influenced not only by price, but also by biosafety, carbon footprint, and being a non-GMO product. This provides an opportunity to build on the subregion's existing comparative advantage as a global source of natural products including NTFPs and a rich genetic reservoir derived from significant healthy biological diversity. Producers can exploit the rehabilitation and revival of local genetics and promotion of climate-resilient traditional strains of rice and, through climate change resilient agroforestry, expand the production of high-value NTFPs. Chemical free production, using carbon mitigating composting³³ and Integrated Pest Management (IPM), including biological control will be linked to global competitiveness.
70. **Climate change** will be a major driver of change, with critical implications for ANR sector development. Many measures exist for the **mitigation** of greenhouse gas (GHG) emissions from agriculture, including: improved crop and grazing land management (e.g. improved agronomic practices, nutrient use, tillage, and residue management); restoration of degraded forest lands; improved water and rice management; holding land in conservation; agro-forestry; and, improved livestock management. Many opportunities for mitigation are based on current technologies and can be implemented immediately. Soil carbon sequestration (enhanced sinks) is the mechanism responsible for most of the mitigation potential.
71. Further investigations into **linkages between hydropower and climate change** are required. In line with development objectives of the Lao PDR to reduce poverty by 2020, more than 50 large and medium hydropower projects are proposed to be constructed. However, there have been limited investigations on the overall effects of climate change on hydropower in the region and vice versa, and little research on the long term cumulative effects of hydropower on the region.³⁴
72. An ADB study covering **adaptation to climate change** conducted by IFPRI³⁵ found that irrigated rice production in Southeast Asia will decline by 17 percent based on emerging climate change scenarios. The study recommends that it will be necessary to make significant investments in upgrading irrigation efficiency. In addition, technology transfer mechanisms will be needed for the intensive promotion of proven cultivation practices to adapt to climate change, including agricultural diversification, inter-cropping, integrated farming systems, and modified cropping practices. Both smallholder farmers and commercialized intensive agriculture producers will need to implement climate change adaptation and mitigation measures and to be certified as being climate-friendly, while retaining a competitive advantage in the global trading system.³⁶
73. The **preservation of the natural diversity of fauna and flora in Laos** is gradually being accepted as a development goal in its own right, independently (and if necessary even against) the economic interests of using and exploiting natural resources. Since a

³³ Composting provides nutrient-rich soils which result in greater carbon storage of crop biomass. The application of compost reduces the need for GHG producing chemical fertilizers, pesticides, etc. and greatly increases the amount of carbon sequestered in the soil.

³⁴ MRC (2009)

³⁵ Nelson, G. et al. (2009)

³⁶ In 2009, GoL National Environment Committee has elaborated the "National Adaptation Programme of Action to Climate Change" (NAPA). Apart from the IFPRI study, there is a vast body of more recent development literature on climate change; selected titles include: World Bank (2010 a, 2010 a), WFP (2009), UN – REDD (2010), REDD+ Partnership (2010), UNFCCC (2010), Meridian Institute (2009)



number of years, numerous studies have indicated that the **biodiversity is severely threatened** in the country³⁷ by various factors contributing to over-exploitation and destruction of natural habitats, and that effective measures of preservation are urgently in order before this trend becomes irreversible. Major programs have recently been launched, and further donor support is being sought for the effective management of protected areas and National Parks, as well as for awareness campaigns for the wider public.

74. These trends are expected to pose several **challenges, but might also open a number of opportunities**. First is the introduction of the new crops, products, and market opportunities that ‘new agriculture’ represents. Dietary patterns and consumer preferences in developed world markets are shifting away from cereals, roots, tubers, pulses, and other mass-market commodities, towards livestock and other protein products, vegetable oils, fruit, vegetables, NTFPs, and other niche market products. Horticulture and livestock are fast-expanding markets, with new markets also emerging for feed grains for livestock and for biofuels. None of these opportunities is without problems or risks. Although horticulture can typically generate returns significantly greater than cereals production, and is often suitable for women labourers and farmers, grades and standards requirements - including sanitary and phytosanitary (SPS) measures - make it **more difficult for smallholders to participate when acting alone**.
75. As for the opportunities, **new international finance mechanisms**, if effectively tapped, may turn the tremendous potential of the Lao forests as CO₂ absorbing “sinks” into a very significant source of income for the GoL, for the rural population as well as for large scale private investors. In this context, the “**Clean Development Mechanism**” (CDM) is so far of limited value for Laos, since it mainly refers to the reforestation of areas which are barren for more than 20 years, and targets the introduction of energy-efficient technologies. The **REDD (and REDD plus) mechanism** on “Reducing Emissions from Deforestation and Forest Degradation” still suffers from unclear procedures of fund mobilization and distribution. However, the validity of Kyoto protocol (UN 1998) is running out in 2012, and even though the Copenhagen Conference of December 2009 is largely seen as a failure, the international pressure of finding solutions in due time is on. In the meantime, so-called “**REDD Readiness Programs**” are on the way in Laos and elsewhere to prepare for the period in the hopefully not too distant future when the mechanism is in full operation.³⁸
76. GoL-MAF is pro-actively preparing for this future, among others by simulating a number of **emission scenarios**: As an example, if all agricultural expansion, both commercial and smallholder, could be directed onto unstocked forest land instead of clearing degraded forest, emissions would be reduced substantially and the degraded forest would re-grow and sequester CO₂. The model suggests that such a scenario would reduce emission by about 12 million tons annually. – Another scenario where logging could be restricted to sustainably managed production forests would reduce emissions in CO₂ in the short-term by 8 million tons. These two scenarios could **generate REDD payments of up to US100 million annually** (at an estimated price of 5 Dollar per ton).³⁹

³⁷ See ACB (2010), TABI (2010), UNEP-IUCN (2010)

³⁸ See GoL-MAF (2010 c), GTZ (2010); on the ongoing international discussion: REDD+ Partnership (2010), UNFCCC (2010)

³⁹ GoL-MAF (2010 c), with additional potential from forest rehabilitation and reforestation, based on hard data of World Bank, see also Vientiane Times (2010 b)



77. As an additional source of finance, the **private sector Carbon Market**⁴⁰ is so far seen as having the highest potential for capitalizing on the environmental services provided by the Lao forests: On a global scale, this market is characterized by a demonstrated resilience to the recent global economic down-turn, keeping the same level by the end of 2009 as in 2008 (**US\$130 billion annually**). Most of this value is attributed to financial transactions, given the large appeal of emissions trading to European banks. At approximately US\$95 billion, transactions of allowances and derivatives under the European Union Emissions Trading Scheme (EU ETS) continue to dominate the market in 2010, primarily led by a large increase in the volume of allowances traded. Those trades are used by the European players for compliance, arbitrage and profit-making purposes. The secondary market for Certified Emissions Reductions (CERs) remains as the second largest carbon market, although its value decreased compared to 2008, influenced by the large retraction in overall prices. The recent economic crisis has eased the compliance needs from countries and companies, thus reducing the overall demand for primary offsets. The lack of clarity on the post-2012 front (Kyoto) contributed to the retraction of both the supply and the demand of existing regimes. At the same time, new initiatives in developing and developed countries are emerging, such as Program of Activities, exploring market approaches for climate finance solutions.

