



Plan of Action

for Disaster Risk Reduction and Management
in Agriculture (2014—2016)

Lao PDR
2014



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**Food and Agriculture
Organization of the
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Foreword

Lao People's Democratic Republic has been increasingly affected by natural hazards. Floods, droughts, and storms, which often trigger secondary hazards such as landslides, fires, infestations and outbreaks of animal diseases, cause each year severe damages and losses of lives, livelihoods and infrastructure. Considering the expected impacts of climate change, these hazards are likely to increase in frequency and intensity. This creates an additional challenge for reaching the economic and social development goals and is threatening food security of smallholder farmers who largely depend on traditional agricultural production.

The Government of Lao PDR and the Ministry of Agriculture and Forestry (MAF) in particular have recognized the need for reducing the underlying risks to counterbalance hazard and disaster impacts. A proactive, integrated approach to disaster risk management (DRM) with a strong focus on disaster risk reduction (DRR) measures, linked to poverty reduction, food and nutrition security, and the emerging challenges of climate change is a new priority for sustainable agricultural development.

Based on the high commitment to promote the shift towards proactive disaster risk reduction and management (DRRM), MAF has initiated an interactive DRRM stakeholder consultation process in 2013, which led to the development of this Plan of Action for Disaster Risk Reduction and Management (DRRM) in Agriculture (2014-2016); drawing upon key priorities embedded in existing policies, regulatory frameworks, and building on good practices and experiences available from existing programmes and projects, the Plan of Action identifies priorities and working mechanisms for enhanced risk reduction in agriculture, livestock, forestry and fisheries as identified and prioritized by the technical departments and partners during the consultation process.

The Plan of Action supports the long-term development goals and priorities of the 7th National Socio-Economic Development Plan (2011-2015), and the main thrust of addressing risks and vulnerabilities, which is part of the Agricultural Development Strategy (2011-2020); and it will promote synergies with the eight programmes of the Agricultural Master Plan (2011-2015), the Draft National Disaster Management Plan (2012-2015) to create a more disaster resilient nation, and with current climate change adaptation (CCA) and sustainable natural resources management (NRM) initiatives. The implementation of the Plan will guide MAF and its departments in systematically integrating risk mitigation and prevention into on-going and new development activities, enhance preparedness for response, and promote faster recovery in agricultural sectors, including crops, livestock, forestry, and fisheries/aquaculture; its implementation will ultimately contribute to increasing the resilience of rural livelihoods to climate-related hazards and disasters.

Ministry of Agriculture and Forestry

Vilayvanh Phomkhe



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The Plan of Action for Disaster Risk Reduction and Management (DRRM) in Agriculture was developed through a process of consultation and engagement led by the Ministry of Agriculture and Forestry (MAF). A Technical Support Team was established to identify, coordinate and mobilize technical expertise from the various technical departments of MAF including the Departments of Planning and Cooperation, Agriculture, Irrigation, Forestry, Livestock and Fisheries, Agricultural Extension and Cooperative, the National Agricultural and Forestry Research Institute as well as from the National Disaster Management Office (NDMO) of the Ministry of Labour and Social Welfare (MLSW), and the Department of Disaster Management and Climate Change (DDMCC) and of Meteorology and Hydrology (DMH) under the Ministry of Environment and Natural Resources (MONRE). Several International Organizations actively engaged in Disaster Risk Management (DRM) provided information and recommendations for Plan of Action. To inform the planning process from a bottom-up perspective, the Sustainable Agriculture and Environment Development Association (SAEDA) was contracted to conduct a disaster management system assessment and analysis in four provinces and districts. The Food and Agriculture Organization of the United Nations (FAO) facilitated the planning and development process by bringing together key stakeholders, providing guidance, technical assistance, backstopping for the field assessment and any other necessary support.

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List of acronyms

AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
ADPC	Asian Disaster Preparedness Center
AMP	Agricultural Master Plan
ARCC	Adaptation and Resilience to Climate Change
ASEAN	Association of Southeast Asian Nations
CBDRRM	Community-based disaster risk reduction and management
CCA	Climate change adaptation
DAEC	Department of Agricultural Extension and Cooperatives
DAFO	District Agriculture and Forestry Office
DDMC	District Disaster Management Committee
DDMCC	Department of Disaster Management and Climate Change
DIPECHO	European Commission Humanitarian Aid department's Disaster Preparedness Programme
DLF	Department of Livestock and Fisheries
DMH	Department of Meteorology and Hydrology
DoA	Department of Agriculture
DoF	Department of Forestry
DoI	Department of Irrigation
DoPC	Department of Planning and Cooperation
DONRE	District Office for Natural Resources and Environment
DRM	Disaster risk management
DRR	Disaster risk reduction
DRRM	Disaster risk reduction and management
ECTAD	Emergency Centre for Transboundary Animal Diseases
EWEC	East-West Economic Corridor
EWS	Early Warning System
FAO	Food and Agriculture Organization of the United Nations

FFS	Farmer field school
GFDRR	Global Facility for Disaster Risk Reduction
GIS	Geographic Information System
GIZ	German Federal Enterprise for International Cooperation
HFA	Hyogo Framework for Action
IACP	Inter-Agency Contingency Plan
IASC	Inter-Agency Standing Committee
IFAD	International Fund for Agricultural Development
IPM	Integrated Pest Management
IWRM	Integrated water resources management
LDC	Least developed country
LRC	Lao Red Cross
M&E	Monitoring and evaluation
MAF	Ministry of Agriculture and Forestry
MLSW	Ministry of Labour and Social Welfare
MoE	Ministry of Education
MoF	Ministry of Finance
MoHA	Ministry of Home Affairs
MoIC	Ministry of Industry and Commerce
MoNRE	Ministry of Natural Resources and Environment
MPI	Ministry of Investment and Planning
MPWT	Ministry of Public Work and Transport
NAFRI	National Agricultural and Forestry Research Institute
NAPA	National Adaptation Plan of Action
NDMC	National Disaster Management Committee
NDMO	National Disaster Management Office
NDPCC	National Disaster Prevention and Control Committee
NERI	National Economic Research Institute
NGO	Non-Governmental Organization

NRM	Natural resources management
NSCC	National Strategy on Climate Change
NSEDP	National Socio-Economic Development Plan
NUOL	National University of Laos
PA	Priority Area
PAFO	Provincial Agriculture and Forestry Office
PDMC	Provincial Disaster Management Committee
PDNA	Post-disaster needs assessment
PDR	People's Democratic Republic
PONRE	Provincial Office for Natural Resources and Environment
RTP	Round Table Process
SAEDA	Sustainable Agriculture and Environment Development Association
SOP	Standard operating procedure
SWG	Sector Working Group
ToR	Terms of reference
ToT	Training of trainers
TST	Technical Support Team
TWG	Technical working group
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
VDPU	Village Disaster Protection Units
WB	World Bank
WFP	World Food Programme
WREA	Water Resource and Environment Administration

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01 Introduction

Country overview, the agricultural sector and natural resources

Lao People's Democratic Republic (PDR) is a landlocked country of 236 800 km² located in mainland Southeast Asia between the Kingdom of Cambodia, the Republic of the Union of Myanmar, the Kingdom of Thailand and the Socialist Republic of Viet Nam. The country is divided into 17 provinces, which are made up of 142 districts and 11 390 villages. The population of Lao PDR is estimated at around 6.5 million (2012), with a projected annual growth rate of 1.63 percent. The country is home to 49 different ethnic groups with a high diversity of languages spoken, culture and traditions.

Lao PDR's agro-climatic profile is divisible into three main zones: the northern mountainous region; the hilly and mountainous regions of the centre and south; and the plains of the Mekong River. The country has a tropical climate influenced by the southeast monsoon, with one wet/monsoon season between May and September and a dry season from October to April. During the dry season, the months between November and February are characterized by lower temperatures. The subtropical regions of the north experience drastic temperature drops throughout the year, with minimum temperatures reaching down to 0 °C during the dry months.

Socio-economically, Lao PDR is among the least developed countries (LDC) in the world. However, with an average annual economic growth rate of eight percent, the country is currently one of the fastest growing economies in Southeast Asia. Lao PDR has reported consistently declining poverty rates since 1990. Nonetheless, almost 80 percent of the population continues to live in rural areas, of which the majority still relies on subsistence agriculture. Among them, farmers represent the lowest income group and have a relatively low level of formal education. Although only about 4 percent of the total land area is classified as arable, the agriculture sector composes two-thirds of the adult workforce and accounts for nearly one-third of the country's gross domestic product.

The two main rice farming systems make up about two-thirds of Lao PDR's total cultivated area, namely the (i) lowland irrigated or rain-fed agriculture system prevailing in the Mekong flood plains and the (ii) shifting cultivation or swidden (slash-and-burn) farming system dominating the uplands. Horticulture crops and

coffee are cultivated in smaller systems on the Bolovens Plateau. The majority of agricultural production is characterized by near-subsistence farming. However, over the last two decades, agricultural production has become increasingly mechanized. Improved seed varieties, organic farming and a general reduction in the use of chemical fertilizers, pesticides and herbicides have been promoted during the past few years as part of the Government's effort to introduce green and clean agricultural development. Despite such progress, only about 12 percent of farming systems are irrigated, which limits many farmers to cultivate one crop per year.

Livestock breeding is considered to be one of the most important safety nets for smallholders in Lao PDR, particularly in the southern regions, where farmers rely heavily on draft animals. The livestock population has consistently grown during the last decade as a result of increased trade with neighbouring countries and increasing domestic meat consumption. Similarly, fishing and aquaculture are important secondary activities for many farming households. The number of fish ponds in the country is continuously increasing, providing income as well as an additional food supply and increased nutrition security. Over 70 percent of farming households engage in non-aquaculture fishing, an estimated 19 percent of which takes place in rice fields and 15 percent in swamps or seasonal flood plains.

In the forestry sectors a recent trend shows a high increase of rubber tree plantations covering estimated 300 000 ha of which most are to be found on slop land in the northern part of the country at around 800-1 000 m above sea level.

Overall, Lao PDR is rich in forest, water, biodiversity, mineral and land resources and retains one of the most significant areas of relatively intact forests in Asia. Lao people living in rural and remote areas rely on forest resources in the form of non-timber forest products, which supply a vital source of income as well as additional food sources or herbal medicines to be consumed at household and community levels. However, different drivers for land-use change have left the country's natural resource base increasingly fragile and susceptible to degradation, threatening the livelihoods of the households depending on it. At present, deforestation and land degradation are considered among the most severe environmental indicators of unsustainable land-use change. This is mainly attributable to intensive slash-and-burn practices, mismanaged logging and the conversion of forest land. Growing signs of degradation in key watersheds have been discussed critically in the context of recent developments in water resource management related to the environmental costs of hydropower and the population's limited access to clean water and sanitation.

High exposure to natural hazards

Smallholders and landless poor in Lao PDR face high risk of natural hazards and climate change. Over 95 percent of the farming systems are vulnerable to flooding, drought and delayed onset of the rainy season. In general, the most common hazards for the agricultural sector in Lao PDR are annual river and flash floods,

landslides, occasional storms and typhoons during the wet season, drought and acute water shortages during the dry season, as well as forest and community fires, agricultural pests, rodent infestations, and animal epidemics. Among these, the three most common weather- and climate-related hazards with the highest impacts on agricultural production are floods, droughts and storms, which often trigger secondary hazards such as landslides, forest and community fires, pest or rodent infestations and outbreaks of animal disease.

Flooding

Regular flooding occurs as a result of heavy rainfall and the locations of major rivers, with moist south-westerly winds blowing from the Indian Ocean between mid-May and September. Some floods are intensified by tropical storms, which reach the country from the South China Sea. The main factors determining the severity of flood impacts relate to inadequate protection along critical flooding points and poorly developed water control gates. According to the World Food Programme (WFP), 16 floods of varying magnitudes and durations were reported during the period from 1996 to 2002. In recent years, recurrent floods have caused severe damage to the agriculture sector, particularly to rice production, as demonstrated in Table 1.

Table 1: Lowland rain-fed rice area (ha) damaged by floods from 2006 to 2010
(Source: Department of Agriculture, Ministry of Agriculture and Forestry).

Sources	2006	2007	2008	2009	2010
Northern	1 765	1 858	1 895	1 767	2 343
Central	1 105	17 080	35 639	7 380	14 585
Southern	8 625	9 765	4 160	15 232	19 632
Total	11 495	28 703	41 693	24 379	36 560

The most recent flood occurred between August and September 2013. An assessment by WFP estimated that approximately 395 000 people were affected throughout 12 provinces, 52 districts and 1 221 villages, largely in the central and southern parts of the country along the Mekong River, where food production areas are concentrated and where the majority of smallholders and landless poor live. An estimated 50 247 ha of rice fields were damaged and thousands of livestock lost. Furthermore, the flood and consequent landslides damaged and destroyed infrastructure, including houses, irrigation systems and roads. In Oudomxay Province, the flood was responsible for the deaths of 17 people. Although the recorded damages to farming systems – comprising about 6.9 percent of the country's total rice fields – may seem relatively small, the rural poor possess insufficient coping and adaptive capacities to buffer such economic shocks, and access to public safety nets is highly limited.

Storms

The mountainous areas between Lao PDR and Viet Nam serve as natural protection from typhoons, reducing their intensity before they hit the country. Nonetheless, heavy rainfall associated with these typhoons causes or intensifies seasonal floods, flash floods, landslides, erosion, destructive winds and lightning. Several severe typhoons have been reported in recent years, including Xangsane in 2006, Lekima in 2007 and Ketsana in 2009. These typhoons rendered vast losses of human lives, property and agriculture throughout the region. In Lao PDR, Typhoon Ketsana affected thousands of people across five provinces and caused economic losses amounting to an estimated USD 58 million.

Drought and drought spells

While five major droughts have been reported over the past 40 years as having severely damaged the farming systems of smallholder farmers (mainly rice systems), smaller droughts affect the country almost annually, significantly constricting yields (by up to 30 percent of their full potential in southern provinces) and threatening food security. An estimated 188 000 households are regularly affected by drought, mainly in the provinces of Champasak, Khammouan, Salavan, Savannakhet, Vientiane and Xaignabouli.

In contrast to floods and storms, droughts are referred to as the “silent” disaster, because they often do not receive media coverage until the situation is truly grave. The mountainous areas, which are heavily dependent on rain water for agriculture production, increasingly suffer from droughts and drought spells. Besides drought, delayed onset of the rainy season has become a major threat to the entire cropping season. Farmers usually initiate wet season rice production with seeding in June to begin planting in July; however, farmers with rice fields located in higher terrains or further away from bodies of water are increasingly unable to seed their rice according to this timeframe, as rainfall patterns are changing.

Crop pests and animal diseases

Crop and livestock pests occur predominately in the highland areas in the northern provinces and in the higher elevations of the central and southern provinces. One of the greatest outbreaks of animal disease in Lao PDR was that of avian influenza in 2007, when millions of ducks and chickens were culled for safety reasons. Animal losses and plant pests and diseases are also often linked to extreme weather events, as the 2013 floods again confirmed. While the most common threats to livestock during flooding are trauma and injury, the main risks for and losses of livestock after flooding are related to the greater spread of diseases, a result of decreased hygiene and limited access to vaccination programmes. Animal health is also affected during the dry season, when a greater number of livestock suffers from heat stress.

The need for a Plan of Action for Disaster Risk Reduction and Management in Agriculture¹

Given agriculture's high exposure to natural hazards and the progress of climate change, these hazards are likely to increase in their intensity. Lao PDR is expected to be seriously affected by future climate-related events. The rural poor with low incomes and a high dependency on traditional agricultural systems or marginal land will be particularly vulnerable.

In the face of the challenges and risks posed by extreme weather events, natural hazards and climate change, the Lao Government initiated several efforts to reduce the impact of disasters through a more proactive approach to disaster risk reduction and management (DRRM). However, the proactive aspects of disaster risk reduction (DRR) have not yet been adequately integrated into agricultural strategies and plans, nor have they been implemented. At present, public awareness as well as the planning and implementation of DRRM-related responsibilities within the agricultural sector still follow an emergency response and recovery centered approach. The future approach to building resilient agricultural production systems and livelihoods will rely on the official endorsement and systematic implementation of existing and new strategies for DRRM and climate change currently under development.

