

CASE STUDY



Policies, Institutions and Processes to Support Climate Resilient and Sustainable Agriculture in Myanmar's Dry Zone:

Role of National Environment Policy, National Comprehensive Development Plan and National Strategy on Poverty Alleviation and Rural Development

Funded by

Livelihoods and Food Security Trust Fund





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Developed as part of the project:

An Integrated Rural Economic and Social Development Programme for Livelihoods
Improvement in the Dry Zone of Myanmar

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Abbreviations

ASEAN	Association of Southeast Asian Nations
CAPSA	Centre for Alleviation of Poverty through Sustainable Agriculture
CBM	Central Bank of Myanmar
CD	Cooperative Department
CDZ	Central Dry Zone
CRSA	Climate-resilient and sustainable agriculture
CSA	Climate-smart agriculture
DAR	Department of Agricultural Research
DF & GD	Department of Forestry and Greening Department
DIWUM	Department of Irrigation and Water Utilization Management
DLMS	Department of Land Management and Statistics
DMH	Department of Meteorology and Hydrology
DOA	Department of Agriculture
DOF	Department of Fishery
DOP	Department of Planning
DRD	Department of Rural Development
DTP	Department of Trade Promotion
DWRRS	Directorate of Water Resources and Improvement of River System
ESCAP	Economic and Social Commission for Asia and the Pacific
ESIA	Economic and social impact assessment
FAO	Food and Agriculture Organization of the United Nations
FRD	Financial Regulatory Department
FSWG	Food Security Working Group
GEF	Global Environment Facility
GORUM	Government of the Republic of the Union of Myanmar
INC	Initial national communication
INGO	International non-government organization
JICA	Japan International Cooperation Agency
LDCF	Least Developed Countries Fund
LIFT Fund	Livelihoods and Food Security Trust Fund
MA21	Myanmar Agenda 21
MADB	Myanmar Agricultural Development Bank
MOAI	Ministry of Agriculture and Irrigation
MOALI	Ministry of Agriculture, Livestock and Irrigation
MECF	Ministry of Environmental Conservation and Forestry
MECL	Myanmar Environmental Conservation Law
MLFRD	Ministry of Livestock, Fisheries and Rural Development
MNPED	Ministry of National Planning and Economic Development

MNREC	Ministry of Natural Resources and Environmental Conservation
MOC	Ministry of Commerce
MOFA	Ministry of Foreign Affairs
MOHA	Ministry of Home Affairs
MPBSA	Myanmar Pulses Bean and Sesame Seed Merchant Association
MRF	Myanmar Rice Federation
NAMA	Nationally Appropriate Mitigation Action
NAPA	National Adaptation Programme of Action
NARES	National Agriculture Research and Extension Services
NCDP	National Comprehensive Development Plan
NCEA	National Commission for Environment Affairs
NECC	National Environment Conservation Committee
NEP	National Environment Policy
NSD	National Sustainable Development
NSPARD	National Strategy on Poverty Alleviation and Rural Development
PIPs	Policies, Institutions and Processes
SDGs	Sustainable Development Goals
SSID	Small Scale Industries Department
SWOT	Strengths, weaknesses, opportunities and threats
UMFCCI	Union of Myanmar Federation of Chambers of Commerce and Industry
UNFCCC	United Nations Framework Convention on Climate Change
UNOPS	United Nations Office for Project Services
YAU	Yezin Agricultural University

Foreword

The Dry Zone of Myanmar suffers from high levels of poverty and food insecurity. Agriculture is an important source of livelihood, but rainfall is concentrated in a few months of the rainy season with erratic duration and wide deviation in annual precipitation. This makes the Dry Zone especially vulnerable to the impacts of climate change. Climate change is also exacerbating the adverse effects of land and environmental degradation, leading to poor and fragile soils. The most severely affected are poor, rural families, who depend on agriculture for food and nutrition, as well as their livelihoods. Strengthening the sustainability and climate resilience of agriculture in the Dry Zone, with a focus on smallholders and other vulnerable communities, is thus of critical importance to ensure food security and income stability.

The development of appropriate policies is of paramount importance for the sustainable development and improvement of livelihoods in the Dry Zone. Policymaking and implementation, however, are complex and incremental processes that require continuous interaction between the state and civil society, including the private sector. The processes require knowledge of the stakeholders involved and activities that they are implementing on the ground, as well as an understanding of the strengths and weaknesses of existing policies, institutions and policy formulation and implementation processes so that technical and capacity- building gaps that need to be addressed can be identified.

This report is a part of a series of case studies produced by the United Nations Economic and Social Commission for Asia and the Pacific that aim to map relevant stakeholders and assess their interventions in the Dry Zone, as well as analyse policies, institutions and processes for areas that are important for the sustainable development of the Dry Zone. Based on multi-stakeholder consultations conducted in Myanmar, the case studies have focused their attention on the following areas:

- (i) Value chains for seed development for pulses, legumes and oil crops
- (ii) Agricultural mechanization development
- (iii) Sustainable agriculture for poverty reduction.