As for Laos, this private carbon market is not yet developed, mainly due to lacking or **unclear legal framework conditions**, laws and implementation guidelines as well as lacking international certification and close Government monitoring. In addition to the clarification of these issues, successful international experience and pilot programs will be studied and adapted to Lao conditions, such as the Indonesian example of “**Eco-systems Restoration Licenses**”. These long-term licences, sold to private investors, have as objectives the complete restoration of natural forests and habitats over large areas, with the licensee being allowed to extract resources and realize benefits in a sustainable way. Implementation is closely monitored by Government, and independent international external experts. For Laos (and other countries), these arrangements do have the appeal of replacing the old logging concessions (where in the near future no more money can be made) by a win-win situation, in which the private investor gains a long term benefit, Government saves costs for conservation measures and – at the end of the license period – is handed back an intact forest / ecosystem which can again be sustainably used.

⁴⁰ World Bank (2009 a)



Part4: MAF prospective and strategic vision for 2020

4.1 Vision and development goals for 2020

78. The Government's vision for the development of agriculture, forestry, natural resources management and rural development is based on the holistic concept of long-term, sustainable development, including economic, social and ecological dimensions.
79. The long-term development goals for the sector are:
- Gradual introduction and increased application of **modernized lowland market-oriented agricultural production**, adapted to climate change and focused on smallholder farmers
 - **Conservation of upland ecosystems**, ensuring food security and improving the **livelihoods** of rural communities
80. The **strategic direction** given to the Ministry of Agriculture and Forestry for the ANR strategy is to ensure a successful gradual transition from subsistence into commercial smallholder production. This can be achieved by applying innovative technologies and science-based practices for high quality production for value-added agro-processing and domestic, regional, and world markets. In addition, modern farmer organisations will be built up such as cooperatives, commodity associations, and commodity boards in order to ensure economies of scale, and effective regulation for the sector. Smallholder farming systems and the economies of rural communities will become more diversified and be upgraded to increase production for food security and to improve rural living standards. Smallholder agricultural production will be market-oriented, linked by farmer groups and contract farming to local traders, agro-processors, and agribusiness enterprises. The aim is to contribute to reducing rural poverty by creating rural employment opportunities, transferring modern technologies to increase productivity, channelling agricultural production inputs and finance, and facilitating linkages to regional and global value chains.
81. Additional investments in irrigation, rural market access roads, and other high-cost rural infrastructure will be linked to '**SMART AGRICULTURE**', defined as an investment's contribution to poverty reduction and food security, increased production of pre-identified crops with pre-identified markets, and demonstrated commitments from rural communities to organize production units and to utilize and maintain the infrastructure.
82. **Major themes of the ANR sector strategy** include a strong focus on modernizing agricultural production and creating value-added food and agricultural products aimed at reducing rural poverty, maintaining food security, and applying science-based management to the natural resources that **provide the foundation for sustainable agricultural and rural development**. ANR sector development themes will contribute to articulating national economic development objectives in terms more closely aligned with the United Nations Millennium Development Goals and in support of regional programs such as the Greater Mekong Subregion and the ASEAN Economic Community.



4.2 Projected structure of the sector in 2020

83. The structure of the ANR sector projected to 2020 can be broadly grouped by two different but highly inter-dependent systems: **lowland and upland agricultural production**. Both are focused on agricultural production for food security and poverty reduction, while being science-based, market-oriented, and environmentally-friendly. Derived from these broad categories of production modes, **more specific area-based approaches** are to be elaborated that take into account the comparative advantages and potentials within the context of each region. Region-specific strategies, production systems and action plans for support measures would then take the form of modular, integrated packages which aim to maximize the specific locational advantages (or mitigate respective disadvantages).
84. **Lowland agricultural production in the Mekong corridor** will foremost provide sufficient rice and other staple crops (i.e. vegetables, fodder maize, pulses and oil crops) to maintain national food security. Lowland smallholder farmers also will raise sufficient livestock and fish to supply low-cost sources of protein to domestic markets. Lowland agricultural production will be responsible for providing both sufficient quantities to guarantee that the nutritional needs of the population are met.
85. Lowland farmers are expected to produce a surplus of rice and other commodities for sale to domestic and regional markets. Smallholder producers will be playing a greater role in processing, labelling, branding, and commercializing their products, notably through ad hoc farmer organizations. Linkages to locally-based agro-processors and agribusiness enterprises (including agricultural land concessions) through formal and informal contract farming arrangements will also be enhanced. Agribusiness enterprises will be mostly local SMEs with community-based value-added processing capacity and downstream linkages to multinational companies that have access to larger regional and global markets. Lowland production will be largely capital intensive, with the application of science-based technologies to improve and maintain the quality of soils and guide the use of agricultural chemicals; use appropriate-technology agricultural equipment for mechanized production; and, apply climate change mitigation and adaptation measures. **Commercial crop production in the Mekong lowlands will concentrate on producing specialized high-value crops** under contract, for local value-added processing and niche markets, including indigenous varieties of rice for local consumption, certified organic agriculture products for export, and industrial food crops for processing.
86. The lowland / flatland areas also will be the focus of **irrigated agricultural production** to produce supplementary dry season rice to ensure food security and high value crops for value-added processing and export to regional and global markets. Entrepreneurial smallholder farmer organizations will be practicing irrigated agriculture in partnerships with agribusiness enterprises; in some locations as mega-projects. Irrigated agriculture projects will be organized based on Irrigated Agriculture Development Plans (IADPs) prepared by local governments in consultation with communities, and incorporated into district and provincial socioeconomic development plans. The financing of irrigation development and rehabilitation will be in the form of partnerships between communities and interested private investors, with the Government playing a facilitating and coordinating role.
87. **Upland and highland agricultural production** in the Northern and Southern regions will first and foremost aim to meet local food security needs. Livestock producers also will raise cattle and buffalo for domestic consumption and export, as well as small livestock and fish to meet local protein needs. Upland agricultural production will be more diversified to provide a greater range of food groups to meet the nutritional needs of local populations.



88. Upland farmers will supply fruit, vegetables, meat, and poultry to **expanding urban centres and tourist populations** in heritage cities (Luang Prabang and Xieng Khouang in the North; Paksé and Champasak in the South) and ecotourism centres (Vang Vieng, Luang Namtha, Nong Khieo in the North; Pakxong, Mouang Khong in the South) and several other tourism and transit towns (e.g., Savannakhet, Thakhek, Oudomxay) around the country. Exports to neighbouring countries of large livestock produced in the uplands will expand, complying with standard sanitary regulations.
89. Small-scale irrigation in upland and highland areas will be improved with the **participation of local communities**. The Government will have constructed small weirs in the foot hills, to replace the temporary ones, with the Government acting as a service provider. This is justified because the market fails to arrange private sector provision of goods and/or services that the government regards as essential. Small-scale irrigation projects will capitalize on lessons learned from previous projects. They will support community-based organizations for equitable water distribution among smallholder farmer groups during the wet season to ensure local food security and the availability of water for irrigating dry season crops to supplement food supplies and for the production of high-value crops for domestic and regional markets.