A Plan of Action for Disaster Risk Reduction and Management (DRRM) in Agriculture is urgently needed to mainstream DRRM into agricultural development, building on already-existing strategies and plans and ensuring synergies with related CCA and sustainable natural resources management (NRM) initiatives, as well as key coordination bodies and stakeholders for its implementation. In accordance with existing patterns of hazard risk and exposure, the plan must apply an integrated, multi-hazard approach combining measures for institutional and technical capacity development and planning with concrete actions needed at all levels. Special emphasis should be placed on measures that promote communities' and farmers' capacities to prevent and/or counteract the impacts of hazards that regularly affect agriculture, livestock, forestry and fisheries/aquaculture.

Due to the varying nature and scale of hazards, a Plan of Action for DRRM in Agriculture must address risks at different scales ranging from transboundary to localized issues (e.g. NRM at landscape or river basin levels). The plan must identify strategic key areas of work, and within each of those, must propose actions aimed towards effectively reducing risks of natural hazards and exposure of vulnerable people and assets to damage and losses. While key areas of work can be outlined in broader terms, there is a need to define concrete activities in light of location-specific

¹ The term "agriculture" as used in this document includes cropping, livestock, forestry and fisheries sub-sectors; this use of the term corresponds to the thematic mandate of the Ministry of Agriculture and Forestry (MAF).

hazard exposure and agro-ecological and socio-economic contexts. A national level, strategic planning document like this Plan of Action cannot provide all location-specific details; however, it benefits from identifying and “tagging” activities that will require location-specific adaptations during implementation.

Since the ultimate goal of a Plan of Action for DRRM is to contribute to climate- and risk- resilient agricultural development, it is essential that the Plan of Action for DRRM in Agriculture become an integral part of overall agricultural development planning. DRRM and CCA in agriculture are not standalone goals, but complement and support other national priorities.

02 Existing strategies and plans related to disaster risk reduction and management in agriculture

The Government of Lao PDR has taken important steps towards building resilience to natural hazards by shifting from an emergency response approach to one that focuses on proactive and preventive risk reduction. Recently, greater effort has been made to address DRRM and climate change as an integral part of agricultural development planning and programming. This has paved the way for a series of strategies, legal and regulatory frameworks as well as new institutional arrangements directly linked to sustainable NRM, disaster risk management (DRM) and CCA. Currently, the formulation of a Disaster Management Law and an early warning system (EWS) are planned to strengthen the legal framework for DRM. Table 2 lists additional strategies and plans that are of particular importance for DRM in agriculture.

Table 2: List of recent strategies and plans related to DRRM and/or the agriculture sector.

Strategy/Plan		Timeframe/Endorsement
1.	Strategy for Agricultural Development	2011–2020
2.	Agricultural Master Plan	2011–2015
	Agricultural Investment Plan	2011–2015
3.	The 7th National Socio-Economic Development Plan	2011–2015
4.	Inter-Agency Contingency Plan	February 2013
5.	Draft National Disaster Management Plan	2012–2015
6.	The National Adaptation Plan of Action	April 2009
7.	Strategy on Climate Change	March 2010
	Draft Action Plan on Climate Change	2020–2013

The **National Strategic Plan for Disaster Risk Management 2003–2020** has provided the foundation for the current policy framework for disaster management. The main objective of the strategic plan was to outline a strategic direction and vision and establish a coordinating framework for the current **DRAFT National Disaster Management Plan (2012–2015)**, which focuses more strongly on specific

priority actions for different sectors. The proposed actions are embedded in an overall strategy with four key strategic objectives:

- i. safeguard sustainable development and reduce the impacts and damages caused by natural and man-made disasters;
- ii. shift from relief to mitigation of disaster impacts to community, society and the economy and preparedness before a disaster strikes with emphasis on hazards such as floods, drought, landslide and fire;
- iii. ensure that disaster management is a joint responsibility of both the Government and the people through building community capacity; and
- iv. promote sustainable protection of the environment and the country's natural wealth, such as forests, land and water resources.

The DRAFT National Disaster Management Plan consists of seven components covering all sectors. Under the first component, the plan aims **to ensure that disaster risk reduction is a national and a local priority**². The Plan aims to strengthen the end-to-end multi-hazard EWS **to identify, assess and monitor disaster risks** (second component). The Plan further focuses on raising public awareness on DRR at all levels and increasing scientific research and knowledge exchange on DRR (third component)³. Furthermore, the plan identifies measures **to reduce underlying risk factors** (fourth component) by mainstreaming DRR into environment and natural resources management and the agriculture and forestry sectors and **to strengthen disaster preparedness for effective response** at all levels (fifth component)⁴. Finally, the plan centres on community at risk by promoting capacity building and gender empowerment for DRR interventions at the local level through **community-based disaster risk reduction** (sixth component).

The **Strategy for Agricultural Development** outlines development goals to be reached by 2020⁵, focusing on modernizing lowland market-oriented agricultural production adapted to climate change and targeting the needs of smallholders. It further aims to promote the conservation of upland ecosystems, ensuring food security and enhancing livelihoods of rural communities. To achieve this long-term strategy, four specific goals are envisaged for 2015, placing food security as the highest priority in regards to improving livelihoods in agriculture and livestock.

² e.g. developing a Disaster Risk Management Plan at national and local levels and supporting the establishment of a multi-stakeholder disaster risk reduction (DRR) platform.

³ Including using knowledge, innovation and education to build a culture of safety and resilience at all levels.

⁴ Particularly in regards to strengthening capacities for post-disaster recovery and reconstruction planning, programming and funding mechanisms.

⁵ Currently, the Strategy for Agricultural Development as well as the Agricultural Master Plan and Agricultural Investment Plan are under revision. In order to ensure contribution of this plan to the revised Strategy for Agricultural Development, specific linkages will be identified.

The strategy further aims to increase modernized production (pro-poor and green value chains) and promote sustainable production patterns (including CCA and stabilization of shifting cultivation), as well as to foster sustainable forest management. The goal of increasing food security further includes the improvement and diversification of smallholder farming systems. The strategy recognizes the challenges of natural and human-induced disasters and climate variability and addresses their impact on agricultural production systems, as well the need to integrate CCA and DRM into the implementation of the Agricultural Master Plan (AMP) (paragraph 62). A planned comprehensive risk programme will focus mainly on risks related to fluctuating world market prices, climate change and natural disasters (paragraphs 115-118). Furthermore, the strategy links risk reduction to gender-specific factors by emphasizing the need to better understand gender-specific risks and vulnerabilities (paragraph 42).

The **Agricultural Master Plan (AMP)** and the **Agricultural Investment Plan (AIP)** will guide the implementation of the Strategy for Agricultural Development over a period of five years (2011–2015), and are also an integral part of the 7th National Socio-Economic Development Plan (7th NSEDP). The AMP contains eight priority programmes, namely: food production; commodity production and farmers' organizations; sustainable production patterns, land allocation and rural development; forestry development; irrigated agriculture; other agriculture and forestry infrastructure; agriculture and forestry research and extension; and human resource development. Several actions identified in the AMP – particularly under Programmes 1, 3, 5 and 7 – are expected to contribute to an increase in the resilience to disaster risks and coping capacities of rural communities that depend on agriculture and are affected by long-term climate change as well as the already-increasing frequency of extreme weather events. The measures outlined in the AMP⁶ refer mainly to proven good agricultural practices at the community level,

⁶ Measures included under Programme 1 include agricultural diversification and promotion of indigenous rice varieties for climate change resilience (paragraph 33), heat-resistant breeds (paragraph 34), controlling transboundary animal diseases, community based small-scale pond fisheries (paragraph 34) and the promotion of risk management instruments (e.g. insurances). Under Programmes 3 and 4, measures include integrated water resources management (paragraph 85), community and climate-smart land use plans (paragraph 86-88), as well as participatory land-use planning (paragraph 106). In Programme 5, disaster prevention is promoted through strengthened research and extension functions, community-based watershed programs, flood and drought prevention, climate proofing of irrigation systems and weather-based farming models (paragraph 132). Finally, under Programme 7, a wide range of activities are expected to strengthen the resilience of agriculture to extreme weather events and climate change impacts and ensure food security through stronger collaboration between the National Agriculture and Forestry Research Institute, Department of Agricultural Extension and Cooperatives, Department of Forestry, Department of Livestock and Forestry and the Department of Agriculture, including: mixed farming, agro-forestry (including agrosilvopastoral) and blending indigenous and gender knowledge with modern agricultural techniques; upgrading local breeds of livestock and addressing disease prevention (paragraph 156); developing capacities to integrated watershed management (paragraph 158); agro-forestry research (paragraph 159); and understanding local impacts of climate change (paragraph 160).

including synergies between sustainable agricultural development and prevention of the impacts of disasters and climate change.

The **7th National Socio-Economic Development Plan** (7th NSEDP, 2011–2015) provides the overall framework for the country’s economic and social development. Its two highest targets are the achievement of the Millennium Development Goals by 2015 and graduation from LDC status by 2020. A DRR perspective has been integrated partially into development planning and aims to further create legal frameworks and sectoral strategies for DRM. The 7th NSEDP recognizes climate change among the greatest challenges for development. At the level of the environmental sector, it aims to protect the country from losses due to natural disasters through the control of forest fires, droughts, floods, erosion of rivers and denuding of mountains.

The **Inter-Agency Contingency Plan (IACP)**, endorsed by the Inter-Agency Standing Committee (IASC) in February 2013, was developed under the leadership of the National Disaster Management Office (NDMO), the United Nations Resident Coordinator’s Office and the IACP Technical Working Group (established in October 2011)⁷. The contingency plan aims to support the Government of Lao PDR “to lead and ensure an effective, timely and coordinated response to mitigate the risk and reduce the impact of natural disasters on Lao communities, through a clear response coordination mechanism and strategy, and clearly defined roles and responsibilities of all IASC members (IACP, p.6).” The IACP provides an entire outline of the response system in Lao PDR, including Government bodies, inter-agency actors, coordination platforms and functions, overall management and coordination, cluster response plans and standard operating procedures (SOPs).

From a regional perspective, the strategy for a stronger integration of DRRM into agriculture in Lao PDR recognizes the **Association of Southeast Asian Nations (ASEAN) Agreement on Disaster Management and Emergency Response (AADMER)**, which was ratified by all ten ASEAN Member States and entered into force on 24 December 2009 as the first legally-binding Hyogo Framework for Action (HFA)-related instrument in the world. As a proactive regional framework, AADMER presents the key institution to support Lao PDR’s overall vision for DRRM through regional cooperation, coordination, technical assistance and resource mobilization in all aspects of disaster management.

Section 3.2 of the **National Adaptation Programme of Action (NAPA)** (April 2009) identifies urgent needs and priority activities for CCA in four sectors, one of which is agriculture (while two others, forestry and water, are closely linked). Among the highest priorities are to “strengthen the capacity of the National Disaster Management Committees” and to “promote secondary professions in order to

⁷ With support from the United Nations Office for Coordination of Humanitarian Affairs Regional Office for Asia and the Pacific.

improve the livelihoods of farmers affected by natural disasters induced by climate change”. Several objectives identified in the NAPA to be reached by 2010 and 2020 apply an integrated approach consisting of CCA, DRR and sustainable NRM. Objectives in regards to DRR are linked mainly with awareness raising, EWS, legal frameworks and rapid response. Although most of the objectives are cross-sectoral, many of them are linked directly to agriculture due to the importance of the sector in the country’s development.

The **National Strategy on Climate Change (NSCC)** (March 2010) aims to create an enabling environment for improving mitigation and adaptation to changing climatic conditions in a way that promotes sustainable economic development. The strategy defines four goals, including increasing the resilience of key sectors of the national economy and natural resources to climate change and its impacts. Due to the strong linkages and several synergies between mitigation, prevention and preparedness in CCA, **the adaptation options for agriculture and food security** of the NSCC have high relevance for DRR. The NSCC has identified seven priorities, (shortened) including: i) mainstreaming climate change into the agriculture sector’s policy, strategies and action plan; ii) enhancing productivity through promoting sustainable agricultural practices including climate- and disease-resilient crop varieties; iii) improving and monitoring water resources and water supply systems, and rehabilitating the flood control system; iv) strengthening financial instruments and capacity development for farmers; v) undertaking country-specific, sector-based research on the vulnerability, impacts and adaptation options of the agricultural sector; vi) enhancing information dissemination and extension support for technical staff and Lao farmers in regards to climate change preparedness and responses; and vii) improving cooperation mechanisms among concerned sectors and strengthening regional and international cooperation. Similar to the adaptation options for agriculture, **adaptation options for forestry water resources and land-use change**⁸ address both long-term climate change and risk and exposure to current natural disasters⁹.

The **DRAFT Action Plan on Climate Change (2013–2020)** includes several CCA strategies particularly for the agriculture sector, as well as forestry and land-use change. The plan focuses on promoting climate resilience in farming, fisheries, forestry, infrastructure and rural economies. Further actions for technical capacity development, appropriate technologies and land-use change in regards to CCA are covered by this action plan. The adaptation options for the water sector include information systems as well as flood and drought management and integrated

⁸ *The strategy lists some examples such as incorporating climate concerns into long-term forest policymaking and forest management practices; strengthening forest fire prevention and management; seeking and developing plant species tolerant to increasing pest and climate change impacts; and strengthening information gathering and vulnerability assessment.*

⁹ *These linkages between climate change adaptation and DRR are mentioned in the National Strategy on Climate Change by proposing a stronger integration of climate change measures into current risk management strategies and planning processes.*

water resources management (IWRM). Furthermore, the fourth key initiative includes awareness raising on climate change and related environment and disaster management for officials at all Government levels, as well as the private and public sectors.

03 Institutional arrangements for disaster risk reduction and management in Lao PDR

National coordination and key partners

Since the foundation of Lao PDR in 1975, policies related to disaster management have focused mainly on the provision of emergency relief to meet the basic needs (e.g. food and shelter) of people affected by disasters and extreme climatic events, with a lesser focus on the mobilization of resources for prevention and mitigation.

A major milestone for a more comprehensive approach to disaster management in Lao PDR was the creation of the **National Disaster Management Committee (NDMC)** through the Prime Minister Decree No. 158 (23 August 1999)¹⁰. The NDMC provides recommendations and advice to the Prime Minister and plays the lead role in ensuring effective coordination related to all interventions in the disaster cycle, including mitigation, prevention, preparedness, response and recovery, while applying a multi-hazard approach. This new approach reflects the recognition of DRR and its relation to sustainable development. It places stronger emphasis on tackling disaster risks, improving preparedness through community-based disaster risk management, enhancing coordination between communities and Government at different levels and strengthening community resilience and self-help mechanisms. The NDMC also oversees the mainstreaming and integration of disaster management issues into sectoral development plans.

Also in 1999, the **National Disaster Management Office (NDMO)** was founded within the Ministry of Labour and Social Welfare (MLSW). Until 2011, the NDMO acted as the secretariat for the NDMC and was the lead agency for the coordination of DRM-related activities including regional and international disaster management

¹⁰ The Prime Minister Decree No. 261 (24 August 2011) reorganized the membership of the National Disaster Management Committee (NDMC) with the Deputy Prime Minister of the Ministry of National Defense as a Chairman and four Vice Chairs held by Ministries of (i) Labour and Social Welfare, (ii) Public Work and Transport, (iii) Agriculture and Forestry (MAF) and (iv) Health. Among the members were the Cabinet Chiefs of the Ministry of Planning and Investment, Foreign Affairs, Education, Finance and Natural Resource and Environment (MoNRE), the Director General of the Media Department within the Ministry of Information and the President of the Lao Red Cross. The NDMC is requested to meet at least twice a year before expected extreme events, and when a disaster strikes.

cooperation. The office's main responsibilities were to provide expert advice to the NDMC, prepare national disaster and emergency response plans and strategic policy coordination with ministerial focal points of all disaster relief operations and promote disaster mitigation, preparedness and awareness activities at the local level. Its mandate included information gathering and sharing, early warning, surveillance, joint training, developing guidelines and plans following quality standards and protocols required for regional and international cooperation to make DRM more effective and establishing disaster management implementation teams at national, provincial and district levels. The NDMO developed the Strategic Plan on Disaster Risk Management covering priority actions for all concerned sectors during three different periods (2001–2005, 2005–2010 and 2010–2020).