We sincerely hope that the case studies will serve as valuable knowledge resources for practitioners and decision makers in government, civil society and the private sector in Myanmar, and support their efforts to promote sustainable and climate-resilient agriculture in the Dry Zone.

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Executive Summary

Background

The Central Dry Zone (CDZ) of Myanmar covers about 13 per cent of the country, with a population of approximately 14.5 million people.¹ It suffers from high levels of poverty and food insecurity, with agriculture being the main source of livelihood. The situation in the Dry Zone is also exacerbated by the effects of climate change. The most severely affected are the poor, rural smallholder families. Promoting climate-resilient and sustainable agriculture (CRSA) in the Dry Zone is important to achieve food security and poverty reduction.

Sound agricultural, environmental and rural development policies are critical for supporting CRSA in the Dry Zone. An assessment of existing policies to identify their strengths and weaknesses will contribute to better policy formulation and implementation. Any assessment of the strengths and weaknesses of agricultural and rural development policies must consider not only the contents of the policies themselves, but also the institutions and processes involved in their formulation, implementation, and monitoring and evaluation. This study aims to examine the existing policies, institutions and processes (PIPs) for supporting CRSA in Myanmar's Dry Zone. In particular, it analyses the role of the National Environment Policy (NEP), the National Comprehensive Development Plan (NCDP) and the National Strategy on Poverty Alleviation and Rural Development (NSPARD) in supporting CRSA in the Dry Zone, as a specific case of PIPs.

Policies and policy frameworks

The key constituents of the NEP are Myanmar Agenda 21 (MA21), the Forest Policy, Climate Change Strategy (including ratification of UNFCCC), Conservation of Biodiversity, and the Environment Conservation Law.

The NCDP (2011-2012 to 2030-2031) and the Fifth Five Year Plan (2011-2012 to 2015-2016) together comprise the National Development Plan. The Agriculture Development Plan is included in the NCDP as a sectoral development plan (JICA, 2013). The development plans of other agri-related sectors are similarly included in the NCDP.

The NSPARD was laid down at a national workshop held from 20-22 May 2011 within the framework of the reform process, emphasizing the development of agro-based industries, equitable sharing of resources among states and regions, promotion of local and foreign investment, effective implementation of people-centred development and poverty reduction.

¹ <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp234780.pdf?iframe>

Some developments have taken place recently and, although there has been no official announcement about NSPARD and NCDP so far, the Central Committee, and the central, state/region, district, and township working committees for NSPARD were abolished by the new Government of the Republic of the Union of Myanmar (GORUM) that took office in 2016 (Notification No 36/2016 issued by the President Office on 29.03.2016). The functions of rural development are being undertaken by the Department of Rural Development (DRD) of the Ministry of Agriculture, Livestock and Irrigation (MOALI). Irrespective of their future course, it is intended that the analysis of NEP, NCDP and NSPARD in this case study and the key inferences gained will contribute to better formulation and implementation of policies for agricultural and rural development in future.

Analysis of findings

Assessment of policies

- Although both NCDP and NSPARD are quite comprehensive, their focus on vulnerable communities, such as smallholder farmers, has not been well articulated. Moreover, although poverty alleviation and food security have been given due attention, climate change mitigation has not been mainstreamed in either policy.
- NSPARD has served as one of the most important policy instruments for addressing poverty and rural development, having eight priority areas/tasks for which the agriculture sector is positioned as a base. However, in order to achieve poverty reduction and rural development through agriculture, based on the principles of inclusive, equitable and pro-poor growth, it needs commitment, accountability, transparency, participation and coordination (both horizontal and vertical) in its implementation, monitoring and evaluation.
- The respective sectoral policies in NCDP lack coherence and full integration from the point of view of achieving the overarching goals of food security, national development, climate resilience and adaptation, and climate change mitigation through promotion of CRSA. Moreover, although there are short-term five-year plans and long-term plans in the agriculture, livestock and fishery sectors, some short-term plans are not reflective of the long-term vision.
- It is encouraging that there is policy support in NCDP to promote investment both from domestic and foreign companies in agriculture inputs, post-harvest industrial crop processing and advanced technology, as well as for involving development partners, NGOs and the private sector in the development of National Agriculture Research and Extension Services (NARES). However, smallholder-friendly agricultural credit mechanisms need to be developed to encourage climate-resilient and sustainable technologies and practices.
- There is inadequate emphasis in NCDP on convergence and coherence of research, extension and education approaches that enable improved access to quality extension services for smallholder farmers. Resource allocation for research and extension services for smallholders is also inadequate. A strong link between research and extension in the short- and long-term plans of the livestock and fishery sectors appears to be lacking.

- Notwithstanding the adoption of NEP as early as 1995 and the establishment of National Commission for Environment Affair in 1990, the commitment towards pursuing the policy has been very weak. Awareness of the existence and the role of NEP and National Environment Conservation Law at both operational and senior levels of government is unclear.
- Although the CDZ suffers from unique constraints and problems, there is no CDZ-specific policy. The Dry Zone is also vulnerable to disturbances in the ecology of the surrounding mountain areas. Given the impact of environmental degradation in the mountain areas on CDZ, promoting sustainable development of these areas is of paramount importance for CRSA, as well as overall poverty alleviation and rural development in the Dry Zone. This has not been adequately addressed from a policy perspective so far.