4.3 Contributions of the sector to overall national development

90. In the next 10 years, the Agriculture and Forestry Sector will continue to play a substantial (although gradually declining) role in achieving the expected **overall economic growth**. On plausible assumptions of a slower decline in public investment and slightly higher FDI and trade, agricultural value added is likely to grow at 4.20 percent per annum. For the observed agricultural growth rate of 4.16 percent to be maintained, public investment has to be larger by 3 percent. If fiscal constraints are less binding, a 20 percent higher public investment would lead to a growth rate of just under 5 percent. While the short-run elasticity of GDP to agricultural value added is currently evaluated at about 0.67, the long-run elasticity is 1.59. This implies that a 1 percent growth in agricultural value added will result in 1.59 percent GDP growth.⁴¹
91. Agriculture will remain a key driver of the **poverty reduction** process, notably by incorporating progressively a larger proportion of the smallholders into commercial agriculture. According to recent analyses, the poverty-agricultural value added elasticities are consistently much larger than poverty-GDP elasticities, confirming the key role of agricultural growth in reducing poverty. The required rates of GDP and agricultural growth consistent with achieving **MDG 1** are close to trend rates. So Lao PDR is on track to achieving this goal. Finally, the sector will contribute to maintain natural capital by allocating land appropriately, protecting natural forests and expanding forest cover, protect river basin and soils.
92. Domestic, regional, and global markets are playing an increasingly important role as a **'pull factor'** in the agricultural, natural resources and rural development process, despite numerous physical and institutional constraints. The market is demonstrating the ability to overcome these obstacles and is connecting with the agricultural sector. Similar to farmers worldwide, many smallholder Lao farmers are responding to market pull with enthusiasm. Farmers, traders, and markets are increasingly connected because of the deregulation of internal, cross-border, and global trade, improved transport and communications infrastructure linking producers and markets, and the trade liberalization policies of the Government that provide easier terms and conditions for trade (an **enabling environment**). Given the country's strategic location, relatively

⁴¹ Gaiha, R. ,& Annim, S. (2010)



abundant natural resources, political-economic stability, and agro-ecological diversity, the ANR sector will continue to provide food security and livelihoods to rural populations, greater foreign exchange earnings from expanding exports of food and agricultural products, and environmental services to the tourism, hydropower, and social sectors.

93. Upland farmers on the **Bolovens Plateaux** will be producing Pakxong coffee for export using a Lao brand with a geographic indicator (GI), under contract to the *Association des Groupements de Producteurs de Café du Plateau des Bolovens* (AGPC) (Lao Coffee Producers Association) and the Coffee Exporters Association. They also will produce a variety of temperate climate vegetables (both organic and using IPM) under contract for domestic markets and for export to neighbouring country markets. Vegetable crops will be produced on a rotational basis, using cropping calendars, to prevent over- and under-supply, thereby minimizing price volatility throughout the GMS. (See *AGPC and Pakxong Central Market case studies in Annex 2* of the Agricultural Master Plan)
94. Upland and highland farmers will have adopted **ecosystem-friendly agroforestry farming systems** and stopped deforestation and upland degradation. NTFPs will be produced by upland farmers for local consumption to supplement food security, and for sale in domestic and regional markets. Local government and MAF line agencies will facilitate and coordinate benefit-sharing as payment for environmental services provided by farmers as eco-stewards. Adaptation measures will be determined by (sub-basin) agro-ecological analysis that takes into consideration area-based socioeconomic conditions and the environmental services being provided by the natural resources in each location. (See *SUFORD and German Agro Action case studies in Annex 2* of the Agricultural Master Plan).
95. In various forms of **co-management**, rural upland communities and the Government will be collaborating to manage natural resources that provide valuable environmental services to the Nation. Fiscal policy measures will be formulated that reward farmers as good eco-stewards to preserve watersheds, protect biodiversity, domesticate NTFPs, and conserve forests. Fiscal policy measures will include the granting of land use certificates to farmers providing satisfactory environmental services through agroforestry, biodiversity conservation and domesticated NTFPs, and conservation agriculture. Forests in watersheds will be preserved to ensure their integrity; for sustained hydropower production. Biodiversity will be conserved for eco-tourism. NTFPs will be available for consumption to supplement food security and for sale as cash crops to increase household income. Forests will be conserved to sequester carbon and allow participation in income-generating international carbon pools (*e.g., REDD and LULUCF*). Each of these environmental services provided by the ANR sector generates income to support the economic development of the Lao Nation.
96. **Biofuel crops vs. food crops production:** Agricultural development policies will support an appropriate balance in meeting the countries' energy and food security needs. In cases of potential conflict between the areas to be used for biofuel versus the areas needed for food crops, **ensuring food security for the local population will have an undeniable prerogative**. To avoid such conflicts, a careful **zoning and land use planning** with the participation of the local population would be a compulsory preparatory step for any biofuel production. However, case studies in Cambodia, Laos, and Vietnam suggest that in the majority of cases, land used to crop biofuel does not compete with food crop production. Crops other than *Jatropha*, like sweet sorghum and cassava, which are more efficient and can be fully or partly mechanized, will be cultivated for ethanol.



Part 5: Measures and modalities for implementing the Agricultural Development Strategy

5.1 Development direction

97. Agricultural policy makers fully recognize the importance of maintaining the **integrity of natural resources as the basic building block for rural development**, the agriculture sector, and the livelihood of smallholder farmers; foundation of expanded trade and increased foreign exchange earnings from exports of food and agricultural products; source of biological diversity and forests to support expansion of nature-based tourism and exports of hydropower; and, essence of the Lao Nation. They further recognize that life sustaining ecological services, including clean water, pollutant elimination in wet zones, pest control, pollination, and erosion control can only take place when biological diversity is intact. Environmental services play an important role in defining culture; thus preserving agricultural biodiversity is **directly linked with preserving the Lao national identity and cultural diversity**.
98. The Agricultural Development Strategy for the Ministry of Agriculture and Forestry, 2011-2020 (ADS) is based on the foundation established by the 'Four Goals and Thirteen Measures' (4/13) implemented by MAF since 2007, in support of the '11 Programs and 111 Projects of the Elaborated Plan' adopted by the 8th Party Congress in 2006. While retaining the correct thinking and spirit of the 4/13, the ADS adopts a new perspective to respond to changing national needs and the necessity to modernize in **response to an increasingly challenging regional and global situation**. The ADS also addresses agriculture and natural resources issues as they impact on rural development, making an effort to **balance** the stressful forces of globalization and modernization, with **traditional Lao society and natural livelihood systems**. The legal framework for this intersecting process is covered by two decrees of the Prime Minister's Office, namely Decree 09/2004 PMO and Decree 13/2008 PMO (decree on village development clusters or '*kum baan patana*').
99. Several important social and economic factors have emerged during the first decade of the 21st Century that require amendment of policy implementation measures. The adjustments will ensure a **greater social orientation and holistic development** of the rural and agriculture sectors while modernizing key agriculture institutions, conserving natural resources, retaining the sector's natural competitiveness, and building on its comparative advantage.

5.2 Overall goals

100. The ADS responds to these challenges by proposing measures that have a **modernized ANR sector** as an important outcome. The **improvement of livelihood** through agriculture and livestock activities incorporates the high priority of ensuring food security, demonstrating MAF's role in the implementation of the National Nutrition Strategy and Action Plan. The promotion of commodity production as cash crops for local and regional markets recognizes the need for *partnering with producers and agricultural enterprises* to mobilize private direct investment in the ANR sector; improve the quality of food and agricultural products; and gain access to global value chains. Agricultural policies and measures to *stabilize shifting cultivation* will have a greater social and environmental orientation, and strengthen the ANR sector's resilience to climate change. Lastly, the ADS recognizes that sustainable management of forest resources that provide valuable environmental services to the Nation and global ecosystems which can only be achieved through a combination of further *strengthening of institutional capacity and human resources development and*



strict enforcement of existing forestry laws and regulations. The ADS will channel the human and financial resources and policy instruments available to the GoL to facilitate entrepreneurial development among smallholder farmers, to better equip them to engage the forces of globalization and modernization. The ADS will guide the line agencies of MAF to ensure that the rules of competition are understood and applied equally; the outcome being that a level playing field is provided for sustainable agricultural and agribusiness development.