Recently, major institutional changes related to DRM¹¹ led to the reorganization and renaming of the NDMC to the **National Disaster Prevention and Control Committee (NDPCC)**. During the process, its secretariat – previously hosted by the NDMO – was transferred to the newly-established **Department for Disaster Management and Climate Change (DDMCC)** in the Ministry of Natural Resources and Environment (MoNRE)¹². The structural changes were attributed to the Government's commitment to a stronger prevention approach, the recognition of the need for environmental protection to build resilience and the linkages between short-, medium- and long-term needs and strategies for DRM as well as synergies between climate change adaptation and mitigation. The Committee's duties (among others) include to:

- i. endorse strategic plans and action plans, and draft various legislation on disaster management;
- ii. lead the coordination for protection and response to disasters across the country;
- iii. encourage ministries and local authorities to implement plans on disaster management;
- iv. urgently inform the Government on the status, severity and losses of lives and assets of the people when a disaster occurs and propose an immediate response plan for funding approval to respond to immediate and urgent needs; and
- v. lead the implementation and cooperation with foreign, international and Non-governmental Organizations (NGOs) that are able to build capacity in disaster management.

¹¹ Defined in the Prime Minister Decree No. 373 (21 October 2011), which replaces Decree No. 261 (24 August 2011).

¹² As expressed in the recent Prime Minister Decree the from 28 August 2013. The reformation of the NDMC to the National Disaster Prevention and Control Committee has also led to personnel changes, most notably strengthening the position of MoNRE in the Committee (formerly a member, MoNRE now holds the roles of Deputy Chair and Officer-in-Charge).

Provincial, district and village structures and responsibilities for DRRM

Lao PDR's provincial and district Government offices have established **Provincial and District Disaster Management Committees (P/DDMC)**¹³. P/DDMCs implement DRM at sub-national and district levels, as they channel information and resources and establish links between national objectives, provincial priorities and local needs. As the coordinating body for DRM in provinces and districts, the P/DDMCs are responsible for preparing a Provincial or District Disaster Management Plan addressing both DRR and emergency response. These plans include the identification of a hazards/risk profile for the province/district; the formulation of required resources for preventive and mitigatory action; planning of emergency, recovery and restoration operations; and the production of damage and loss assessments. The PDDMC is further expected to monitor hazards, risks, disaster threats and the conditions of vulnerable populations within their region, and conduct vulnerability analyses on emerging disaster-prone areas. The committees should identify and communicate training needs, conduct trainings and raise public awareness. The committees are also responsible for mobilizing and coordinating all interventions by other agencies in their province to ensure that disaster management fully reflects national priorities and guidelines.

At the village level, DRM is employed through **Village Disaster Protection Units (VDPU)**, which have already been established in a small number of communities. The village committee (led by a traditional village leader) is responsible for preparing DRM plans and procedures based on location-specific risk and vulnerability analysis and comprehensive hazard mapping for their respective locations. In case of an emergency, village committees have the operational responsibility to ensure that support is provided to the most affected households.

Non-governmental Organizations (NGOs) are active in all 17 provinces of Lao PDR and have been recognized as important partners in DRM. Their operational strengths include their ability to respond more flexibly and quickly to urgent needs in communities affected by disasters. A group of NGOs in Lao PDR have created a Disaster Risk Management Working Group aiming to: (i) facilitate knowledge management; (ii) document lessons learned; (iii) collaborate with all DRR stakeholders; (iv) develop joint action programming; and (v) work in a coordinated manner with the Government of Lao PDR and other risk reduction stakeholders.

¹³ Each Provincial Disaster Management Committee is chaired by the office's Governor and an appointed officer responsible for the coordination of disaster management activities in the province. At district level, District Disaster Management Committees consists of a district representative as the chairperson and members from all district level department heads, Non-governmental Organization leaders and civil society members. The committees are required to meet on a bi-monthly basis (or as often as necessary during emergency situations).

Various **United Nations (UN)** agencies' country representations play a crucial role in technically and financially supporting the Lao Government in DRM programmes, in addition to responding to humanitarian crises. They participate in several fora, sharing information and experiences and addressing issues such as natural disasters, climate change, food security and environmental protection.

The **Inter-Agency Standing Committee (IASC)** is responsible for ensuring the coordination of activities between various government ministries and the humanitarian agencies working in Lao PDR to prepare for, respond to and mitigate emergencies and disasters¹⁴. Endorsed by IASC in 2013, the IACP is employed by several country teams, including UN agencies, international NGOs and the International Federation of the Red Cross and Red Crescent Societies (besides the relevant government agencies). These teams focus on different components in emergency response actions (Humanitarian Country Team, Inter-Cluster Coordination Group, Emergency Task Force, the Information Management Network and Provincial Focal Points) and cover various thematic areas (Health, Water, Sanitation and Hygiene, Food Security, Nutrition, Education, Shelter, Protection, Early Recovery, Logistics, Information, Communications and Technology). FAO and WFP have been assigned as the Cluster Lead Agencies of the Food Security Cluster, and the Ministry of Agriculture and Forestry (MAF) and MLSW are the designated Government linkages.

The Lao Red Cross (LRC) was established in 1955 and consists of a national office, 17 provincial branches and 47 district offices. The president of the LRC is a member of the NDPCC. At the central level, the national office communicates directly with the NDMO, the provincial branches coordinate with PDMCs and the LRC district coordinators act as members of DDMCs. Community-level activities have been implemented by the Villages Disaster Management Committees (VDMCs) and other voluntary members since 2004. LRC programmes cover disaster preparedness, risk reduction and emergency response, targeting the most vulnerable people nationwide. These programmes are responsible for the dissemination of early warning information, rapid assessments and the provision and distribution of emergency relief supplies.

¹⁴ *The Inter-Agency Standing Committee is co-chaired by the Director of the National Disaster Management Office (NDMO) and by the Head of United Nations Resident Coordinator's Office. The Deputy Chair is held by a selected in-country United Nations agency.*

Key stakeholders for disaster risk reduction and management in agriculture

The Ministry of Agriculture and Forestry

According to its mandate, the Ministry of Agriculture and Forestry (MAF) is responsible for agricultural development as a whole, contributing to national economic growth, poverty reduction and enhancing farmers' living standards. Administrative and supervisory responsibility is divided across four departments, each of which is respectively in charge of the formulation and planning of policies and strategies, monitoring and evaluation, resource allocation and management of human resources. Further technical line departments include the Department of Agriculture (DoA), Department of Livestock and Fisheries (DLF), Department of Forestry (DoF) and Department of Irrigation (DoI). Moreover, MAF contains two main technical institutions at national level: (i) the National Agriculture & Forestry Research Institute (NAFRI); and (ii) the Department for Agricultural Extension and Cooperatives (DAEC), formerly known as the National Agriculture and Forestry Extension Service.

DRR concepts and processes have not yet been systematically integrated into this established institutional structure, although an appointed disaster management focal person from MAF is Vice-Chair of the NDPCC. The Vice-Chair's responsibility is to ensure that a sectoral risk assessment is conducted and a risk reduction action plan is prepared involving all MAF departments, as well as providing a budget to support the implementation of the plan. In this regard, MAF is responsible for developing research programmes for hazard analysis in the agricultural sector. In terms of emergency preparedness and response, MAF is in charge of the promotion of joint relief interventions, including the provision of agricultural seeds and livestock inputs to disaster-affected communities. Its role further includes supporting trainings on DRR approaches in the agriculture and forestry sectors and undertaking awareness raising initiatives among communities regarding the importance of DRR for resilience building in agricultural development.

At the provincial and district levels, Provincial and District Agriculture and Forestry Offices (P/DAFOs) operate in 17 provinces and 142 districts. The DAFOs are connected to villages, village workers, farmers and farmers' groups and associations. Their responsibility is to provide technical assistance to farmers for agriculture activities or the control of crop pests and livestock diseases. The different sections (provincial level) and units (district level) of the decentralized Agriculture and Forestry Offices are involved in DRRM-related interventions. In regards to prevention and mitigation measures, permanent services include the introduction of livestock and farming techniques (drought- and flood-resistant rice varieties or advice on animal health and vaccination), observation and control of animal diseases

and the enforcement of standards for the construction of irrigation schemes. During and after disasters, the offices conduct post-disaster needs assessments (PDNAs), disseminate early warnings and provide equipment, basic food needs and seeds and/or small livestock for the replanting of damaged crops and protection of livelihoods and food security in affected communities.

The Ministry of Natural Resources and Environment

The Ministry of Natural Resources and Environment (MoNRE) was created in 2011 (through Prime Minister Decree No. 435 [28 November 2011]) when the Water Resource and Environment Administration (WREA) was merged with relevant departments of the National Land Management Authority and relevant portfolios of other ministries, including the Geology Department and the Forest Conservation Divisions within MAF. At national level, the Cabinet Office makes up the institution's core, with 12 departments operating around it¹⁵. Particularly relevant for DRRM and CCA in agriculture are two departments: the previously- mentioned DDMCC¹⁶ and the Department of Meteorology and Hydrology (DMH). At sub-national and local levels, Provincial and District Offices for Natural Resources and Environment (P/DONREs) have been established, but do not follow the same organizational structure of those offices at central level.

The **Department of Meteorology and Hydrology (DMH)** was established in 1950 as the sole national service provider for weather, climate, water and earthquake data/information, forecasts and early warnings. From the time of its establishment, the DMH has operated under three different ministries and one administration. Since 2011, the DMH operates under MoNRE and is composed of eight divisions. For enhanced DRRM and EWS in agriculture, the Climate and Agro-Meteorological, Hydrology and Weather Forecasting Divisions are of particular relevance. The DMH serves as a member of the NDMC with the overall responsibility of providing hydrometeorology early warning information services countrywide and real-time meteorological and geophysical data collection and data exchange. This includes analysing data to issue daily forecasts, weekly and monthly outlooks, warnings for any approaching events that might cause damage and losses of life and property and the dissemination of such warnings to relevant users

¹⁵ These include the Departments of: Organization and Personnel; Inspection; Planning and Cooperation; Land Use Planning and Development; Land Management; Water Resources; Environmental Quality Promotion; Pollution Control; Forest Resources Management; Geology and Minerals; Hydrology and Meteorology; Natural Disaster and Climate Change Management. The ministry also hosts the Social and Environmental Impact Assessment Service, the Institution for Natural Resources and Environment, the National Mekong River Commission Secretariat and the Environmental and Natural Resources Information Centre.

¹⁶ The Department of Disaster Management and Climate Change (DDMCC), which has recently been assigned to act as the secretariat of the NDPCC, has taken over NDMO's mandate (Prime Minister Decree [28 August 2013] supersedes Decree No. 373 [21 October 2011]). Its specific tasks and operations, as well as representation at sub-national level, have not yet been clearly defined.

(e.g. in aviation, agriculture, transport, etc.). The DMH further analyses, compares and publishes data for appraisal of long-term weather and seismographic trends and analyses extreme events observed in the past to project their future trends (e.g. climate change, weather modification, land-ocean-atmosphere interaction, seasonal weather prediction).

MAF and MoNRE place high importance on coordinated planning and identified the need for a stronger integration of CCA and DRRM into related strategies, plans and programmes. This integrated planning approach is also reflected in the recent institutional changes linked to the government's overall reform strategy for agencies dealing with environment, water resources, climate change and weather in an integrated manner – now jointly addressed under the DDMCC of MoNRE.

04 Strategic direction for enhancing disaster risk reduction and management in the agricultural sector

The overall strategic direction for enhancing DRRM in the agricultural sector is embedded in Lao PDR's commitment to international frameworks and participation in international partnerships for DRM, as well as their country-specific implementation guidelines, which are in line with national priorities for agricultural development. With the adoption of the HFA at the World Conference on Disaster Risk Reduction in Kobe in 2005 and the signing of the Delhi Declaration on Disaster Risk Reduction in Asia 2007, the Government of Lao PDR recognized DRR as a key priority requiring a proactive, integrated approach to DRM linked to poverty reduction, food and nutrition security and the emerging challenges of climate change.

The overall strategic direction of this Plan of Action for DRRM in Agriculture is to promote an enabling environment for DRRM in agriculture based on legal instruments, policies and frameworks, as well as strengthened institutional capacities to implement these tools in agriculture, livestock, fisheries/aquaculture and forestry for food and nutrition security. One key component of the strategic direction for comprehensive DRRM in agriculture is to encourage a supportive working environment among all involved key stakeholders through dynamic partnerships between politics, science, civil society and the private sector. This Plan of Action therefore addresses donor agencies and development partners to assist MAF, MoNRE and the NDMO in building the institutional capacities and technical skills needed to move towards proactive DRRM in the agricultural sector, linking to CCA and NRM.

The Plan of Action on DRRM in Agriculture is intended to support this future direction. It provides a road map for MAF and key partners to operationalize the process towards a proactive approach in managing natural hazards and risks by emphasizing the benefits of mitigation, prevention and preparedness in both short-term (DRM) and long-term (CCA) planning. More concretely, the Plan of Action has consolidated identified needs and priorities for the integration of enhanced DRRM into specific actions for the agricultural sector. The plan proposes a range of key areas of work, and within each of those, puts forth a cluster of priority activities that are likely to show immediate impacts and help reduce the risks and exposure

of vulnerable people and assets to damage and losses, or address the underlying aspects of vulnerability.

The Plan of Action for DRRM does not replace existing policies and strategies related to agriculture, emergency response or climate change; it draws upon key priorities already embedded in existing policies, strategies and plans (outlined in Chapter 2 of this document) and identifies additional priorities and working mechanisms where necessary to assist MAF and other relevant line ministries and partners to realize their policy objectives related to DRRM in the agricultural sector. Overall, the strategic focus for DRRM in agriculture aims to address and support the long-term development goals and priorities of the 7th NSEDP and the Strategy for Agricultural Development. It further seeks to be in accordance with the objectives and actions of the DRAFT National Disaster Management Plan to create a more disaster-resilient nation.

The Plan of Action will further enhance complementarities between agricultural development, DRRM and CCA. Expected linkages, mutually supportive actions and co-benefits between the Priority Areas (PAs) of this Plan of Action for DRRM in Agriculture and the most relevant existing strategies and plans are outlined in **Table 3**.

Table 3: Linkages between existing strategies/plans with the Plan of Action for DRRM in Agriculture

Existing Strategy or Plan	Relevant Component	Linkage to Plan of Action
Strategy for Agricultural Development	Main thrust of addressing risks.	PA I-IV
AMP	Promotion of several proven and advanced agricultural practices for building resilience of rural livelihoods to disaster risks and climate change under Programmes 1, 3, 4, 5 and 7 (as stated in the AMP in paragraphs 33, 34, 85, 86-88, 132, 156-160).	PA IV
7th NESDP	Legal frameworks and sectoral strategies on DRM; control of forest fires, droughts, floods, erosion of rivers and denuding of mountains.	PA I, IV
IACP	Improving tools and strengthening capacities for enhanced preparedness and response in the agriculture sector.	PA V
Strategic Plan for DRM	DRM Plans and platform multi-hazard EWS awareness raising mainstreaming DRR preparedness for effective response community-based DRR	PA I PA II PA III PA IV PA V PA IV
NAPA	Sections 3.1. (joint CCA/DRR objective) and 3.2. (adaptation measures) of NAPA, particularly several actions for the agriculture sector.	PA IV
NSCC	Adaptation options for agriculture and food security, forestry and land-use change and water resources.	Mainly PA I, III, IV
DRAFT Action Plan on Climate Change	Key initiative 1 (CCA planning) Key initiative 2 (adaptation options) Key initiative 4 (awareness raising)	PA I PA IV PA III

05 Plan of Action for Disaster Risk Reduction and Management in Agriculture 2014–2016

The Plan of Action for DRRM in Agriculture was developed at the request of the Government of Lao PDR through a process of consultation and engagement led by MAF, with technical and facilitation support provided by FAO. A **Technical Support Team (TST)** was established to support the creation of the plan, composed of experts from several departments within MAF, together with NAFRI, the NDMO of the MLSW and the DDMCC and DMH of MoNRE. The plan was designed to guide the implementation of a proactive approach to DRRM within the agricultural sector over a period of three years (2014–2016) to contribute to the achievement of the following **long-term vision** for DRRM in agriculture:

Prevent and reduce the impacts from natural disasters and climate change on farming communities and the agricultural sectors, and contribute to enhanced resilience of livelihoods for sustainable and fair food and nutrition security in Lao PDR.

The Plan of Action is a tool for translating the vision of DRRM in agriculture into doable actions, and thus contributes to ensuring that sustainable, food secure and climate-proofed DRRM interventions contribute to the resilience of farming communities and the agricultural sectors in Lao PDR. It builds on existing institutional mechanisms and mandates to systematically address the impacts of natural and biological disasters (including climate change) on agriculture, livestock, fisheries/aquaculture and forestry. It will catalyse links between DRRM, CCA and sustainable NRM, and reinforce agricultural development with a strong institutional basis for implementation.

While capacity development under this plan targets both the Government and farmers, the main target groups to be supported through its implementation will be mainly farmers and vulnerable groups dependent on agricultural production, with special consideration given to women, youth and communities that are regularly affected by multiple hazards (particularly floods, droughts, storms) and related risks such as landslides) or cascading risks.

Objectives of the Plan of Action

1. The immediate objectives of the plan over the next three years are to:
2. Ensure that DRRM will be fully integrated into the planning for sustainable agricultural development, and fosters synergies with related policies and strategies at all levels.
3. Strengthen capacities of institutions and communities for enhanced planning, coordination and implementation of DRRM activities for food and nutrition security.
4. Raise awareness and provide information, including on indigenous knowledge on sustainable environmental management and DRRM, and promote education at all levels to strengthen resilience and reduce disaster risks.

Structure of the Plan of Action

The Plan of Action for DRRM in Agriculture is designed along the five **Priority Areas** of the HFA (see summary chart in Annex II). These Priority Areas include: Strengthening good governance, institutional and technical capacities for DRRM and CCA in agriculture.

1. Assessing and monitoring climate risks and vulnerabilities and issuing early warnings for food and nutrition security and transboundary threats.
2. Improving knowledge management, awareness raising and education on DRRM, climate change impacts and adaptation.
3. Reducing underlying risks and vulnerabilities by promoting technical options and community-based planning for DRRM/CCA in the agriculture sector.
4. Enhancing capacities, facilities and procedures for effective disaster preparedness and response, and integrate climate change adaptation in recovery initiatives.

Under each of the five HFA Priority Areas, a limited number of thematic clusters for action were defined, which are of high strategic importance at this stage to further strengthen DRRM in the agriculture sector. Each cluster contains a group of activities, selected and prioritized during the consultation process by MAF departments according to their overall importance for DRRM in agriculture and potential for immediate impact. The activities range across all agriculture sub-sectors established under MAF responsibilities (agriculture, livestock, fisheries/aquaculture and forestry). In total, 45 actions focusing on DRRM in agriculture have been identified, from which 24 actions are considered to have the highest priority

to “kick-off” systematic implementation in the next three years. Nine additional actions have been identified to link the sectoral with an overall cross- sectoral DRRM system. While the majority of the actions span across all agriculture sub-sectors, some address a specific sub-sector such as livestock, forestry or fisheries.

Guiding principles

The following principles guided the design of the plan and shall guide its implementation to ensure inclusiveness, ownership, continuity and a balanced value-added for all concerned stakeholders:

1. Build on and seek synergies with existing processes, strategies, projects¹⁷, tools and capacities.
2. Connect national and local priorities and implementation approaches.
3. Focus on support to enhance resilience of smallholder farmers and communities most vulnerable to hazards and threats.
4. Apply landscape and agro-ecosystems perspectives to implementation (as appropriate).
5. Link short- to medium- and long-term targets.
6. Ensure equal participation of concerned stakeholders and the public in planning and implementation processes.
7. Provide supportive collaboration across agriculture sectors to fulfil respective roles.
8. Give priority to information sharing and public awareness.
9. Ensure the continuous allocation of financial resources for DRR.
10. Build mechanisms for monitoring, follow-up, evaluation and feedback.

¹⁷ Please refer to Annex III.

Priority Area I: Strengthening good governance, institutional and technical capacities for DRRM and climate change adaptation in agriculture.

Objective

Mainstream DRRM and CCA planning, programming and coordinated implementation within and across the agriculture sector.

Gaps and needs

Although MAF has initiated the integration of DRRM into its operations, there is no specific unit/technical division responsible for climate change and DRRM activities at the central level, nor are CCA and DRRM issues included in the terms of reference (ToR) for technical officers.

Since the appointment of the new responsibilities in DDMCC (operated by MoNRE) in 2013, the official handover of the DRM mandate has not yet been completed and some decisions still need to be made regarding specific responsibilities related to DRRM among key stakeholders. Only a few institutional linkages and coordination mechanisms have been established with other related departments in the MAF and MLSW. The mainstreaming of DRRM into agricultural development will require clear definitions of DRRM and CCA tasks and responsibilities within MAF, as well as enhanced partnerships and networks with other stakeholders, particularly MoNRE and NDMO, in support of a comprehensive overall DRM framework.

DRM Plans, which include actions to be taken in regards to the agriculture sector, are in place at the decentralized level and available on request in seven provinces (Attapu, Khammouan, Salavanh, Savannakhet, Vientiane, Xaignabouli and Xekong), with an estimated two to five District DRM Plans per province; however, awareness of the existence of these plans and their contents in the technical departments within MAF at central, provincial and local levels is relatively low. In order to make these plans effective there is a need for (i) mainstreaming DRM activities into the agricultural development plans at all levels (this must be done in all hazard-exposed provinces and districts); (ii) enhanced capacity development, particularly at decentralized levels; and (iii) adequate financial resources for implementation by P/DAFOs, P/DMCs and P/DONREs. This also applies to the Committees on Flood and Drought Prevention established in several P/DAFOS, which lack the official mandates, human resources and funding needed to be operational.

Strategy

Strengthen national, sub-national and local capacities for DRRM in the agriculture sector, and promote inter-institutional collaboration in and between MAF, MoNRE and the NDMO for integrated planning, programming and implementation of DRRM and CCA within and across the agriculture sector.

Actions

Description of Main Activities	Main Responsibility	Supporting Roles	Priority Status
Thematic Cluster: Capacity development, collaboration and coordination at all levels for integrated planning and programming of DRRM/CCA within and across the agriculture sector.			
1.1. Formalize an inter-departmental technical working group (TWG) for DRRM/CCA within MAF comprised of members from NDMO and the DDMCC and a nominated focal point at national level; this includes formulation of the TWG's ToRs and formulation of a technical guidance note to promote the mainstreaming of DRRM/CCA into sectoral planning.	MAF: Department of Planning and Cooperation (DoPC), Department of Personnel.	MoNRE: DDMCC, DMH; MLSW: NDMO; MAF: All technical departments.	Immediate priority
1.2. Establish and resource a national trainers team (NTT) through training of trainers (ToT) in MAF and MoNRE to promote (i) DRRM/CCA planning, (ii) the use of climate data in sectoral planning, (iii) advocacy for DRRM/CCA at all levels and (iv) DRRM in farmer field schools (FFS); this should be accompanied by the development of a new training curriculum for DRRM/CCA planning and delivery in MAF sub-sectors.	MAF: DoPC; MoNRE: DDMCC.	MoNRE: DMH; MLSW: NDMO; MAF: All technical departments.	Immediate priority
1.3. Integrate DRRM and IWRM into Participatory Land Use Planning and Agricultural Development Plans at provincial and district levels.	P/DAFOs, P/DDMCs.	MoNRE; MAF: DoI, DoF.	Immediate priority

1.4. Develop a strategy for risk prevention in the livestock sector to promote, and set-up permanent DRRM/CCA interventions with a focus on disease surveillance and outbreak early warning, vaccinations, animal fodder production and emergency fodder reserves.	MAF: DLF.	MAF: DoPC; Ministry of Investment and Planning (MPI); Ministry of Health; National Steering Committee for Avian Influenza.	Immediate priority
1.5. Enhance capacities in MAF to integrate monitoring and evaluation of DRRM/CCA into existing agricultural monitoring and evaluation (M&E) systems.	MAF: DoPC; MoNRE: DDMCC.	MAF: All technical departments.	
1.6. Promote cross-sectoral collaboration mechanisms for DRRM in MAF, including key partners at central, provincial and district levels.	MAF: All technical departments.	MoNRE; MPI; Ministry of Public Work and Transportation (MPWT); MSLW; P/DMCs.	
Thematic Cluster: Capacity development at sub-national, district and community levels for effective implementation of DRRM/CCA in agricultural development.			
1.7. Provide training on DRRM/CCA to PAFOs, DAFOs and agricultural research centres (refer to actions 1.2. and 4.7.).	MLSW: NDMO, P/DMCs MAF: Decentralized offices.	MAF: All technical departments; MoNRE: DDMCC.	Immediate priority
1.8. Develop and implement operational guidelines for MAF to promote community-based disaster risk reduction and management (CBDRRM) initiatives, including for capacity development in CBDRRM and community-based adaptation in existing FFSs and farmers' cooperatives with the long-term objective of developing a national CBDRRM programme.	P/DMCs; MAF: Decentralized offices.		Immediate priority
1.9. Allocate more human and financial resources for DRRM/CCA issues to DAFOs at district and community levels.	MAF: DoPC.	MPI; Ministry of Home Affairs (MoHA).	

Priority Area II: Assessing and monitoring climate risks and vulnerabilities and issuing early warnings for food and nutrition security and transboundary threats.

Objective

Upgrade climatic risk and vulnerability assessment tools and methods, provide agro-climate information products along agricultural cropping cycles and ensure timely delivery of hazard-specific early warnings targeted to the needs of farmers and other agriculture-dependent communities.

Gaps and needs

Currently, DMH provides regular weather forecasts and warnings and has established partnerships, in particular with NAFRI, to convert these warnings into advice for farmers in selected provinces. However, the EWS remains relatively weak in terms of issuing reliable, timely and warnings to specific sectors and to reach communities at risk.

DMH has identified a high demand for expanding the current information network to collect location-specific climate data and improve access to the latest tools and methods at all levels (e.g. the geographic information system [GIS] and information technology facilities) to enhance their capacity in developing climate scenarios and improving forecasting and agro-meteorological services. Historic climate data exists since 1986, but no observations or analyses have taken place due to lack of funding, capacities and facilities. DMH maintains an informative Web site which needs to be updated on a more regular basis with forecasts and the description and development of more non-scientific but end-user friendly graphs.

The NDMO expressed the need for more human resources to develop and maintain a permanent Web site, as they currently issue warnings through their Facebook page. In the future, the shift of this mandate to the DDMCC should be one of the priorities in defining a clear strategy for early warnings. Many villages have loudspeakers that are used to reach communities at risk; however, a warning can take up to two days to reach remote villages because many farming villages are not yet connected to the electricity grid, and advanced technologies such as mobile phones are not commonly used to disseminate warnings.

A comprehensive national risk profile has been developed including a multi-hazard approach, but in order to be fully applicable to sectoral planning, the risk profile needs to be further elaborated by analysing sector-specific risks. The established DesInventar database (hosted by the DDMCC) provides a suitable basis for

analysing risks, but should be further developed and upgraded regularly to include more information from district and household levels.

Together, the DMH and MAF have initiated the translation and pilot-testing of climate information products into impact outlooks and alternative management strategies relevant to farmers. In the future, these agro-climate advisory tools can be further improved through enhanced location-specific information and wider coverage of all hazard-prone provinces. Agreements addressing the current price policy and the sharing of climate data between technical departments in DMH and MAF are important to further mainstream the regular application of climate data and forecasts into MAF's standard operations.

In the livestock and fisheries sectors, some basic veterinary services are in place. DLF identified the need for more financial resources, facilities and technical capacities to improve virus detection and fish disease surveillance. Some partnerships for transboundary threat surveillance and prevention have been established for different hazards (e.g. fire prevention between Houaphanh Province, Lao PDR and Thenghoua Province of Viet Nam; Lao PDR's participation in the regional Emergency Centre for Transboundary Animal Diseases [ECTAD] programme; Mekong River Commission [MRC] for water management and flood prevention), but these should be further strengthened and expanded.

Strategy

Further promote institutional and technical capacities of MAF technical departments to participate in and contribute to existing transboundary networks and partnerships, and enhance national surveillance and EWS capacities related to transboundary threats and risks. DMH will foster the generation and improved use of weather and climate information, and upgrade existing mechanisms, resources and tools at all levels to provide timely and actionable information and early warnings for the agricultural sector. Key for the effectiveness of EWS is to reach out to rural communities through improved dissemination of agriculture-specific weather information and warnings jointly developed by DMH and MAF. To inform decision-makers on timely action and long-term planning, the strategy aims to further strengthen capacities for conducting vulnerability and risks assessments in DAFOs, DDMCC and NDMO, as well as climate analysis and modelling in DMH.

Actions

Description of Main Activities	Main Responsibility	Supporting Roles	Priority Status
Thematic Cluster: Development and upgrading of mechanisms, resources and tools at all levels to provide, and timely disseminate agro climatic forecasts at different time scales, and early warning information tailored to the needs of the agriculture sector.			
2.1. Develop SOPs for regular and timely transmission of seasonal, monthly and weekly weather and climate information and early warnings from DMH to MAF departments, and for the interpretation and use of the data in MAF to inform sectoral planning and provide regular guidance for extension workers, farmers, foresters, fishers and herders.	MoNRE: DMH; MAF: NAFRI, DoI.	MAF: Decentralized offices.	Immediate priority
2.2. Strengthen technical capacity of the Agro-meteorological Division in DMH and MAF departments to translate climate and weather data into operational advice for agriculture, livestock and fisheries workers, and equip them with the facilities and resources needed to develop seasonal, monthly and weekly agriculture and weather information bulletins.	MoNRE: DMH; MAF: NAFRI.	MAF: Decentralized offices.	Immediate priority
2.3. Enhance and formalize communication and collaboration mechanisms between central and local levels in MAF to regularly disseminate agriculture-specific weather information bulletins and early warnings as needed (testing effectiveness of different media such as internet, TV, radio, newspapers, posters, phones [frontline Short Message Service], advisory boards).	MoNRE: DMH, DDMCC; Natural Resource Information Centre; MAF: NAFRI.	P/DAFOs; P/ DMCs ; MLSW: NDMO ; MAF: Permanent Secretary Office.	Immediate priority
Thematic Cluster: Surveillance and EWS capacities for transboundary threats; promoting active participation and stronger involvement in transboundary networks and partnerships.			
2.4. Promote linkages and knowledge exchange with regional networks (such as AADMER, ECTAD, MRC and the Regional Integrated Multi-Hazard Early Warning System); enhance national surveillance capacities (including equipment) for transboundary disasters: floods, plant pests and livestock/fish diseases (refer to 6.4.).	MAF: DLF, DoA.	MoNRE: DMH.	

2.5. Develop capacities to apply good practices, standards and methodologies in threat monitoring and prevention of crop pests that are associated with the occurrence of natural disasters and climate change.	MAF: DoA, DLF, NAFRI.	MoNRE: DMH.	
2.6. Reactivate the laboratory services in DLF for fish disease surveillance and virus detection.	MAF: DLF.		
Thematic Cluster: Capacity development for sector specific vulnerability and risks assessments, climate analysis and modelling.			
2.7. Complete risk and vulnerability mapping for the agricultural sector (main crops, irrigation, livestock, fisheries, forestry) for Lao PDR, including natural and man-made hazards (IWRM) at district and community levels; this implies building on and complementing existing maps, and training P/AFOs, P/DMCs and P/DONREs on vulnerability/risk assessment, mapping methodology, use of databases and GIS.	MAF: Decentralized offices; MLSW: NDMO; MoNRE:DDMCC.	MAF: NAFRI, technical departments; MoNRE: DMH; LRC; MoD; MPI.	Immediate priority
2.8. Analyse the impacts of previous floods, droughts and changing rainfall patterns on the agriculture sector; adjust/update crop calendars in view of climate change.	MoNRE: DMH; MAF: NAFRI.	MAF: Technical departments.	Immediate priority
2.9. Develop capacities and provide required facilities and resources to DoA to produce accurate market price information for agriculture products.	MAF: DoA, DLF, NAFRI.	Ministry of Industry and Commerce (MoIC): National Economic Research Institute (NERI).	

Priority Area III: Improving knowledge management, awareness raising and education on DRRM, climate change impacts and adaptation.

Objective

Knowledge improved and awareness raised about disaster risks, prevention and climate change adaptation options for agriculture and related sectors to build a culture of innovation and resilience.

Gaps and needs

Although the impacts of climate change and natural disasters have been recognized in several sectors, there is still a lack of knowledge and low awareness about the main risks, possible solutions and DRRM policies for the agriculture sector. While DRRM and CCA are at the initial stage of being integrated into agricultural education programmes, the common perception of DRRM is still geared towards emergency response. This refers to the general public, but also to technical officers and decision-makers in the line departments and ministries, particularly at provincial and district levels. The identification of proactive and location-specific DRRM interventions is hampered by limited knowledge about effective prevention options and their benefits.

Strategy

Promote communication strategies using existing and new tools (see examples in the list in Annex III) and information dissemination to raise awareness of key DRRM stakeholders in MAF, related sectors and rural farming communities for proactive DRRM planning and risk prevention options in agriculture. Information and knowledge management on disaster risks for sectoral planning should be further improved for enhanced long-term decision-making in agriculture to ensure sustainability of interventions.