101. **The Vientiane Declaration:** The ADS will be implemented based on the Vientiane Declaration for Aid Effectiveness signed on 29 November 2006, during the Ninth Round-Table Meeting. The Declaration contains five pillars, namely: ownership, alignment, harmonization, and simplification, managing for results, and mutual accountability. By adhering to these principles, the GoL and the Development Partners aim to support the achievement of the Millennium Development Goals (MDGs) by 2015. The Vientiane Declaration provides the framework for cooperation and coordination that 24 Development Partners have signed.

5.3 Goals, development impacts and implementation programs

102. An overview of goals, intended development impacts and the contributions by the 8 implementation programs is presented as a **Matrix in Annex 1**. For the 5 year period until 2015, a detailed elaboration of the implementation programs and their key measures is presented in the **Agriculture Master Plan**, accompanied by the respective Investment Plan.

103. **Goal 1:**
The improvement of livelihood (through agriculture and livestock activities) has food security as its first priority.

Agricultural diversification among smallholder farmers will be promoted in order to enable improvements the nutritional well-being of the Lao people (*an element of food security*), strengthen the resilience of agriculture to climate change, and respond to increasing demand for Lao food and agricultural products in local and regional markets. Food security and livelihood improvement is linked to ensuring good management of agricultural land. This can best be achieved by focusing on 'production basics' including good soils management, use of improved seed, application of suitable fertilizer packages, and integrated pest management (IPM). Farmers practicing irrigated agriculture will be given more training in on-farm and in-field water use and community management of irrigation structures, to intensify production and increase yields. Further, local breeds of livestock will be cross-bred to increase productivity while retaining important disease resistance traits to ensure resilience to climate change and resistance to indigenous diseases. Basic veterinary services and vaccination programs will be strengthened to support animal disease control. Agricultural research, extension, and development, as well as livestock improvement measures will aim to increase productivity, reduce costs of production, and enhance quality to improve market competitiveness.

- **Development impact: Improved food security**

❖ **Contributions by Implementation Programs:**

- Program 1: Food production
- Program 6: Other agriculture and forestry infrastructure
- Program 7: Agriculture and forestry research and extension
- Program 8: Human resource development

104. **Goal 2:**

Increased and modernized production of agricultural commodities will lead to “pro-poor and green value chains”, targeting domestic, regional, and global markets, based on organizations of small holder farmers and partnering investments with the private sector.

To achieve the Government's policy objectives, the ADS encourages and strengthens partnerships with producers and rural communities, private enterprises, civil society groups, and development partners. Government funds will be leveraged with agribusiness and private enterprises, communities, and development partners, to promote the value-added processing of products at the local level. The ADS will build more efficient cross-border, regional and global value chains by providing opportunities for a sustained dialogue between the Government and agribusiness and producer associations. MAF will be a partner with other Government agencies to coordinate and facilitate upgrading of market infrastructure, undertake trade modernization, and improve logistics for cross-border and regional trade. To support small and medium enterprises owned by women to be able to be expanded and access regional and international markets. MAF shall, in collaboration with the MOE, the MOIH and relevant agencies, create training curricula those related to business running and production such as marketing knowledge, product development, investment, fund administration and so on; organize training for target groups. (NCAW strategy 2006-2010 page 10 target vi).

105. The human and capital resources of MAF's technical and policy research centres, development and extension agencies, and those of development partners, will be mobilized to **improve the quality and competitiveness of Lao agriculture and forestry products**. Promotion, dissemination, and adoption of **Good Agriculture Practices (GAP)** at the field level will be a high priority linked to expansion of agricultural markets beyond neighbouring countries. Regional cooperation is necessary to harmonize sanitary and phytosanitary (SPS) measures. Public-private partnerships will be developed to accelerate certification of individual Lao professionals and competent Lao organizations to provide quality certification of Lao food and agricultural products for export.

➤ Development impact:

Increased production and value added of commodities

❖ **Contributions by Implementation Programs:**

- Program 2: Commodity production and farmer organizations
- Program 5: Irrigated agriculture
- Program 7: Agriculture and forestry research and extension
- Program 8: Human resource development

106. **Goal 3:**

Sustainable production patterns, including the stabilization of shifting cultivation and climate change adaptation measures, are adapted to the specific socio-economic and agro-ecological conditions in each region.

MAF will work with key stakeholders in the ANR sector to develop fiscal policy measures that provide incentives for smallholder upland farmers to adopt carbon-neutral farming practices and further reduce deforestation and upland degradation. Capitalizing on lessons learned from other successful projects (e.g. *SUFORD*). The



fiscal policy measures will emphasize benefit sharing and payment for environmental services provided as eco-stewards. Adaptation measures will be determined by (sub-basin) agro-ecological analysis that takes into consideration area-based socio-economic conditions and the environmental services being provided by the natural resources in each location.

➤ Development impact:

Widespread application of ecologically sustainable production patterns adapted to the conditions of regions

❖ **Contributions by Implementation Programs:**

- Program 3: Sustainable production patterns, land allocation and rural development
- Program 7: Agriculture and forestry research and extension
- Program 8: Human resource development

107. Goal 4:

Sustainable forest management will preserve biodiversity and will lead to significant quantitative and qualitative improvements of the national forest cover, providing valuable environmental services and fair benefits to rural communities as well as public and private forest and processing enterprises.

In the Forestry sector, MAF will focus on increased awareness of the importance of forests in eco-system management, improved effectiveness of law enforcement, reduced illegal logging, increased reforestation, innovate schemes for watershed management. Main targets on this way include improving existing forest areas (Forest Coverage Area) up to 65% of the total land area through the implementation of collaborative management plans for biodiversity and watershed services for conservation and protection forests and sustainable forest management in production areas; increasing forest quality through forest rehabilitation in an area up to 3.9 ha; restoration of forest area through planting trees in unstocked forests up to 200,000 ha by 2015 (and to 500,000 by 2020), and developing legislation for valuing of ecosystem services (e.g. biodiversity, water) in all forest categories.

➤ Development impact:

Forests contribute significantly to the welfare of present and future generations of the Lao people.⁴²

❖ **Contributions by Implementation Programs:**

- Program 4: Forestry development
- Program 7: Agriculture and forestry research and extension
- Program 8: Human resource development

5.4 Main thrusts of the strategy

5.4.1: Increasing productivity

108. Agricultural productivity will be increased in order for farmers to get better revenues from the trade of their produced commodities and to achieve food security. Increasing agricultural productivity is one of the main thrust of the ADS and a challenge that needs **to be taken on in a holistic manner, going beyond the technical dimension of raising yields.**

⁴² Compare Wode, B, Bao Huy (2009)



109. **Different dimensions of increasing productivity** will be examined by MAF during the coming 10 years: Among others, the release and adoption of new improved varieties and techniques (mechanization, conservation agriculture, SRI, etc.) need to be accelerated.
110. The **extension role of NAFES** needs to evolve in order to:
- Facilitate the emergence of strong farmer organizations, as receiver of extension messages but also as autonomous organizations able to fulfil a service provision role to their members or to the wider community, connect with markets, input providers, the private sector, etc.
 - Coordinate with the rural education system and ensure that farmers are receiving a basic level of literacy in order to increase their capacity to absorb the extension packages transferred.
 - Partnering with the Private sector: regional stakeholders interested in purchasing Lao agricultural products (feed maize, etc..) are often looking at providing to farmers adequate inputs (seeds, chemicals, ..) allowing them to maximize their productivity. The public extension system will look at ways to partners with these service providers in order to make new techniques dissemination as rapid and inclusive (poor farmer, remote areas) as possible.
 - Taking advantage of current FDI influx. Facilitating spreading of new techniques from modern medium scale farms to smallholder producers. Over the past ten years, new agricultural practices and techniques have emerged, driven by private sector investments into land based agricultural concessions. Investments realized often include agro-processing facilities and plantations using modern techniques. This situation is representing a potential in terms of adoption of new techniques. The role of the extension agents will be to facilitate the articulation of these modern land investments with communities. The link between these investments and communities will be based on contract farming arrangements.