Actions

Description of Main Activities	Main Responsibility	Supporting Roles	Priority Status
Thematic Cluster: Communication strategies and tools to raise awareness of key DRRM stakeholder for proactive DRRM planning in agriculture.			
3.1. Design and implement an awareness raising campaign within MAF and key partners at all levels, particularly in decentralized offices, on (i) the contents and value-added of preventive actions for DRRM (and its linkages to response); and on (ii) location/agro-ecosystem specific measures promoting DRRM and resilient agricultural development.	MAF: DoPC.	MAF: DoA, DoI, DLF, NAFRI, DAEC; MoNRE: DMH.	Immediate priority

<p>3.2. Establish an improved information network/communication strategy between MAF, its decentralized offices and across technical departments to serve as an internal end-to-end feedback loop on DRRM policy and action plan implementation; this implies defining specific roles and tasks for information sharing and reporting on DRRM achievements in agriculture. This network should use cost-effective instruments such as emailing lists and online information sharing/management tools to facilitate outreach to farming communities at risk.</p>	MAF: DoPC.	MAF: Technical department and decentralized offices.	Immediate priority
<p>Thematic Cluster: Information management and awareness raising of rural communities on disaster risks and prevention options.</p>			
<p>3.3. Establish a national data portal on hazards, impacts, vulnerabilities, tools for disaster risk analysis, monitoring and contingency planning and damage assessments in agriculture, building on and expanding existing databases such as DesInventar (DDMCC) and Decide (MAF).</p>	MoNRE: DDMCC; MAF: All technical departments.	MLSW: NDMO.	Immediate priority
<p>3.4. Document and consolidate proven good agricultural practices in DRRM/CCA for main agro-ecological zones/farming systems in Lao PDR and integrate them into current extension material (“wisdom box”) and databases (e.g. Lao Agriculture Database at Current Agriculture, Food and Resource Issues or Web sites); this includes the translation of imported farm inputs manuals/labels into Lao to ensure eco-friendly application (integrated pest management [IPM]), complementing the material with easy-to-use media tools targeted to the needs of farmers (videos, drawings, posters, etc.) and making them available online.</p>	MAF: DAEC, DoPC, NAFRI; MoNRE: DDMCC.	MAF: All technical departments.	Immediate priority
<p>3.5. Design and implement an awareness raising process for rural households on disaster risks, impacts on agriculture and DRRM measures using simple good practice guidelines, audio-visual material like videos, drawings (comics), songs, etc.</p> <ul style="list-style-type: none"> • Two priority target groups are women (herders) and youth in junior FFS. 	MAF: DAEC, DLF, DoA, DoF.	MAF: DoPC, NAFRI; MoNRE: DMH; Ministry of Education (MoE); Lao Youth Union; Lao Women’s Union.	Immediate priority
<p>3.6. Enhance systematic cooperation and information sharing with international and national organizations and other external partners through annual monitoring and experience exchange meetings on agriculture achievements in DRRM/CCA.</p>	MAF: DoPC, NAFRI.	MAF: All technical departments.	

Priority Area IV: Reducing underlying risks and vulnerabilities by promoting technical options and community-based planning for DRRM/CCA in the agriculture sector.

Objective

Increase local capacity of DAFOs and farmers' groups for DRRM and promote implementation and dissemination of location-specific good practices for DRRM and enhanced resilience of rural livelihoods in flood-, drought- and storm-affected areas in Lao PDR.

Gaps and needs

Good practices, technologies and technical guidance for farmers to increase resilience to climate change and impacts of natural hazards have been tested in several projects, but are only sparsely documented and hardly ever replicated beyond project areas and project termination. At sub-national level, the understanding and actions for proactive DRRM in the agriculture sector include – besides emergency response – some prevention and preparedness measures such as the construction of dikes, stone weirs, water gates and irrigation facilities, and the use of disease- and/or hazard-tolerant rice varieties (e.g. flood- and/or drought-tolerant). However, the primary objective of most measures remains oriented towards production increase; the objective of risk reduction is not yet prominent for decision-making. In addition, the lack of understanding about the local impacts of climate change (positive and negative) has also limited the identification of good practices and improvement of extension services (e.g. IPM). The existing extension material that has been consolidated in a “wisdom box” does not yet include extension material for DRRM/CCA. It must be emphasized that many traditional practices also have high potential to contribute to resilience building in the face of climate change and disaster risks, and that these need to be better documented and replicated, where suitable.

Although NAFRI has developed an advanced knowledge base for technical guidelines and manuals, this information needs to be further promoted and made more easily accessible at community level. Crop calendars exist at national level, but they are not yet downscaled to the level of agro-ecological zones, nor are they annually adjusted to reflect climate variability and change. Furthermore, there is a need to further promote and link to sustainable NRM practices, which create several co-benefits with DRRM and CCA.

FFSs are an excellent mechanism to mainstream DRRM at local level. However, besides project-related activities, no systematic concept has been applied to promote FFS across the country or to include DRRM issues into FFS training curricula. In general, the country has not yet had enough experience with financial instruments

for DRRM such as micro-finance or insurance systems for crops, although there is a high demand for building an enabling environment for risk-mitigating instruments.

Strategy

Facilitate community-based DRRM and adaptation processes and the replication and dissemination of proven approaches, practices and technologies for enhancing resilience (sustainable production intensification, agro-biodiversity and ecosystem-based adaptation) in the most vulnerable communities. This process should be guided by mainstreaming DRRM into local planning for DAFOs, and complemented through strengthened bottom-up policy feedback mechanisms and communication channels between local authorities and farmers.

Actions

Description of Main Activities	Main Responsibility	Supporting Roles	Priority Status
Thematic Cluster: Promotion of risk reducing technologies and practices and their wider replication.			
4.1. Assess use of and adjust existing cropping calendars for specific agro-ecological zones, based on risk assessments and climate variability/ disaster events analysis of past decades (linked to activity 2.7).	MAF: DoA, NAFRI.	MAF: DAEC; MoNRE: DMH.	Immediate priority
4.2. Organize FFSs in selected risk-affected districts on new and traditional risk-reducing practices for multiple hazards (based on local risk assessments and agro-ecological suitability) including: early maturing rice and flood- and drought-tolerant varieties agro-forestry/agro-biodiversity systems inter- and relay cropping (e.g. mung beans and rice) direct seeding systems small water catchments rice fish farming	MAF: DAEC, NAFRI.	MAF: All technical departments.	Immediate priority
4.3. Promote reforestation in areas exposed to high risks of storms and landslides.	MAF: DoF; MoNRE: Forest Resource Management.	MAF: DAEC, NAFRI.	Immediate priority

<p>4.4. Provide ToT to DAFO staff and provide them with a training curriculum for holding FFS on CCA/DRRM for (i) the replication of proven good practices (including advanced cropping methods and timing), (ii) participatory CBDRRM planning (linked to activities 1.2. and 1.7), including farmers' and water users' groups and (iii) the promotion of self-help mechanisms.</p>	<p>MAF: DAEC, DoA, NAFRI.</p>	<p>MAF: Decentralized offices and all technical departments.</p>	<p>Immediate priority</p>
<p>4.5. Promote an alternative strategy for dissemination and replication (extension services) of good agricultural practices for DRRM/CCA, applying the new Lao Extension Approach on pro-poor public-private partnerships (PPPPP).</p>	<p>MAF: DAEC, DoPC.</p>	<p>MAF: Decentralized offices, technical departments.</p>	
<p>Thematic Cluster: Research to further strengthen disaster resilience.</p>			
<p>4.6. Promote further research on seed resistance (e.g. TDK-Sub 1) and early maturing glutinous rice, and on drought-tolerant and pest-and disease-resistant indigenous/local varieties.</p>	<p>MAF: NAFRI.</p>	<p>MAF: DoA, DAEC.</p>	<p>Immediate priority</p>
<p>4.7. Identify and design location-specific irrigation schemes and technologies to reduce risks (drainage and flood control) and develop and distribute practical and simple irrigation guidelines in drought-prone communities.</p>	<p>MAF: DoI.</p>	<p>MAF: All technical departments (including NAFRI).</p>	
<p>4.8. Conduct a feasibility study on agriculture insurance and micro-finance including costs and benefits for risk reduction.</p>	<p>Lao National Bank; MAF: DoA.</p>	<p>MAF: DAEC, DoPC, NAFRI; MPI; MoIC; Ministry of Finance.</p>	

Priority Area V: Enhance capacities, facilities and procedures for effective disaster preparedness and response and integrate climate change adaptation in recovery initiatives.

Objective

Enhance national and local capacities for effective disaster preparedness and response, and promote proactive disaster risk reduction and adaptation measures as part of recovery and rehabilitation programming in the agriculture sector.

Gaps and needs

The procedures for disaster response and recovery have been improved in recent years through the IASC process. However, response interventions still remain rather ad hoc and focus on immediate needs and asset replacement.

Lessons learned from previous response interventions delivered by MAF, such as those for the floods in 2013, should be systematically documented and considered in new rounds of contingency planning. A standardized PDNA is available (combining the human recovery needs assessment and damage and loss assessment approaches), but cannot yet be widely applied in the agriculture sector, because livelihood-related data coverage as needed by agriculture must be further improved. The use of PDNA data for decision-making is progressing slowly, due to the lack of capacity to translate the findings into concrete recommendations and unclear definitions of responsibilities at district level. The speed of decision-making for relief and recovery must increase in order to mobilize and coordinate the provision of aid from central and provincial levels to local communities and victims of disasters.

In terms of seed storage facilities, a limited system exists at national level (5 000 tonnes of rice and 380 tonnes of vegetables) but higher capacities for storage and distribution are needed at provincial level to speed up delivery once needed. In some provinces, livestock emergency shelters exist, but capacities are not sufficient to protect all livestock, although farmers' groups practice self-help mechanisms. The veterinary services provided after disasters cover basic needs, and some villages have access to small vaccine funds, but these services need to be further developed and promoted as a preventive measure to reduce livestock mortality after disasters.

Although insufficient resources are allocated for response and recovery, the annual spending on post-disaster recovery in the agriculture sector is significant; however, the costs of disaster response are expected to be decreased through risk-financing frameworks and the inclusion of "building back better" interventions in post-disaster budget allocations. Although the costs of these interventions have been partially identified, such funding mechanisms have not yet been institutionalized in MAF.

Strategy

Advance and expand tools, capacities and facilities for better preparedness, response and recovery in the agriculture sector. Facilitate effective coordination among the agriculture sector during emergencies and systematize post-disaster needs data collection and transformation into recovery planning in agriculture. Document lessons learned from previous disasters and integrate them into regular contingency planning and promote longer-term disaster risk reduction measures as part of recovery and rehabilitation planning to ensure smooth transitions from emergency situations to sustainable long-term development.

Actions

Description of Main Activities	Main Responsibility	Supporting Roles	Priority Status
Thematic Cluster: Improving tools, capacities and facilities for better preparedness.			
5.1. Build more livestock shelters with enhanced safety standards at district level, and define/demarcate safe routes and areas for livestock evacuation at community level.	MAF: DLE, DAFO.	MAF: DoPC, DAEC, NAFRI.	Immediate priority
5.2. Provide technical advice for knowledge transfer to villagers and VDPUs to promote self-help mechanisms of farming communities for preparedness and recovery through CBDRRM planning, and the establishment and management of decentralized contingency funds for emergency response (refer to 4.4.).	MAF: DAEC, decentralized offices; LRC; P/DMCs.	MAF: All technical departments (including NAFRI); MoNRE: DDMCC.	Immediate priority
5.3. Conduct a pilot study in selected districts to estimate the value of avoided loss and damage in agriculture achieved by the application of DRRM measures, and quantify investment needs for disaster prevention and preparedness as compared to damage and losses.	MAF: DoA; MoIC: NERI.	MAF: DoPC, DAEC, DoI.	
5.4. Develop Community-Based Forest Fire Management Guidelines.	MAF: DoF, Forest Inspection; MoNRE.	MAF: All technical departments (including NAFRI); MoNRE: Forest Resource Management.	
5.5. Improve network (numbers) and safety standards of emergency seed storage facilities at provincial level.	MAF: NAFRI; PAFOs.	MAF: DoA, DLE, DAEC, DoI; PDMCs.	

5.6. Replicate successfully tested micro-emergency funds for vaccination of livestock and provision of fingerlings in a larger number of districts.	MAF: DLF PAFOs.	MAF: All technical departments (including NAFRI).	
5.7. Install/use loud speakers in rural communities for preparedness and emergency warnings and advice, including agriculture and livestock preparedness measures.	MAF: DAEC, DAFOs; MSLW: P/DMCs; Ministry of Information, Culture and Tourism; MPI.	MAF: All technical departments (including NAFRI) MoNRE: DDMCC.	
Thematic Cluster: Improved coordination in emergencies.			
5.8. Create new incentives for the private sector and civil society to participate in helping farmers in affected areas to enhance food security and recovery after disasters.	MAF: DoPC, decentralized offices; P/DMCs.	MAF: All technical departments (including NAFRI); MoHA; Lao Women's Union; Lao Youth Union.	
5.9. Promote an emergency response coordination mechanism in MAF, including all sectors at each level (central, province and district) lined to the P/DMCs through clearly defined roles and communication channels to provide information for relief planning, guide the PDNA and supervise and coordinate the relief goods delivered through the agricultural sector.	MAF: DoPC, decentralized offices.	MAF: All technical departments (including NAFRI); NDPCC; P/DMCs.	
5.10. Collaborate with MoNRE to establish a flexible emergency funding mechanism to include funding for agriculture to pool resources mobilized from different donors and quickly deliver/initiate response and recovery interventions.	MoNRE; MAF: DoPC.	MAF: All technical departments (including NAFRI).	
Thematic Cluster: Improved methods, tools and capacities for post-disaster recovery planning.			
5.11. Organize trainings for national, provincial and district staff on the methods of calculating and assessing losses, damages and needs in the agriculture sector as well as the documentation of lessons learned from disasters and contingency planning with respect to the agriculture sector.	MAF: DoPC; P/DMCs.	MAF: All technical departments, PAFOs, DAFOs; Statistics Bureau.	Immediate priority

5.12. Integrate the forest sector more strongly into sustainable recovery planning (“build back better”) and disseminate seedlings for reforestation and slope protection.	MAF: DoF; MoNRE: Forest Resource Management.	MAF: DoPC, DAEC, NAFRI; MoNRE: DDMCC; MPI.	Immediate priority
5.13. Develop a standardized PDNA form in respect to agricultural-specific data, and guidelines to define best timing and implementation of PDNA from an agricultural perspective based on IACP guidelines and tools.	MAF: All technical departments; IASC; NDPCC.	MLSW: NDMO; MoNRE: DDMCC.	

Proposed actions for linking sectoral and overall frameworks for disaster risk reduction and management

While the previous actions refer to the agriculture-specific DRRM responsibilities of MAF and its key partners, several additional actions have been identified by the TST to ensure that agriculture contributes in a well-coordinated way to the improvement of the national DRM framework, including legal frameworks, resource mobilization and education programmes for DRRM across all sectors.

Although these actions are under the main mandate of other ministries, MAF is committed to providing necessary support from the agriculture sector’s perspective.

Description of Main Activities	Main Responsibility	Supporting Roles	Priority Status
Priority Area I			
6.1. Contribute to partnership building for better advisory and informed decision-making of the NDPCC related to DRRM in agriculture through an inter-ministerial TWG on DRRM and CCA and linkages to research centres for the joint use of capacities (e.g. statistics, GIS).	MoNRE: DDMCC; MLSW: NDMO; MPI.	MAF (NAFRI); MOE; Ministry of Science and Technology; National University of Laos; NERI.	Immediate priority
6.2. Enhance the legal framework for DRRM (law on DRM) through the integration of needs of the agriculture sector for preparedness and prevention.	MoNRE:DDMCC; MLSW: NDMO.	MAF.	Immediate priority

6.3. Enhance capacities for DRRM/CCA in agriculture in the Disaster Management Committees at the provincial and district levels through inclusion of agricultural officers in the Committees and sector-specific DRRM training.	MLSW:NDMO; MoNRE: DDMCC P/DMCs.	MAF: All technical departments; MPI.	Immediate priority
6.4. Strengthen national DRRM/CCA capacities for proactive participation and promotion of agricultural perspectives in AADMER (linked to action 2.4.).	MoNRE: DDMCC; MLSW: NDMO.	MAF.	
Priority Area II			
6.5. Enhance allocation of resources for early warning communication systems and equipment, including for automatic weather stations in high-risk areas.	MoNRE: DMH; MPI.	Decentralized offices of MoNRE and MAF.	Immediate priority
6.6. Improve modelling capacities for water balance and forecasting in DMH's respective divisions.	MoNRE: DMH.	MoNRE: DDMCC; MAF: DoI, NAFRI.	
Priority Area III			
6.7. Educate youth and future generations through the promotion of DRRM/CCA issues as an integrated part of school curricula and agricultural studies at universities and research institutes.	MoE; NUOL: Faculty of Agriculture and Forestry.	MAF: DoPC, all technical departments (including NAFRI); MoNRE: DDMCC, DMH; MLSW: NDMO.	
Priority Area IV			
6.8. Promote DRRM in the context of ecosystem-based adaptation for sustainable development and environmental protection.	MoNRE.	MAF.	
Priority Area V			
6.9. Address institutional bottlenecks for effective decision-making during crises, including definitions of responsibilities for faster response (based on lessons learned from the IASC process, 2013).	NDPCC.	IASC; MAF: DoPC; MoNRE: DDMCC/ MLSW: NDMO; P/DMCS.	Immediate priority

Cross-cutting priorities

The Plan of Action for DRRM in Agriculture prioritizes five cross-cutting issues that underpin the five Priority Areas. These include youth, gender equity, strategic partnerships, communication and capacity development.

Youth

Lao PDR has the youngest population in Southeast Asia with a median age of 21.6 years. Youth possess the greatest potential and opportunity to build a sustainable and resilient culture, not only in regards to agricultural development, but all sectors. Youth issues have therefore been identified as a cross-cutting priority. This Plan of Action aims to address and reflect the needs and interests of youth. Particularly under Priority Area II, III and IV, youth play a crucial role. For Priority Area II, youth can assist in identifying innovative communication strategies for EWS through their assumed higher interest and affinity for new technologies. Under Priority Area III, youth are relevant in terms of educating future generations and including DRRM in agricultural education programmes. In regard to Priority Area IV, young farmers can participate in FFSs and provide technical advice on proven risk-reducing technologies, as the younger generation tends to be more interested and less sceptical towards trying out new practices.

Gender equity

Although women account for approximately 54 percent of those employed by the agricultural sector – specifically in livestock management – their importance and contribution to the national economy have not been fully accounted for. The stronger integration of gender-specific needs into the planning and implementation of DRRM at all levels needs to be ensured along all priority areas. This refers to the provision of training on DRRM by both female and male technical officers and the consideration and inclusion of gender-specific needs in national planning and legal frameworks under Priority Area I. It is further linked to awareness raising initiatives and education under Priority Area III, ensuring information reaches all members of society, particularly women, because they are assumed to play a key role in sharing and applying knowledge among all family members. Under Priority Area IV, gender equity should be promoted through community sensitization on gender roles and responsibilities (e.g. in the framework of CBDRRM activities).

Strategic partnerships

Strategic partnerships are crucial for long-term programmatic implementation of DRRM. The complexity of climate change and DRRM issues calls for cross-sectoral partnerships at all levels. Complementarity and consistency of actions must be ensured across all sectors; formalized partnerships are the basis for planning, coordination, technical guidance, effective allocation of capacities and resources and the implementation of DRRM activities in line with the comparative advantages and

capacities of the various sectors. Under Priority Areas I, II and V, these partnerships refer mainly to enhanced coordination and cooperation among line departments and ministries, development partners, academia, development and humanitarian stakeholders and regional networks. In respect to DRRM implementation at sub-national and local levels, under Priority Areas II to IV, Government-internal partnerships are expected to create mutual cooperation mechanisms between central, provincial and district agricultural and environmental offices for DRRM planning and extension services for farmers. Partnerships at local level with farmers' groups, NGOs and the private sector should further enhance cooperation and services for district offices, farmers and water users' groups.

Communication

Institutionalized two-way communication mechanisms are a cross-cutting priority for informed and transparent cooperation among all key stakeholders for DRRM in agriculture. This includes the information flow for DRRM under Priority Area I, SOPs for climate data sharing and use under Priority Area II, awareness under Priority Area III, bottom-up feedback mechanisms under Priority Area IV and facilitation of decision-making under Priority Area V.

Capacity development

Strategies, plans, methods, tools and practices only achieve impacts once they are applied. Capacity development to catalyze and promote the application of the Plan of Action needs to cover several thematic areas along all Priorities Areas including: planning, mainstreaming and monitoring and evaluation (Priority Area I); research, assessment and modelling and EWS tools (Priority Area II); awareness raising and education strategies (Priority Area III); technology transfer and extension services (Priority Area IV); and post-disaster planning and recovery interventions (Priority Area V).

06 Required institutional mechanisms

Coordination mechanism

Overall coordination for DRRM-related policies is anchored in the mandates of the established bodies and mechanisms as listed in the previous sections. So far, several challenges have been encountered in realizing sectoral DRRM and CCA implementation. There is a need to further clarify and link defined responsibilities for specific tasks and actions before, during and after natural disasters¹⁸.

The current mandates and institutional structures are central to the cross-sectoral coordination needed for the implementation of this plan. Overall decision-making for DRRM at national level is led by the NDPCC and DDMCC, while at provincial and district levels, the PDMCs and DDMCs should take the lead. The responsibility to oversee and guide the implementation of the sectoral Plan of Action, however, should belong to MAF; the Project Steering Committee and TST in MAF, which have already led the planning process for the Plan of Action, could be entrusted with this task.

In order to support and complement the already-existing institutional arrangements, additional coordination, collaboration and communication mechanisms are required for the effective implementation of the Plan of Action, as already identified and integrated in several proposed actions in the previous section, such as those outlined in **Table 4**.

¹⁸ *The current shift of the NDMO's mandate to the DDMCC under MoNRE represents a new chance to reorganize and build up a sustainable and effective coordination structure. For this to succeed, close collaboration and assistance in the handover and capacity development in the new department are essential. In this regard, collaboration with MAF aims to support this institutional structure with input from the agriculture sector.*

Table 4: Overview of communication and coordination mechanisms

PA	Coordination/Communication Mechanism	Intra-sectoral	Inter-sectoral	Inter-ministerial	Inter-agency
PA 1	Inter-departmental TWG on DRRM/CCA within MAF		✓		
	TWG on DRRM/CCA between ministries			✓	
	M&E for national and international progress reports on DRRM		✓	✓	
PA 2	SOPs for regular transmission of weather and climate information		✓	✓	
	Communication and collaboration mechanism between central and local authorities to disseminate agriculture-specific weather information and early warnings	✓	✓	✓	
	Knowledge exchange with regional networks	✓	✓	✓	✓
	Information network/communication strategy between national and local offices and across technical departments	✓	✓		
PA 3	Trustworthy, coordinated national database system	✓	✓	✓	✓
	Communication strategy for local-to-national feedback mechanism on policy and action plan implementation	✓	✓	✓	
	Systematic cooperation and information sharing with international and national organizations and other external partners	✓	✓	✓	✓
PA 4	Better collaboration mechanism and partnerships between local authorities and farmers	✓	✓		
PA 5	Effective networking and information sharing between ministries and development partners	✓	✓	✓	✓
	Coordination and communication during emergencies through enhanced emergency response mechanisms in MAF	✓	✓	✓	
	Coordination for flexible emergency funding mechanism	✓	✓	✓	
	Develop a standardized PDNA	✓	✓	✓	✓

Additionally, the national Round Table Process (RTP) including its sectoral sub-groups should be considered as an excellent opportunity to inform, discuss and coordinate progress, challenges and successes in the plan's implementation, as it involves concerned key stakeholders from a programming and technical point of view. The RTP also opens up the space to share DRRM lessons learned beyond the agriculture sector, because it brings together all relevant Government stakeholders and external partners to discuss the strategic direction of national development, and provides a platform for generating and sharing knowledge, ideas and solutions, as well as enhancing cross-sectoral collaboration. Currently, ten Sector Working Groups (SWGs) have been formed, which in turn are divided into several sub-sector working groups¹⁹. The two most relevant SWGs for this plan are the "Agriculture and Rural Development" and "Natural Resource Management and Environment" groups.

In order to stimulate a dynamic and supportive working environment within and across departments, ministries and development partners, and ensure success of the Plan of Action, the TST has identified seven categories of interaction, which need to be addressed simultaneously in order to enhance collaboration and/or communication/coordination among the respective departments and ministries. These include:

Technical support: Refers to vertically existing institutional structures to enhance technical support by DAFOs and DONREs for farmers and VDPUs. For the future operations of DDMCC, technical support related to agriculture and sustainable NRM from central level for district offices will be needed to "downscale" the DRM/CCA mandate of the DDMCC to local levels. As proposed under this plan, an inter-departmental TWG for DRRM/CCA within MAF (see action 1.1.) is expected to fill the gap for enhanced technical support for high-level decision-making in agricultural development and DRM (e.g. MAF's focal point for DRM).

Planning support: Refers mainly to horizontal support among the decentralized offices of MAF, MoNRE and P/DDMCs to ensure integrated planning and efficient use of capacities, and to joint actions addressing synergies between agriculture and NRM as well as DRM and CCA.

Advisory: Refers mainly to enhanced advice from district offices (MAF and MoNRE) and VDPUs to farmers' groups and farmers for enhanced disaster mitigation, prevention and preparedness.

¹⁹ *The Sector Working Groups serve as fora to inform, discuss and agree on development priorities, and improve sectoral aid coordination and effectiveness and provide a platform for various stakeholders including representatives from the Government, development partners, civil society, private sectors and others.*

Information exchange and coordination: Refers to horizontal coordination among departments and ministries and vertical coordination among district, provincial and central offices of MAF and MoNRE and external partners such as academia, as key partners to ensure efficient, cross-sectoral and integrated planning and implementation of DRM in agriculture.

Partnerships: Refers mainly to external partners such as the private sector (local level) and research institutes (central level) to increase the involvement of key stakeholders relevant to DRRM in agriculture (in activities such as extension services, seed variety development, micro-insurance, etc.).

Feedback mechanism: Refers to a vertical process from DAFOs through PAFOs to MAF to inform and support national planning processes for DRRM in agriculture from a bottom-up perspective.

Monitoring and evaluation

The progress of implementation of the Plan of Action for DRRM in Agriculture should be regularly monitored by MAF. The monitoring of the progress and documentation of lessons learned will provide data for the first evaluation phase, which will take place in three years. The evaluation should generate concrete recommendations for continuation or, if needed, revised follow-up priority actions and ensure consistency with national initiatives and the Government's priorities. Key performance indicators will be monitored and reported annually by the Department of Inspection in MAF with support from established TWGs for DRRM/CCA in MAF under Priority Area I. The key indicators and means of verification to measure the progress of integration of DRRM/CCA activities into the agriculture sector will be measured along the five Priority Areas. The following five key indicators aim to capture the progress of activities with the highest priority over the next three years:

1. Number of staff in MAF and key partners trained on planning and implementation of DRRM/CCA in the agriculture sector.
2. Establishment of an SOP for an inter-ministerial information generation and sharing mechanism for early warning and risk assessments related to agriculture.
3. Number of awareness raising events held and number of people reached.
4. Number of adaptation and risk reduction measures replicated and documented.
5. Reduced time needed to initiate response involving a “building back better” approach to agricultural recovery.

With support of the established TWG on DRRM/CCA, the Department of Inspection in MAF shall establish an overall M&E Plan for the Plan of Action. More specific indicators will be formulated in the M&E Plan that will be supported as part of the implementation of the Plan of Action under Priority Area I. The M&E Plan will serve as a guide for measuring the progress of the integration of DRRM in the agriculture sector. Results-based data and information on effectiveness and efficiency will be reported to the Government, donors and project implementers. Data on processes will look at the activities' grade of success and lessons learned by the various implementers. Process-related data will be shared horizontally among farming communities, Government staff, NGOs and local authorities, and should be integrated into knowledge management activities under Priority Area III. Development partners/donors involved in and supporting the implementation of the Plan of Action should facilitate the M&E process through the provision of relevant documents after project completion, for means of verification and documenting lessons learned.

Resource mobilization and investment

One of the highest priorities should be given to increasing the allocation of national budget through the MPI in order to reduce dependency on international funding. The United Nations International Strategy for Disaster Risk Reduction (UNISDR) recommends allocating at least 10 percent of the total available budget for humanitarian assistance to DRR-related actions across all sectors in countries highly prone to disasters. Agriculture is among those sectors most affected by natural disasters in Lao PDR, while being among the most important sectors for the national economy. Considering its significant importance for human well-being and economic growth, it is advisable to reflect the share of the agriculture sector accordingly in the budget allocation for DRRM. As capacity development and coordination mechanisms promise a high value for money, it is expected that even a small increase in national funding for capacity development and strengthening institutional mechanisms and coordination will have a great impact on the efficiency and effectiveness of DRRM interventions. This further promotes sustainability and ownership, and will improve general management mechanisms, benefiting other sectors and operations. The allocation of budget for infrastructure, permanent services and other direct agricultural inputs will require a greater investment, for which international financing institutions offer grants, loans and direct humanitarian support.

In the last decade, almost all multi- and bilateral development partners in Lao PDR have provided funding for DRRM and/or CCA or sustainable NRM (targeting a full project or integrated as a component in related projects) directly or indirectly related to agriculture sectors. Several identified actions under this plan are currently in the initial stages and are already partly included and covered by ongoing projects, including several already- developed tools for DRRM/CCA planning, training and

awareness raising (see project and tool list in Annex V).

The following main funding opportunities for DRRM exist:

- The Global Facility for Disaster Reduction and Recovery (GFDRR) is possibly the only source of funding that focuses exclusively on DRR²⁰.
- The European Commission Humanitarian Aid department's Disaster Preparedness Programme (DIPECHO) is part of the Directorate-General for the European Commission's Humanitarian Aid and Civil Protection department's mandate. DIPECHO finances programmes with a focus on a community-based approach in the most disaster-prone regions of the

Disaster Risk Management (DRM) and Disaster Risk Reduction (DRR)

Disaster Risk Management is a continuum of processes and actions related to Prevention, Mitigation, Preparedness, Response, Rehabilitation and Reconstruction. Disaster Risk Reduction is a subset of DRM, developing capacities and promoting policies, processes and actions with a focus on prevention, mitigation and better preparedness for response.

Prevention: Measures taken for the purpose of preventing natural or man-made phenomena from causing or giving rise to disasters or other emergency situations.

Mitigation: Measures taken to reduce the loss of life, livelihood and property by disasters, either by reducing vulnerability or by modifying the hazard where possible.

Preparedness: Measures taken to reduce the impact of disasters through the prior organizing of systems to promptly and efficiently respond to them. Preparedness addresses actions in both the pre-disaster phase (for example, warning and evacuation), as well as the post-disaster phase.

Response: Actions carried out in a disaster situation with the objective to save lives, alleviate suffering and reduce economic losses.

Rehabilitation: The short-term repair of physical, social and economic damage – basically enough to get back on one's feet.

Reconstruction: The medium- and long-term repair of physical, social and economic damage, and the return of affected structures to a condition equal to or better than before the disaster.

world. A specific budget line is devoted to Southeast Asia, amounting to EUR 11 million in the 2013 financing decision. For Lao PDR, DIPECHO

²⁰ The Government of Japan and the World Bank account for about 50 percent of the total funding for DRR worldwide.

explicitly stated that it would target the local communities and institutions most vulnerable to natural disasters.

- Linking DRRM and CCA in national programmes has also been reflected increasingly in joint funding opportunities. Funding DRR activities that come from climate adaptation financing sources is on the rise. The following donors and financing sources provide adaptation funding, which partially targets DRR:
 - Adaptation Fund
 - Pilot Program for Climate Resilience
 - Special Climate Change Fund
 - Least Developed Countries Fund
 - Germany's International Climate Initiative
 - Global Climate Change Alliance
 - International Climate Initiative
 - Japan's Fast Start Finance

(Source: ODI, 2013, p. 20).

- Additionally, several development banks have financed DRR activities in the wider region, among which the most important are the Asian Development Bank (ADB)/ Asian Development Fund and the World Bank (WB)-International Bank for Reconstruction and Development/WB-International Development Association (Source: ODI, 2013).

07 Annexes

I. Basic Definitions of Terminology

Adaptation – Adaptation means the adjustment in the natural or human system in response to actual or expected climatic stimuli or their effects, which moderates harm and exploits beneficial opportunities (UNISDR, 2009).