5.4.2 Addressing risks and vulnerabilities

111. While poverty rates are declining, a substantial proportion of **farmers are in a vulnerable situation**. The effects of climate change (droughts, flooding, etc.) are likely to increase the vulnerability of farmers. Unavoidably, the intended increased integration into national, regional and global markets will lead to increased exposure to fluctuating world market prices. Most directly, farmers are effected by:
- Lack of secured access to or ownership on their land;
 - Lack of capital / high indebtedness rates;
 - Strong fluctuations in the prices of agricultural commodities;
 - Unsecured access to markets: regional trade agreements not yet completed; and,
 - Natural hazards: flooding, storms, pests, livestock diseases
112. The Ministry of Agriculture and Forestry will address these risks by a **systemic approach to Risk Management**.⁴³ Notably for commercial small holder farmers and their organizations, MAF will launch a comprehensive Program on Risk Management with the objective of buffering increased risks of fluctuating world market prices, market failures, increasing effects of climate change and natural calamities. The program will include region-specific risk assessments, the analysis of asymmetries and transaction

⁴³ Conceptual Overview in OECD (2009), Kostov, P., Lingard, J. (2003); for case studies see: Hoang, N. (2010, Vietnam), Grisley W. & Kellog E. (1987, Thailand), Greiner, R. et.al. (2008, Australia)



costs and specify the scope for Government intervention. Based on this, region-specific training and insurance programs will be implemented.

113. In a more conventional way, MAF will continue to develop **safety nets for the poorest farmers**. Land rights for the poorest farmers will be ensured through Participatory Land Use Planning exercise and subsequently dealt with by the National Land Management Authority (NLMA). Food insecurity will be directly addressed by the Ministry of Agriculture and Forestry following the National Nutrition Policy endorsed in 2009 and in collaboration with the other Ministry, including the Ministry of Health. The effects of climate change will be tackled by the MAF on the basis of the National Action Plan for climate Change Adaptation (NAPA) which includes a series of preventive and mitigation measures for the sector.
114. The Ministry of Agriculture and Forestry will develop a series of measures to keep agriculture as resilient as possible while successfully managing the transition to a commercial orientation. Farmers will be encouraged to **maintain diversified farming systems**, integrating closely livestock rearing with crop production, while taking up progressively new technologies and entering progressively into value chains.

5.4.3 Connecting successfully to markets

115. While the integration of the ANR sector into the regional and global economy is increasingly obvious and effective, the role of the Ministry of Agriculture and Forestry is to make sure that this **integration is contributing sustainably to the overall goals of the Nation**, and particularly economic growth and poverty reduction. For this propose , the Ministry of Agriculture and Forestry will focus its attention on two main aspects:
116. **Improving the trade and business environment**: Accelerating the development of the appropriate legal frameworks (law on intellectual property, law on pesticides, etc.), negotiation of commercial agreements at regional (AFTA) and global levels (WTO) based on Lao PDR comparative advantages, accelerating the application of the WTO Sanitary and Phytosanitary (SPS) agreement. MAF will in particular ensure that an effective synergy will exist between official development assistance (ODA) and public investment program (PIP) based investments in this direction and will as well promote the involvement of FDI into the transfer of the technologies and knowledge necessary to comply with international standards for exported agricultural and forestry commodities, using notably regional expertise (such as Singapore for SPS).
117. **Improving the readiness of farmers to connect with markets**: Smallholder farmers are poorly equipped to deal with market opportunities, notably because they lack knowledge, information, capital, and bargaining power vis-à-vis the regional and international large scale stakeholders outsourcing agricultural products. The Ministry of Agriculture and Forestry will have a twofold approach to improve connectivity of smallholders with markets:
- Assisting farmer in building autonomous and sustainable **business oriented farmer organizations**, such as business oriented farmer groups and later on cooperative groups or full cooperatives. These organizations will help farmer connecting with markets, organizing the trading of their commodities, processing, quality control, establishment of contracts with the private sector, etc. MAF will ensure that these organizations receive adequate organizational and financial support, notably by preferential access to loans from the Agriculture Promotion Bank.
 - Promoting the establishment of “**commodity associations or commodity boards**” - following the experience pilot tested in the coffee sector – for the main



exported agriculture commodities. “Vertical coordination” of the value chains will be improved and specific strategies elaborated and agreed by all stakeholders – public and private – in order to raise competitiveness, quality, value and image of Lao products on international markets. The Ministry of Agriculture and Forestry will ensure that the free market rules are properly applied by all stakeholders, removing barriers, monopolies, etc., and that smallholders are receiving a fair share of the wealth created by commercial agriculture by notably promoting fair trade, trading and processing by farmers themselves, etc.

5.4.4 Ensuring economic, social and environmental sustainability

118. The current shift from smallholder subsistence agriculture to a greater commercial orientation is posing new challenges in terms of environmental and eventually economic sustainability of the production systems. For example, the very rapid expansion of feed maize mono-cropping, accompanied by a pioneer front, rapid conversion of land, mechanization (on slopes), use of fertilizer and chemical is leading to pest infestation problems, health hazards at producers level, weed resistance to herbicides, serious and rapid land degradation and is likely to bring only short term benefits if more sustainable practices are not quickly adopted by farmers and promoted by all stakeholders of the value chain.
119. In general, the Ministry of Agriculture and Forestry will promote “**Conservation Agriculture**” when the environmental sustainability of the farmer practices is questionable and encourage the private sector to participate directly to this dynamic.
120. Forests are an important part of the national heritage and Natural Capital and ensuring a sustainable management of forest resources, both timber based and non timber forest products, is critical for export revenues as well as for the communities and families extracting from forested areas a substantial part of their food and incomes. **Communities will be more closely involved in sustainable forest management**, following the Forestry Strategy 2020 elaborated by the Ministry of Agriculture and Forestry. The Forestry Development Fund, pilot tested in the framework of ODA funded projects need to be further institutionalized and operationalized and decentralization in the use of financial resources from the forest sector (quotas) will need to come in effect.
121. The recent **rapid expansion of the land-based agricultural concession system will be carefully considered** by the Ministry of Agriculture and Forestry in order to make sure that the decisions taken are compatible with the local setting and the needs and rights of the local communities. The Ministry of Agriculture and Forestry is to play a greater role in checking the technical parameters of the concessions based investments proposed. Notably, the Ministry of Agriculture and Forestry will strengthen its capacity to check the amount of land effectively available for concession granting on the basis of the Participatory Land Use Planning exercise done at community level. In addition, the Ministry of Agriculture and Forestry will play a greater role in ensuring that the technologies, seeds, breeds, species, imported by investors are compatible with the local conditions and not posing threats to the local environment and communities. Finally, the Ministry of Agriculture and Forestry will analyze some of the social implications of the land based investment and make sure that the labour needs can be met in an appropriate manner using local available workforce. It is notably envisioned by the Ministry of Agriculture and Forestry that the company based rubber plantation area should not exceed 300 000 ha nationwide to stay compatible with available labour on the territory.



5.4.5 Main principles to be followed when implementing the strategy

122. The Agriculture and Forestry sector must be developed on the basis of sector needs, opportunities and **Lao PDR comparative advantages**.

Lao PDR is blessed with an **important natural capital**, including forest, land, hydropower potential, potentially high added value natural products (Mekong Algae, resins.), biodiversity, as well as a **human capital accumulated (indigenous knowledge)** by farmers over generations in the form of domesticated species (3000 varieties of rice, more than 20 varieties of “wild tea”, etc.), specific and sometimes unique techniques and production systems (high altitude organic robusta production). An important proportion of farmers is still using chemical free production system and could thus easily be integrated into organic production, if they are assisted properly. Lao PDR is geographically integrated into the ASEAN, has porous borders with and is envired by highly competitive agricultural countries such as Vietnam (Coffee, rice, aquaculture products) and Thailand (fruits, vegetables, rice, silk, processed agricultural products) already very well integrated and positioned in international agricultural commodity markets. Competing with these countries on similar productions and markets is unlikely to bring tangible results. Additionally, even if the demand is strong, being a source of raw unprocessed agricultural products for the regional markets cannot be considered as a long term effective agricultural strategy as little added value is retained in country.

The nation's comparative advantages are actually lying in its availability of land and its potential to produce high added value products for niche markets: organic products, indigenous species (tea and wild tea, etc) geographical indications products and fair trade products (see above).

123. Strong state capacity should be maintained but **attention of the MAF should refocus on key roles**.

The Ministry of Agriculture will pursue the current transition from a service oriented Ministry to a regulatory body for the sector. Gradual withdrawal of the Ministry of Agriculture and Forestry from the direct provision of agricultural services will depend on the capacity of the private sector, including farmer organizations, to take over this role. It is envisaged that during the next decade, the private sector and the farmer organizations will play a greater role in providing agricultural services, such as seeds (including producing and releasing certified new varieties), to a certain extend extension, connectivity with the market opportunities, agro-processing, storage. In parallel, the role of the Ministry as a regulatory body for the sector, defining norms, defining and enforcing sector legal frameworks, correcting market failures will be increasing, and will only be successful if accompanied by an important capacity building effort. It is envisaged by the Ministry that regional initiatives such as ASEAN, and support from the Development Partners will be instrumental in achieving this objective.

124. Emphasis will be put on women and rural poor as primary beneficiaries. **Rural poor** are often excluded from the access to basic agricultural services, while the private sector is more and more active in servicing better-off smallholders. The Ministry of Agriculture and Forestry will play a pro-active role in orienting public agricultural services into the poorest areas and towards the poorest segment of the population, notably by allocating more budget funds to the poorest districts and village cluster (kum baan), reversing the current situation. As well, during participatory Land Use Planning, officials from the Ministry of Agriculture and Forestry must ensure that land rights are secured for the poorest families, decrease the number of landless and pay particular attention to the situation of women.



125. **Good public administration and accountability must be ensured**, and policy directions followed from central to local levels.

The Ministry of Agriculture and Forestry will ensure that **public administration reforms are effectively and timely implemented at central and decentralized levels** of the Ministry. A particular effort will be produced by the Ministry to ensure that sector related legal texts (Laws, Decrees) and rules and regulation are well disseminated down to the grass-root level through the Ministry's communication channels and accompanied by an adequate capacity building effort. As a priority, attention will be paid to disseminating the recent Decrees on the Establishment of Cooperatives and Associations as they represent a strong legal basis for the future development of farmer organizations.

Above all, a priority is improvement in **institutional quality**, as institutional quality is crucial to policy reforms and growth. The Ministry of Agriculture and Forestry will notably accelerate improvements in the quality of its ODA management systems at all levels, following the principles of the Vientiane Declaration on aid effectiveness. Careful attention must also be given to greater transparency in public decision-making for the sector – in particular in land allocation processes - and better coordination between policies at different levels.

126. **Decentralisation will be successfully pursued and participation enhanced.** The Ministry of Agriculture and Forestry will pro-actively pursue the current decentralization process in particular by completing the **establishment of extension services at the village cluster (kum baan) level**, by decentralizing staff, allocating budget, and activities from the District level down to as close as possible to villagers. Establishment of kum baan centres will represent a major investment for the Ministry in the coming 5 years which will be allocated in priority to the poorest districts

127. **Participation from smallholders** into the definition of the sector priorities will be enhanced at all levels, notably by encouraging farmers to form groups, cooperatives and associations. At village level, these organizations will be encouraged to participate in the definition of agricultural development priorities. At higher level, farmer organizations will have the possibility to discuss sector priorities within specialized commodity associations or boards with the other stakeholders, both private and public.

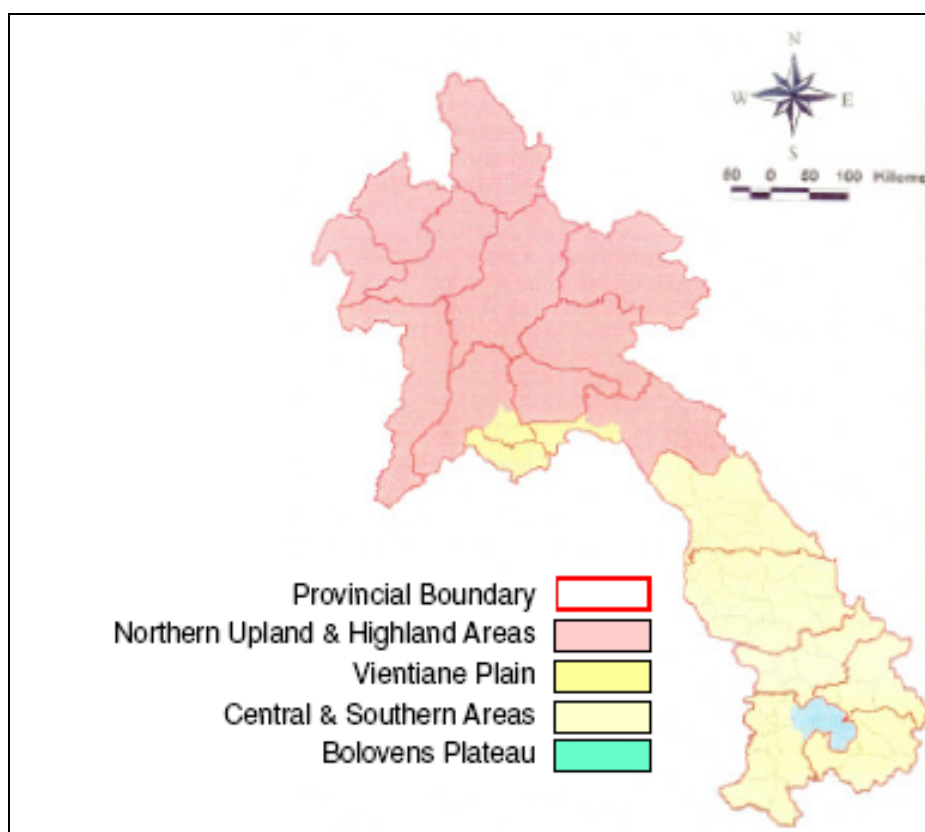
5.4.6 Area based approach to Agriculture development strategy implementation

128. The **“area-based” dimension** of the Agriculture Development Strategy will allow local players to define an agriculture development strategy based on the area's particular circumstances, assets (strengths), constraints (weaknesses), needs and opportunities. It relies on a holistic and concerted approach to the area, and on a bid to integrate all locally available, indigenous resources.⁴⁴
129. With reference to the 6 main agro-ecological zones, the Agriculture Development Strategy will apply, taking into account agro-ecological zone specificities, needs and opportunities. The intensity of the intervention and levels of priorities for each goal, measure and sub sector development will be **adapted to the local conditions and needs**. Levels of investments channelled to the local levels will continue to be determined using the conventional planning processes bi-annual and 5 year, but also new forms of **bottom-up planning processes** (e.g. participatory village and *Kum Ban* development planning) by which the local population will express their specific needs.