Capacity Development – The process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems and institutions (UNISDR, 2009).

Climate Change – Change observed in the climate on a global, regional or sub-regional scale caused by natural processes and/or human activity. Climate change adaptation is an adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities (UNISDR, 2009).

Contingency planning – A management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations (UNISDR, 2009).

Coping capacity – The ability of people, organizations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters (UNISDR, 2009).

Disaster – A serious disruption of the functioning of a community or a society, causing widespread human, material, economic or environmental losses that exceed the ability of the affected community/society to cope using only its own resources. Disasters are often classified according to their cause (natural or manmade) (UNISDR, 2009).

Disaster risk – The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period (UNISDR, 2009).

Disaster risk management (DRM) – The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards (UNISDR, 2009).

Disaster risk reduction (DRR) – Activities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development. DRR involves: (i) risk awareness and assessment; (2)

knowledge development; (3) public commitment and institutional frameworks; (4) application of a multitude of measures; and (5) early warning systems, preparedness measures and reaction capacities (UNISDR, 2009).

Early warning system – The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss (UNISDR, 2009).

Hazard – A potentially damaging physical event, phenomenon and or human activity, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation (UNISDR, 2009).

Natural Hazard – Natural processes or phenomena occurring in the biosphere that may constitute a damaging event (UNISDR, 2009).

Land-use planning – The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long-term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses (UNISDR, 2009).

Recovery – The restoration and improvement, where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.

Resilience – The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions (UNISDR, 2009).

Response – The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected (UNISDR, 2009).

Risk – The probability of harmful consequences, or expected loss (of lives, people injured, property, livelihoods, economic activity disrupted or environment damage) resulting from interactions between natural or human induced hazards and vulnerable conditions. Conventionally, risk is expressed by the equation $Risk = Hazard \times Vulnerability$ (UNISDR, 2009).

Sustainable Development – Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (UNISDR, 2009).

Vulnerability – The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard (UNISDR, 2009).

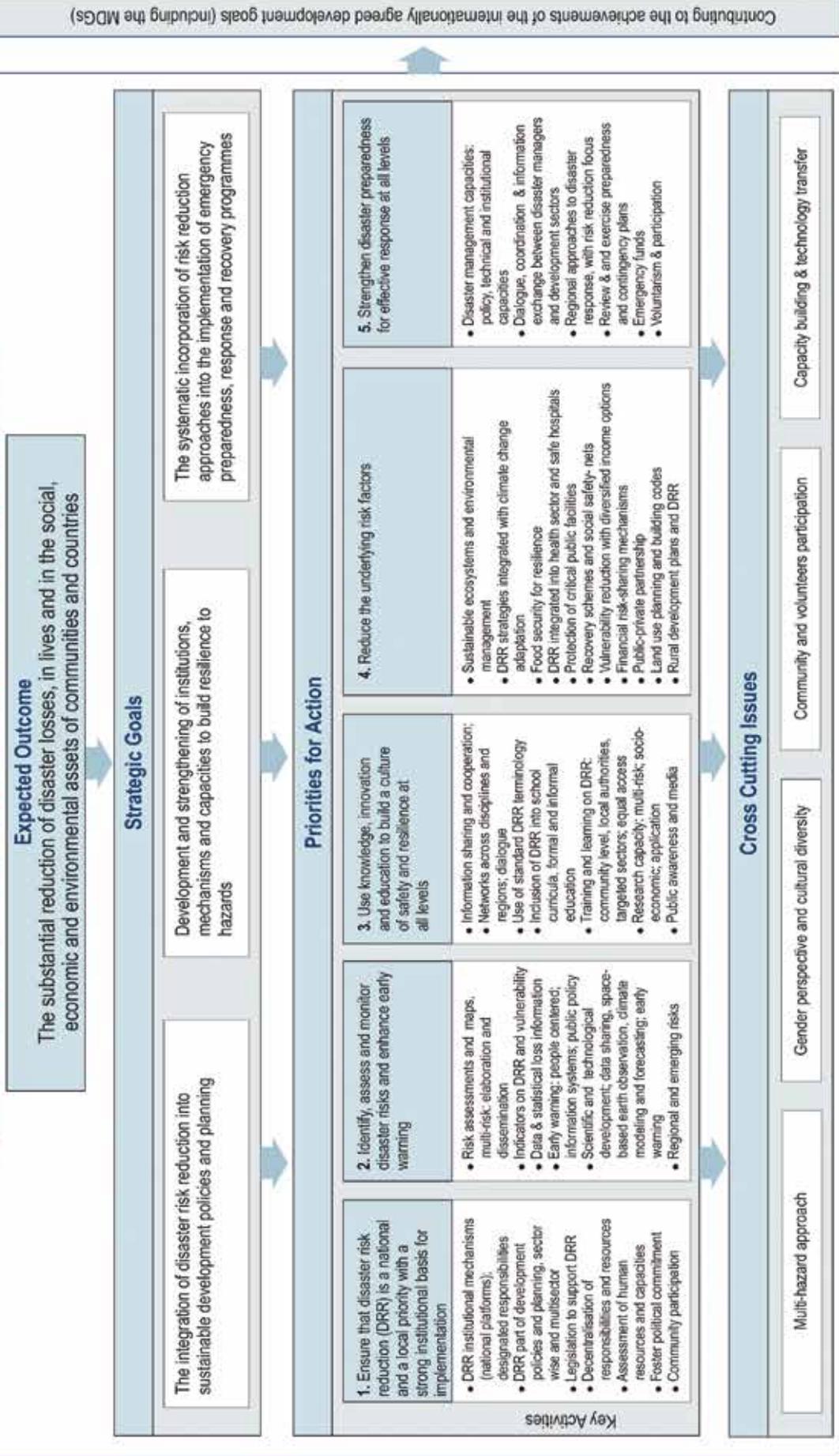
II. Hyogo Framework for Action (HFA) 2005–2015 Summary Chart



International Strategy for Disaster Reduction

SUMMARY of the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (Hyogo Framework)

Expected outcome, strategic goals and priorities for action 2005-2015



III. List of ongoing or recently completed projects related to DRRM/CCA in Lao PDR

Org/Donor	Project Title	Geographic Coverage	National Counterpart	Project Period	Relevance for PA (and key area)	Link
United Nations Development Programme (UNDP)	Improving the Resilience of the Agriculture Sector to Climate Change Impacts	Savaboury: Phiang and Paklai Districts; Savannakhet; Outhoumphone and Champhone Districts	NAFRI	05/2011 – 12/2015	PA1 and 3 (DRR/CCA/agriculture)	http://www.la.undp.org/content/lao_pdr/en/home/operations/projects/environment_and_energy/IRAS.html
UNDP	Support to Integrated Irrigated Agriculture in two Districts of Bolikhamxay	Bolikhamxay Province; Bolikhanh and Viengthong Districts	MAF	06/2012–06/2015	PA 4 and 5 (rehabilitation and “building back better”, irrigation)	http://www.la.undp.org/content/lao_pdr/en/home/operations/projects/environment_and_energy/integrated_irrigated_agriculture_bolikhamxay.html
UNDP	Integrated Disaster and Climate Risk Management Project in Lao PDR	Xaybouly and Xieng Khouang (Phase I), expanded to Vientiane and Bolikhamxay (Phase II)	DDMCC, MoNRE	05/2013–12/2015	PA 2,3, 4 and 5 (linking effective recovery and CCA)	http://www.undp.org/content/lao_pdr/en/home/prescenter/pressreleases/2013/10/07/new-project-to-strengthen-disaster-risk-management-in-lao-pdr/
UNDP	Effective Governance for small-scale rural infrastructure and disaster preparedness in a changing climate (NAPA follow-up project 2)	Sekong and Saravane	MoNRE; MoHA through the National Governance and Public administration Reform Programme Secretariat	05/2013–05/2016	PA 4 (mitigation and prevention, irrigation)	http://www.undp-alm.org/projects/ldcf-effective-governance-small-scale-rural-infrastructure-and-disaster-preparedness

United Nations Office for Project Services/ Asian Disaster Preparedness Center (ADPC)	Implementation of DesInventar Database in Laos	Phongsaly, Bokeo, Oudomxay, Luang Prabang and Houaphan	NDMO	08/2010–06/2011	PA 2/3 (EWS)	http://www.adpc.net/2012/Info/Project.asp?PageID=239
GFDRR/ADPC	Operationalizing Strategic Plan for Disaster Management in Lao PDR	National and provincial level	MoNRE (WREA) NDMO	06/2010–08/2012	P 1 and 2 (institutionalization process and improving EWS)	http://www.adpc.net/v2007/Downloads/2010/Oct/OSPDM-Project%20Brief_14Oct.pdf
UNISDR/ ADPC	Strengthening Institutional Capacity for the Development of the Lao PDR National Assessment Report (LNAR-2012) on Disaster Risk Reduction	National level	NDMO	03/2012–12/2012	PA1/2/3 (institutionalization of DRR)	http://www.adpc.net/2012/Info/Project.asp?PageID=320
WB/ADPC	Mainstreaming Disaster and Climate Risk Management into Investment Decisions		MPI, MPWT	11/2011–01/2015	PA 1 and 4 (mitigation and prevention, irrigation)	http://www.worldbank.org/projects/P129182/lao-pdr-mainstreaming-disaster-climate-risk-management-investment-decisions?lang=en&tab=overview
WFP and Save the Children-led NGO consortium	Strengthening Disaster Risk Management Systems and Capacities in Lao PDR	Luang Prabang, Oudomxay, Bolikamxay, Bokeo and Xieng Khouang Provinces	Local Governments	2013-2015	PA 3, 4 and 5 (community preparedness and DRR in schools)	http://www.wfp.org/news/news-release/wfp-and-ministry-natural-resources-and-environment-renew-commitment-disaster-prepa
WFP	Assistance to Food Insecure Households Affected by Multiple Livelihood Shocks		MLSW, Ministry of Communication, Transport, Post and Construction	2011		http://www.wfp.org/content/assistance-food-insecure-households-affected-multiple-livelihood-shocks

Org/Donor	Project Title	Geographic Coverage	National Counterpart	Project Period	Relevance for PA (and key area)	Link
WFP	Assistance to Food-Insecure Households in Transition			2011		http://www.wfp.org/content/assistance-food-insecure-households-transition
ADB	Greater Mekong Sub region East-West Economic Corridor (EWEC) Agriculture Infrastructure Sector Project (formerly Rural Access Improvement Project Along the EWEC).	Savannakhet and Saravane	MAF, PAFOs	01/ 2014–12/2021	PA 4 (irrigation infrastructure with CCA potential)	http://www.adb.org/projects/44138-022/main
ADB	Northern Rural Infrastructure Sector Project	Bokeo, Luang Namtha, Oudomxay and Phongsaly	MAF, PAFOs	03/2011–02/2017	PA 4 (irrigation infrastructure with CCA potential)	http://www.adb.org/projects/documents/northern-rural-infrastructure-development-sector-project-1
ADB	Greater Mekong Subregion Flood and Drought Risk Management and Mitigation Project	Vientiane	DOI, MAF	08/2012–03/2019	PA 4 (agriculture, irrigation sector)	http://www.adb.org/projects/documents/gms-flood-drought-risk-management-mitigation-project-lao-vie-rtp
ADB/ International Fund for Agricultural Development (IFAD)	Northern Region Sustainable Livelihoods through Livestock Development Project	18 priority poor districts in Luang Prabang, Xieng Khouang, Luang Namtha, Bokeo and Huaphanh		12/2006–03/2014	PA 4 (livestock, value chains)	http://www.adb.org/projects/35297-013/main ; http://www.ifad.org/gbdocs/eb/89/e/EB-2006-89-R-24-Rev-1.pdf
ADB/IFAD	The Sustainable Natural Resource Management and Productivity Enhancement Project	Savannakhet, Champasak, Salavan, Attapeu and Sekong	MAF	2009–2015	PA 4 (rural development)	http://www.adb.org/projects/37579-012/main

IFAD	Climate adaptation tools to help farmers in South and Southeast Asia	Bangladesh, Indonesia and Lao PDR	International Research Institute, NAFRI	Approved 2012	PA 3 (extension services)	http://iri.columbia.edu/docs/features/2013_spotlight_features/iri_to_develop_climate_adaptation_tools_to_help_farmers_in_south_and_southeast_asia.html
IFAD/FAO	Pro-poor Policy Approaches to Address Risk and Vulnerability at the Country Level (FAO-1286)	Cambodia, Laos, Nepal and Viet Nam	NAFRI, MAF	2011	PA 1 and 2 (policy advice for climate risk across sectors)	http://asia.ifad.org/web/cambodia/projects
FAO	Support to the EC Programme on Linking Information and Decision Making to Improve Food Security for Selected Greater Mekong Sub regional Countries	Vientiane	DoPC,MAF	01/2009 – 12/2012	PA 1 and 2 (agriculture sector: food security)	http://www.fao.org/fileadmin/user_upload/oed/docs/GCPRAS247EC_2012_ER.pdf
FAO	Emergency assistance to restore the livelihoods of vulnerable farming families affected by floods in Khammouan, Savannakhet and Champasak Provinces in Lao PDR	Khammouan, Savannakhet and Champasak	MAF	02/2012 – 03/2013	PA 5	
FAO	The Promotion of home gardens for enhanced food and nutrition security in Northern upland areas affected by multiple hazards	Luang Namtha	MAF	02/2012 – 10/2013	PA 4	
FAO	Emergency Centre for Transboundary Animal Diseases (ETCAD)	Regional	MAF	Since 2004	PA 2	http://www.fao-ectad-bamako.org/fr/FAO-ECTAD,46

Org/Donor	Project Title	Geographic Coverage	National Counterpart	Project Period	Relevance for PA (and key area)	Link
MRC	Climate Change Adaptation Initiative	Mekong Region	Partner in Lao PDR: MoNRE, MAF	2011–2015	PA 4 (CCA options)	http://www.mrcmekong.org/assets/CCAI-2011-2015-documentFinal.pdf
MRC/ADPC (German Federal Enterprise for International Cooperation [GIZ])	Flood Management and Mitigation Programme	Mekong Region		2011–2015	PA 4 (flood risk management and mitigation practices)	http://www.mrcmekong.org/assets/Publications/Programme-Documents/FMMP-2011-2015-Programme-Documents-Volume-1-file-date-21042011.pdf
Government of Germany	Climate Protection Through Avoided Deforestation	Houaphanh and Xaybouly provinces	DoF, MAF	03/2010–12/2017	PA 4 (forestry sector)	http://www.forestcarbonasia.org/wp-content/uploads/2011/10/CliPAD-Project-Documents-Final-100823.pdf
GIZ	Integrated nature conservation and sustainable management of resources in the Hin Nam No region	Hin Nam No Region	MoNRE	2011–2016	PA 4 (NRM and conservation, biodiversity, forestry)	http://www.giz.de/en/worldwide/17453.html
GIZ	Environmental education to cope with climate change in Laos		Department of Environmental Quality Protection, MoNRE	2012–2014	PA 3 (climate change, knowledge, education, awareness)	http://www.giz.de/en/worldwide/17458.html
GIZ	Promoting rural microfinance services		Bank of the Lao PDR	2011–2014	PA 1 and 4 (microfinance)	http://www.giz.de/en/worldwide/17492.html

Australian Centre for International Agricultural Research (ACIAR)	Developing Multi-Scale climate change adaption strategies for Framing Communities in Cambodia, Lao PDR, Bangladesh and India	Champhone and Outhoumphone Districts and Savannakhet Province	PAFO	04/2010–06/2014	PA 1, 2 and 4 (adaptation through policy, programming and delivery in agriculture)	http://aciarc.gov.au/project/lwr/2008/019;www.nafri.org.la/.../project.../676-nafri-acc-2013-agro-climate-advisory-in-lao-pdr-
ACIAR	Teak-based agroforestry systems to enhance and diversify smallholder livelihoods in Luang Prabang province of Lao PDR		NAFRI, Souphanouvong University, Northern Agriculture and Forestry College	06/2013–11/2017	PA 3 and 4 (forestry sector, extension services and rural development)	http://aciarc.gov.au/project/fst/2012/041
France	Community Ecology of Rodents and their Pathogens in South-East Asia, Effects of Biodiversity Changes	Luang Prabang, Khammouan and Champasak	PAFO	06/2008–06/2012	PA 4 (pest control)	http://www.ceropath.org/
Triangle Generation Humanitaire	Assistance to rural vulnerable populations affected by Haima typhoon in Hinboon District, Khammouane Province, Lao PDR	Khammouan: Hinboon		06/2012–03/2013	PA 1, 3 and 4 (disaster preparedness, social welfare and agricultural production)	http://www.directoryofngos.org/pub/project.php?id=612
Caritas Luxembourg in Lao PDR	From Vulnerability to Resilience	Xieng Khouang: Thathoum		01/2011–12/2014	PA 1, 4 and 5 (food security, irrigation, livestock production, NTFP, organic agriculture, training, preparedness)	http://www.directoryofngos.org/pub/project.php?id=522