⁴⁴ For conceptual clarification, see Kuhnen, F. (1992), GDPRD (2006), Wiemer, H.-J. (2010); on the practical application in Laos, see JICA (2001), Chapter 5.5 “Area Based Agricultural and Rural Development”



Area Based Agricultural and Rural Development



Source: JICA (2001), p. 5-22

130. The provincial, district and *Kum Ban* levels are determinant with regard to the available means (human resources, finances), and the implementation of the strategies developed to reach the overall development objectives and targets defined by the central level. While levels of capacity at provincial level, namely for planning and implementation methods, are still limited, the decentralized structures of MAF will play a key role, in close coordination with the provincial authorities in mainstreaming the current ADS into public interventions down to the local levels, taking into account local specificities, needs and priorities.
131. **Dialogue**, particularly at provincial levels, will be systematically engaged at inter-sectoral level with other key line agencies involved into the rural development and poverty alleviation efforts, under the leadership of provincial governors, in order to ensure proper coordinated planning of interventions, maximizing synergies.
132. In its area-based dimension, the Agriculture Development Strategy invites public and private players, organized into a **local partnership**, to devise a development programme for their area jointly with local communities and to negotiate it with the public authorities responsible for the area. The organization of a representative local partnership of “prime movers”, public authorities and collective forms of organization is crucial to its success.



Geographic Area Development Approach in Irrigation Agriculture

Example: The upland in the Northern and Central-South Eastern Regions

The different geographic areas need different development approaches for irrigated agriculture development. The uplands are located in the Northern Region and the South Eastern Region along the border with Vietnam. The Northern Region is generally defined as the seven provinces of Phongsaly, Luangnamtha, Bokeo, Oudomxay, Luangprabang and Sayabury. The Central-Southern Eastern Region uplands are located in Vientiane, Bolikhamxay, Savannakhet, Khammouane, Saravane, Sekong and Attapeu provinces.

For the uplands in the Northern and Central-South Eastern Regions, the focus for irrigated agriculture in those regions consists of small scale irrigation along the ridge of mountains and hills. Irrigation is mostly to supplement the supply of water during the raining season with a very limited potential for dry season production. Development in the uplands will first focus on rice production for local food security needs. The improvement of small households and communal traditional weirs will be one of the means to attain those needs.

Upland irrigated agriculture will be more diversified combined with, animal husbandry, aquatic-fish cultures, vegetables and tuber productions to provide a greater range of food and commercial products to meet the nutritional and increase household income of local communities. Storage of water by small reservoir for animal husbandry and for stocking water to prevent against drought will be one development option in the area.

There are also a number of small plains located along the Mekong River and its main tributaries that have potential to develop commodity base irrigated agriculture production. The small plains are located in the Northern Region covering the provinces of Bokeo, Sayabury, Luangnamtha, Luangprabang, Oudomxay, Xiengkhouang and Huaphan. Large and medium sized reservoirs and weirs are to be improved for the production paddy, crops, animals and other irrigated agriculture commodities in the model of the low land Mekong Plains area.

Source: Irrigated Agriculture National Action Plan 2nd Draft 2010052, page 23, Vientiane, May 2010

5.5 Monitoring and evaluation, corrective action

133. The objective of ADS monitoring and evaluation is to determine if there is evidence as to whether allocated resources are making a difference, notably **with respect to the impact on achieving the four sector-specific goals and the performance targets of the programs formulated in the 5 year Master Plan.**⁴⁵ Operation and management of the monitoring and evaluation (M&E) process will be the responsibility of Department of Planning (DOP) within MAF, supported by the planning divisions of the MAF line agencies. The Department of Planning will guide the overall M&E process and related activities within MAF and with regard to development partners, plus providing timely and relevant information to project managers and project stakeholders. This requires close coordination and communication with national project directors, steering committee members, representatives of primary stakeholder groups, gender

⁴⁵ This kind of higher level **sector-wide impact monitoring** (beyond the mere follow-up on the implementation of planned measures), requires a sound database with relevant baseline data on the status quo of whatever will be evaluated in 5 or 10 years. The envisaged "**Agricultural Census**" (FAO) should be seen as a unique opportunity to define and gather such baseline data which implies that the parameters of the Census are to be aligned with the information needs for such as M&E system.



units (sub-CAW), external consultants, and field staff when appropriate, as well as members of external M&E-related missions.

134. The **methodology to be used** requires that the planning divisions of each line agency report to DOP on the status of each project and the level of achievement of the agreed objectives of each project or program. The status reports will consist of brief summaries of project and program monitoring and evaluation reports provided by national project directors to the planning divisions and to development partners. The findings of each report will be used to take stock on results of the project to date. Information will be drawn from reports from field staff; monthly or quarterly progress reports; supervisory mission reports; mid-term reports; semi-annual and annual reports; project completion reports; and, post-project evaluation reports. In addition, major conclusions from benchmark survey reports should be summarized and provided to DOP, including any early analyses and results from baseline surveys.
135. **DOP will input and process** the monitoring reports to prepare internal annual program status reports that conform to the objectives, goals, targets, outputs, and outcomes of the ADS. Internally, within DOP, projects will be rated based on the status reports submitted by each line agency. Projects will be measured against criteria formulated in consultations between DOP and the national project directors. DOP will apply these criteria to rate projects annually, including performance of gender promotion, as satisfactory or unsatisfactory. All projects are subject to audits by the Ministry of Finance at all times. Projects that are rated unsatisfactory will be given a warning after the first year; and, will be suspended following a second unsatisfactory rating. Suspended projects will be examined in detail and either modified or terminated.

5.6 Roadmap and Master Plan

136. The present Agriculture Development Strategy (ADS) is a **long term framework for the development of the sector** which is not intended to provide operational details on the implementation of the 8 programs and their planned measures. The ADS will serve as a reference for orienting MAF decision makers and officers, as well as to serve as a reference for Development Partners providing their support to the ANR Sector.
137. A detailed **Agricultural Master Plan** (AMP) associated with an **Agricultural Investment Plan** (AIP) for implementing the Agriculture Development Strategy have been prepared as separate documents, which cover the 5 year period from 2011 to 2015. These plans will become integral parts of the 7th National Socio-Economic Development Plan (NSEDPlan).