Org/Donor	Project Title	Geographic Coverage	National Counterpart	Project Period	Relevance for PA (and key area)	Link
Health Poverty Action	Community-Based Disaster Management in Attapeu province	Attapeu: Sanxay, Samakkhixay, Phouvong		07/2012–12/2013	PA 1,4 and 5 (disaster preparedness, risk behavior awareness and education, community development training)	http://ec.europa.eu/echo/files/funding/decisions/2012/HIPs/DIPECHO_sea_annex.pdf
Croix-Rouge Francaise (CRF) (ECHO)	Recovery and Resilience for Flood Affected Communities - Khammouan (LA119)	Khammouan: Boualapha		06/2012–06/2013	PA 5 (food security, agriculture, disaster preparedness, emergency relief)	http://www.directoryofngos.org/pub/project.php?id=580
Save the Children- AusAid/ADPC DDMC	Sayaboury Integrated Hazard Mitigation Project	Xayabury: Xienghone, Xayabury	NDMO Xayabury PDMC	07/2007–09/2012	PA 1, 2,4 and 5 (mainstreaming DRR, institutional capacities on sub-national level)	http://www.directoryofngos.org/pub/project.php?id=449
World Vision Lao PDR	Ngommalath Area Development Program (LAO - 194637)	No area confirmed		10/2010–09/2025	PA 3 and 4 (disaster preparedness, emergency and human resources training, emergency relief)	http://www.directoryofngos.org/pub/project.php?id=608
Welthungerhilfe/ German Agro Action	Poverty Reduction and Food Security in Muang Xepon, Savannakhet Province (Lao - 1031)	Savannakhet: Sepone		01/2012–07/2014	PA 4 (disaster preparedness, emergency)	http://www.directoryofngos.org/pub/project.php?id=531

Oxfam Belgium	Building disaster prepared and resilient communities in Kasi District, Vientiane Province	Ten villages in Kasi District	Oxfam Belgium	07/2010–10/2011	PA 4 and 5 (disaster preparedness)	http://www.alnap.org/resource/7959.aspx
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IV. List of available studies on DRRM/CCA and related fields in Lao PDR

Study Title	Author/Implementation Agency	Regional/Country Specific	Date	Relevance for Priority Area	Link
Managing Climate Change Risks for Food Security in Lao PDR	FAO	Lao PDR	July 2011	PA 1 and 2	http://www.foodsec.org/fileadmin/user_upload/eufao-fsi4dm/docs/Lao%20PDR%20-%20RIMES%20%282011-07%29%20Managing%20Climate%20Change%20Risks%20for%20Food%20Security%20copy.pdf
Food and Nutrition Security Atlas	WFP	Lao PDR	September 2013	PA 1 and 2	http://reliefweb.int/sites/reliefweb.int/files/resources/Food%20and%20Nutrition%20Security%20Atlas%20of%20Lao%20PDR,%20September%202013.pdf
Emergency Food Security Assessment in Northern Laos	WFP	Lao PDR	November 2009	PA 5	http://home.wfp.org/stellent/groups/public/documents/ena/wfp219971.pdf
Mainstreaming of Disaster Risk Reduction in the Education Sector in the Lao PDR	ADPC (UNDP, the European Union, NDMO, MoE)	Lao PDR	April 2008	PA 3	http://www.adpc.net/v2007/programs/dms/PROGRAMS/Mainstreaming%20DRR/Downloads/Laos%20%281%29.pdf
UNICEF communication for development support to public health preparedness and disaster risk reduction in East Asia and the Pacific: A review	United Nations Children's Fund (UNICEF)	East Asia	July 2013	PA 1 and 4	http://www.unicef.org/eapro/Communication_for_development_support_to_public_health_preparedness.pdf
Water, Sanitation, and Hygiene Annual Report	UNICEF	Global	May 2013	PA 1 and 4	http://www.unicef.org/wash/files/2012_WASH_Annual_Report_14August2013_eversion_%281%29.pdf

Protecting Asia's Most Vulnerable - WFP and Social Safety Nets in Asia	WFP	Asia			PA 1 and 4	http://www.wfp.org/content/protecting-asia%E2%80%99s-most-vulnerable-wfp-and-social-safety-nets-asia
Building Resilience on a Fragile Continent - WFP and Climate Change in Asia	WFP	Asia	January 2013		PA 1 and 4	http://www.wfp.org/content/building-resilience-fragile-continent-wfp-and-climate-change-asia
Lao People's Democratic Republic - Follow-up Emergency Food Security Assessment	WFP	Lao PDR	June 2011		PA 5	http://www.wfp.org/content/lao-pdr-follow-emergency-food-security-assessment-june-2011
Developing a national Risk Profile of Lao PDR	ADPC (UNDP)	Lao PDR			PA 2	http://www.gripweb.org/gripweb/sites/default/files/National%20Hazard%20Profile%20Laos%20Draft.pdf
National Assessment Report on DRR (Linkages between Poverty and Disaster Risk)	ADPC/NDMO	Lao PDR	2012		PA 1-5	http://www.adpc.net/2012/Category/Documents/DocumentDB/Publication_LNARreportWEB.pdf
Climate Risk and Country Profile	GFDRR	Lao PDR	April 2011		PA 2	http://sdwebx.worldbank.org/climateportalb/doc/GFDRCountryProfiles/wb_gfdrr_climate_change_country_profile_for_LAO.pdf
Typhoon Haima in the Lao People's Democratic Republic: Joint Damage, Losses and Needs Assessment – August 2011	Lao Government with support of several International Organizations	Lao PDR	August 2011		PA 5	http://www.gfdrr.org/sites/gfdrr.org/files/Haima_JDLNA_Report.pdf
The Climate Change Impact and Adaptation(CCIA) Study for the Lower Mekong Basin (LMB)	United States Agency for International Development's Mekong Adaptation and Resilience to Climate Change (ARCC) Program	Mekong/Savannakhet	September 2013		PA 2 and 4	http://www.mekongarcc.net/sites/default/files/mekongarcc_draft_synthesis_report.pdf http://www.mekongarcc.net/resource/ppt-climate-change-hotspot-identification?page=1&tag_country=69&resource_search=1

Study Title	Author/Implementation Agency	Regional/Country Specific	Date	Relevance for Priority Area	Link
Climate change and water resources in the Lower Mekong River Basin: putting adaptation into the context	Journal of Water and Climate Change	Mekong River Basin	January 2010	PA 4	http://www.wdrg.fi/wp-content/uploads/2012/10/ClimateWater.pdf
Impact of climate change on sediment yield in the Mekong River Basin: a case study of the Nam Ou Basin, Lao PDR	Hydrol. Earth Syst. Sci., 17, 1–20, 2013	Nam Ou Basin, Lao PDR	July 2013	PA 4	http://www.hydrolog-earth-syst-sci.net/17/1/2013/hess-17-1-2013.pdf
Study on Potential Impacts of Climate Change on Land Use in the Lao PDR	International Center for Tropical Agriculture	Lao PDR	July 2010	PA 2 and 4	http://landportal.info/sites/default/files/june_2010_cc_land_use_change_ciat-gtz_-_j.pdf
Feasibility Study for a National Programme to Manage Slope Stability	Department For International Development	Lao PDR	September 2008	PA 1 and 4	http://r4d.dfid.gov.uk/Output/178887/
Improving Rice Based Upland Cropping Systems for the Lao PDR/ Participatory varietal selection: Lessons learned from the Lao upland programme	NAFRI/International Rice Research Institute	Lao PDR		PA 4	http://lad.nafri.org.la/fulltext/LAD010320040580.pdf
Participatory Variety Selection to Assess Farmer Preferences of Traditional Glutinous Rice Varieties in The Lao PDR	NAFRI in collaboration with several research partners	Lao PDR	January 2006	PA 4	http://ags.kku.ac.th/kaj/PDF.cfm?filename=KAJ%2034_03_003-Participatory.pdf&id=70&keeptrack=84

Country Analysis Report 2012-2015; Analysis to inform the selection of priorities for the next UN Development Assistance Framework (UNDAF) 2012-2015	UN in the Lao PDR	Lao PDR	2012	PA 1	http://www.unpd.org/content/dam/laopdr/docs/Legal%20Framework/UNDP_LA_CAR_2012_2015.pdf
Study on Potential Impacts of Climate Change on Land Use in Lao PDR	NAFRI	Lao PDR	2010	PA 2	http://www.nafri.org.la/iras/index.php/lo/project-document/doc_download/574-ciat-2010-potential-impacts-of-climate-change-on-land-use-in-laos-
Managing Climate Change Risks for Food Security in Lao PDR, July 2011	FAO	Lao PDR	2011	PA 1 and 4	http://www.foodsec.org/fileadmin/user_upload/eufao-fsi4dm/docs/Lao%20PDR%20-%20RIMES%20(2011-07)%20Managing%20Climate%20Change%20Risks%20for%20Food%20Security%20copy.pdf
MAP-CBA, Lao PDR Adaptation Programme: Country Programme Strategy (CPS)		Lao PDR	2010	PA 2	http://www.unisdr-apps.net/confluence/download/attachments/9110376/LAO+PDR+0F99FF22d01.pdf?version=1
Climate Risk and Adaptation Country Profile	GFDRR	Lao PDR	2011	PA 2	http://sdwebx.worldbank.org/climateportalb/doc/GFDRRCountryProfiles/wb_gfdr climate_change_country_profile_for_LAO.pdf
Strategic Framework for the Center for Agriculture and Forestry Research Information, 2009-2013	NAFRI	Lao PDR	2008	PA 4	www.nafri.org.la/.../3-strategic-framework-for-center-for-agriculture-and-forestry-research-information-2007-2012
Lao People's Democratic Republic Rice Policy Study	WB/FAO	Lao PDR	2012	PA 1	http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/05/31/000445729_20130531141439/Rendered/PDF/781300WP0LaoR0Box0377325B00PUBLIC0.pdf

Study Title	Author/Implementation Agency	Regional/Country Specific	Date	Relevance for Priority Area	Link
Scoping Assessment of Climate Change Adaptation Priorities in the Lao PDR. Regional Climate Change Adaptation Knowledge Platform for Asia, Partner Report Series No. 6.	EcoLao	Lao PDR	2013	PA 1 and 3	http://static.weadapt.org/knowledge-base/files/1120/50e55d31c46ffscoping-assessment-of-...pdf
Disaster risk reduction in school curricula: case studies from thirty countries	UNICEF	30 countries including Lao PDR (p. 104-106)	2012	PA 3	
Country Assessment Report for Lao PDR	World Meteorological Organization/WB/ UNISDR/ GFDRR	Lao PDR	2012	PA 2	http://www.unisdr.org/files/33988_countryassessmentreportlaopdr%5B1%5D.pdf

V. List of developed tools with relevance for DRRM/CCA and Lao PDR

Category	Title	Geographical Scope	Agency	Date	Availability
Booklet	Impacts of climate change and development on Mekong flow regimes: first assessment (2009)	Mekong Region	MRC	February 2011	http://www.mrcmekong.org/assets/Publications/report-management-develop/MRC-IM-No4-impacts-of-climate-change.pdf
Guidelines	Knowledge base on benefit sharing	Mekong Region	MRC	May 2011	http://www.mrcmekong.org/assets/Publications/Manuals-and-Toolkits/knowledge-base-benefit-sharing-vol1-of-5-Jan-2012.pdf
Booklet	Review of climate change adaptation methods and tools	Mekong Region	MRC	December 2010	http://www.mrcmekong.org/assets/Publications/technical/Tech-No34-Review-of-climate-change.pdf
Booklet	Adaptation to climate change in the countries of the Lower Mekong Basin	Mekong Region	MRC	September 2009	http://www.mrcmekong.org/assets/Publications/report-management-develop/MRC-IM-No1-Adaptation-to-climate-change-in-LMB.pdf
Training Manual	Manual for Training Trainers in Integrated Water Resources Management in the Mekong Basin	Mekong Region	MRC	January 2012	http://www.mrcmekong.org/assets/Publications/Manuals-and-Toolkits/BDP-Training-Manual-final-2011-update260112.pdf
Database	TECA	Global	FAO		http://teca.fao.org/
Database	Lao Agriculture Database	Lao PDR	NAFRI		http://lad.nafri.org.la/about.php
Database	Decide	Lao PDR	MAF		http://www.decide.la/en/
Database	DesInventar	Lao PDR	MoNRE	2007	

Category	Title	Geographical Scope	Agency	Date	Availability
Assessment Tool	DRM system analysis	Not country specific	FAO		ftp://ftp.fao.org/docrep/fao/010/ai504e/ai504e00.pdf
Guidelines and Tools	Assessment of Disaster Risk Management Guidelines and Tools	Not country specific	German Organisation for Technical Cooperation/ Local Governments for Sustainability	March 2007	http://www.preventionweb.net/files/8808_ICLEIDRMToolsreport.pdf
Handbook/ Guidelines	Handbook for estimating the socio-economic and environmental effects of disasters	Global	WB	January 2003	http://www-wds.worldbank.org/external/default/main?pagePK=64187835&piPK=64187936&theSitePK=523679&siteName=WDS&menuPK=64187283&callBack=&report=47583
M&E methodology	Tool for the evaluation of Performance of Veterinary Services	Lao PDR	World Organisation for Animal Health	September 2011	http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS-FU_Report-Lao.pdf
Definitions	Glossary of Terms and Definitions on Climate Change and Adaptation in Lao	Global	MRC	January 2013	http://www.mrcmekong.org/assets/Publications/glossaries/Glossary-of-Terms-n-Definitions-on-CCA-Lao-16072013.pdf
Definitions	Terminology on DRR	Global	UNISDR	2009	http://www.unisdr.org/we/inform/terminology
Video	How to Design A Climate Change Adaptation Programme: Lao PDR	Lao PDR	UNDP	2012	http://www.youtube.com/watch?v=8eUmjCQiC8
Video	Fighting climate change in Laos Global Ideas	Lao PDR	Dialogue Worldwide	January 2012	

Video	Baseline Video: Improving Climate Resilience in Lao PDR (English subtitles)	Lao PDR	UNDP	September 2013	http://www.youtube.com/watch?v=hcqZGJlIqAI
Video	Baseline Video Improving Climate Resilience in Lao PDR	Lao PDR	UNDP	October 2013	http://www.youtube.com/watch?v=yck5_npTECg
Video	What we can do to deal with Climate Change	Lao PDR	MRC	February 2011	http://www.youtube.com/watch?v=QnmxDd5-Fbw
Video	Climate Change and Adaptation Initiative	Lao PDR	MRC	February 2011	http://www.youtube.com/watch?v=1aDkiBjkTA
Video	What is Climate Change?	Lao PDR	MRC	February 2011	http://www.youtube.com/watch?v=yInb5P6BnQ
Video	Climate Change affects people living in the Mekong River Basin (Laos)	Lao PDR	MRC	February 2011	http://www.youtube.com/watch?v=pUUPMYbDeYE
Video	GPDRR13 IGNITE Stage: Lao PDR: national disaster database and national assessment report on DRR	Lao PDR	UNISDR	May 2013	http://www.youtube.com/watch?v=idC6dki3Ly8
Video	Several more interviews Mekong ARCC	Lao PDR	Mekong ARCC	July 2013	http://www.youtube.com/results?search_query=Mekong+ARCC+ +Lower+Mekong+Climate+Impact+and+Adaptation+Study&sm=3
Video	[Laotian] WISDOM 2 Video - A German-Vietnamese Initiative	Mekong Delta	German Aerospace Center	February 2013	http://www.youtube.com/watch?v=qofaMMRcVFk
Video	Quality investments from Lao PDR: organic contract farming in Patxong province (Short version)	Lao PDR	UNDP	June 2013	http://www.youtube.com/watch?v=EjiULxxnzTY
Video	Laos - Fighting to Save Its Forests Global 3000	Lao PDR	Dialogue Worldwide	January 2012	http://www.youtube.com/watch?v=_g6pCCmjams

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