Annexes

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Annex 1: Overview Matrix

	Impact	Contributions by Implementation Programs
<p>Vision Sustainable development for agriculture, forestry, natural resources management and rural development, based on a holistic concept with economic, social and ecological dimensions</p>		<ol style="list-style-type: none"> 1. Food production 2. Commodity production and farmer organizations 3. Sustainable production patterns, land allocation and rural development 4. Forestry development 5. Irrigated agriculture 6. Other agriculture and forestry infrastructure 7. Agriculture and forestry research and extension 8. Human resource development
<p>Development Goals 2020</p> <ul style="list-style-type: none"> • Gradual introduction and increased application of modernized lowland market-oriented agricultural production, adapted to climate change and focused on smallholder farmers • Conservation of upland ecosystems, ensuring food security and improving the livelihoods of rural communities 		
<p>Specific Goals 2015:</p> <p>Goal 1: The improvement of livelihoods (through agriculture and livestock activities) has food security as its first priority.</p>	Improved food security	<ul style="list-style-type: none"> • Program 1 • Program 6 • Program 7 • Program 8
<p>Goal 2: Increased and modernized production of agricultural commodities will lead to “pro-poor and green value chains”, targeting domestic, regional, and global markets, based on organizations of small holder farmers and partnering investments with the private sector.</p>	Increased production and value added of commodities	<ul style="list-style-type: none"> • Program 2 • Program 5 • Program 7 • Program 8
<p>Goal 3: Sustainable production patterns, including the stabilization of shifting cultivation and climate change adaptation measures, are adapted to the specific socio-economic and agro-ecological conditions in each region.</p>	Widespread application of ecologically sustainable production patterns adapted to the conditions of regions	<ul style="list-style-type: none"> • Program 3 • Program 7 • Program 8
<p>Goal 4: Sustainable forest management will preserve biodiversity and will lead to significant quantitative and qualitative improvements of the national forest cover, providing valuable environmental services and fair benefits to rural communities as well as public and private forest and processing enterprises.</p>	Forests contribute significantly to the welfare of present and future generations of the Lao people	<ul style="list-style-type: none"> • Program 4 • Program 7 • Program 8



Annex 2: Example of Geographic Area Development: Irrigated Agriculture

Geographic sub-Areas	Sub-Areas Classification	Irrigated Agriculture Development Focus	Irrigated Agriculture Technology Development and Services	Irrigation Rural Infrastructure Development, and Water Management Services
Uplands in Northern, Central Eastern and Southern Eastern Region	Small flat land on mountain and hill ridges	Focus on rice production and livelihood nutritional improvement through food crops, livestock and NTFPs' management and domestication.	Focus on system for rice intensification (SRI); improved rice seed (adaptation to climate and high yield); multiple cropping combined with fish culture, poultry and small animals (pigs) raising; fruit tree plantation Watershed management with forest enrichment and plantation Strengthen village and village development clusters in rice and food production and technology development	Improvement of households and traditional micro-weirs (<20 ha) Development of drought prevention structures (small reservoir for water storages)
Lowland and flood plains in Northern, Central and Southern Region	Large low land plains with water resource potential Large dry land with limited water resource potential Flood prone areas and wetlands	Focus on rice production during wet season and industrial crops during dry season for domestic and international markets. Develop fish culture, poultry and small animals farming Develop large animal farming with irrigated pasture	Focus on modern agriculture farming technologies: Development of internationally certified rice and crop seeds, intensive agriculture farming land consolidation, yield improvement, farm mechanization, post harvest technology, agro-industry modernization. Focus on contract farming, development of agriculture production groups and cooperatives, and development of private agriculture farms Watershed management with forest enrichment and plantation Strengthen village and village development clusters in rice and commodity production and technology development	Integrated rural infrastructure development with the: <ul style="list-style-type: none"> • Rehabilitation and completion of existing small (<100 ha) and medium (100-500 ha) sized irrigation and drainage schemes including pump schemes. • Rehabilitation of large irrigation system (>500 ha) including pump schemes • Development of new irrigation systems. Focus is on the development of large gravity (weirs and reservoirs >500 ha) and combined hydropower-irrigation system. • Development of road and bridge infrastructures • Development of pressurized irrigation systems (drip, sprinkler, rain etc.) • Development of flood and drought prevention facilities. • Agriculture land development • Watershed management and plantation for gravity irrigation. • Development and modernization of rice mills and agro-industries Develop irrigation and rural infrastructure management through strengthening water user organization and public co-management services and IMT
Urban areas in Vientiane Capital and major cities	Land with water resource potential with completion for urban land and water supply	Focus on food and industrial crops for domestic and international markets. Develop fish culture, poultry and small animals farming.	Focus on modern agriculture farming technologies as above	Same as above
The Boloven Plateau	High elevated volcanic land	Focus on intensive production of vegetables, tree crops (coffee), Develop fish culture, poultry and small animals farming.	Focus on modern agriculture farming technologies as above	Development of pressurized irrigation systems (drip, sprinkler, rain etc.)

Source: Irrigated Agriculture National Action Plan 2nd Draft 2010052, page 23, Vientiane, May 2010



Targeted Irrigated Agriculture Area by Focal Development Areas: Commodity Production – Livelihood Development

Provinces	Wet S paddy 2008 (ha)	Irrigated area planted 2008-09 (ha)	Total potential irrigated area 2015 (ha)								
			Total area			Irrigated Agriculture Focus Area			Irrigated Agriculture for Livelihood & Environment		
			No. of Dis-tricts	Irrigated wet season area	Irrigated dry season area	No. of Dis-tricts	Irrigated wet season area	Irrigated dry season area	No. of Dis-tricts	Irrigated wet season area	Irrigated dry season area
Northern	116,010	19,984	62	140,215	50,975	14	54,600	38,500	48	85,615	12,475
Bokeo	14,258	4,565	8	18,550	13,520	2	13,650	12,020	6	4,900	1,500
Luangnamtha	11,221	2,294	5	13,765	6,865	2	8,965	6,265	3	4,800	600
Phongsaly	5,922	486	5	5,860	1,565	1	660	615	4	5,200	950
Oudomxay	12,340	884	7	9,725	2,410	2	4,525	1,460	5	5,200	950
Xayabury	27,370	4,313	10	35,920	10,805	2	10,825	7,270	8	25,095	3,535
Luangprabang	12,578	3,758	11	16,635	4,580	2	3,055	2,180	9	13,580	2,400
Huaphanh	11,815	2,307	8	15,150	4,810	2	4,650	3,170	6	10,500	1,640
Xiengkhouang	20,506	1,377	8	24,610	6,420	1	8,270	5,520	7	16,340	900
Central	159,744	56,384	38	186,635	116,315	12	107,855	79,815	26	78,780	36,500
Vientiane Prov.	45,338	21,824	13	58,890	36,645	3	26,000	19,045	10	32,890	17,600
Vientiane Cap.	39,280	24,373	9	37,630	27,610	4	28,630	21,310	5	9,000	6,300
Bolikhamxay	24,346	3,471	7	50,680	32,410	2	37,180	26,510	5	13,500	5,900
Khammouane	50,780	6,716	9	39,435	19,650	3	16,045	12,950	6	23,390	6,700
Southern	344,196	62,533	42	239,995	89,780	15	103,280	70,280	27	136,715	19,500
Savannakhet	161,354	38,806	15	91,605	28,710	5	35,905	24,610	10	55,700	4,100
Saravane	65,424	8,463	8	48,995	17,410	3	25,280	14,210	5	23,715	3,200
Champasak	92,160	13,411	10	46,205	13,960	4	12,005	10,360	6	34,200	3,600
Sekong	6,969	1,130	4	10,200	4,010	1	5,100	3,510	3	5,100	500
Attapeu	18,289	723	5	42,990	25,690	2	24,990	17,590	3	18,000	8,100
Total area	619,950	138,901	142	566,845	257,070	41	265,735	188,595	101	301,110	68,475

Source: Irrigated Agriculture National Action Plan 2nd Draft 2010052, page 23, Vientiane, May 2010



Annex 3:

Documentation of Consultative Processes

Workshops, meetings, written comments, matrixes, other feedback from

- MAF Depts
- Other Ministries
- Provinces and districts
- Development partners
- Private sector
- other



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