Assessment of existing institutions and processes:

- The efficiency of NEP, NSPARD and NCDP in promoting CRSA in CDZ is dependent on the institutions and processes that execute the policies and, if they are not dedicated or strong enough, the desired impact on CRSA in CDZ cannot be achieved. Due to the current top-down approach to decision-making in Myanmar, horizontal coordination among ministries and intersectoral collaboration among the departments of the same ministries is inadequate.
- Multilateral development agencies and other development partners have already committed a substantial amount of development aid. However, although improving gradually, the coordination with development partners, the private sector and NGOs is still nascent and constrained by existing mindsets and multi-layered departmental structures. There is also no systematic strategy for using the public budget to attract private spending.
- There are capacity limitations at various levels in government institutions. Directorates have insufficient capacity in terms of the number of staff and expertise to adequately deal with rural development and poverty alleviation issues. Management capacities of the lead agencies at the township level, such as the Township General Administrative Department, are also inadequate.
- There are challenges to engaging smallholders in policy-related institutions and processes. Private sector associations are currently not perceived as adequately representative of smallholders, which hinders engagement of smallholders in policy formulation and implementation through these institutions. Moreover, farmer associations are not able to effectively influence or contribute to policies.
- The commitment to monitoring the performance of policies, legislations and laws on the ground has been inadequate. Engagement of the private sector, community-based organizations and local stakeholders remains largely limited to project frameworks rather than part of structured political or policy processes.

Key recommendations

Policy-related recommendations

- Formulate an overarching, integrated National Sustainable Development (NSD) policy encompassing NEP, NSPARD and NCDP, with emphasis on agroecological zone-specific strategies to address locally appropriate adaptation and mitigation actions for CRSA in CDZ. An evidence base should be built to inform agroecological zone-specific action which can also contribute to NSD policy.
- Identify and upscale local solutions in view of the vulnerability of the CDZ to low precipitation and soil degradation. Invest technical and financial resources for encouraging crop and livelihood diversification, value addition and post-harvest processing in the Dry Zone in order to positively impact incomes and livelihoods.
- Accord due priority to the sustainable development of mountain regions surrounding the CDZ during the process of formulating CRSA policies and strategies for the CDZ, including the need to reduce the environmental risk posed by activities in the mountain regions to agriculture in CDZ.
- Create incentives to attract the private sector to invest in agriculture, including areas such as agro-processing for value addition, market development for traditional products and use of renewable resources.

Institution-related recommendations

- Build the capacity of government staff at different levels to coordinate policy implementation across multiple policy areas, including rural development and poverty alleviation, and across different ministries and departments. Capacity development for managing other developmental, institutional and financial issues should also be addressed.
- Empower regional and local governments to participate in the formulation and implementation of policies supporting CRSA in CDZ, and provide regional and local governments, civil society organizations, private sector and farmers' associations with adequate representation in relevant institutional frameworks.
- Strengthen coordination among research and extension services for promoting CRSA in the Dry Zone, by engaging local non-government organizations (LNGOs), international non-government organizations (INGOs) and the private sector to disseminate improved technologies to smallholder farmers. Moreover, local commodity exchange centres should be involved in value chain development of Dry Zone crops.
- Address the issue of insufficiency of extension staff in terms of quantity and quality, and inaccessibility of extension services to smallholder farmers.
- Facilitate a political platform for interaction between the enabling agency, delivery agencies and user groups to utilize the farmer field school approach to empower farmers, establish farmer associations and strengthen farmers' capacity to undertake advocacy and influence policy decisions.

Process-related recommendations

- Promote better, more structured coordination and cooperation among MOALI, the Ministry of Natural Resources and Environmental Conservation (MNREC) and other

government stakeholders to leverage integrated natural resource management for better adaptation, resilience to and mitigation of climate change. Cooperation should be fostered at the horizontal level between regional and local authorities, and also at the vertical level within national institutions and ministries.

- Support participatory approaches that involve grass-roots stakeholders in policy and programme monitoring and evaluation processes, and institutionalize mechanisms to integrate outcomes of monitoring and evaluation in future policy and programme design through effective coordination among various stakeholders. Community participation in collecting information and knowledge should also be enhanced through application of methodologies such as participatory rural appraisal.
- Undertake more intensive resource mobilization and pooling of funds by harnessing the government budget as well as other sources, including the evergreen development funds from DRD, loans from Myanmar Agricultural Development Bank (MADB), development partners' funds, and microfinance to meet the requirement of CRSA in CDZ, while taking into account needs of smallholder farmers. Mechanisms for local stakeholders to access financial resources should also be simplified and made responsive to the needs of the CDZ.

Proposals

Based on the recommendations, some specific proposals for follow-up activities that can lead to concrete action in support of CRSA in CDZ are as follows:

- Organize a workshop to promote coordination and exchange experiences and lessons learned on CRSA among the three regions of the Dry Zone. Support the establishment of a Dry Zone region multi-stakeholder working group to transform the experiences and lessons learned from NSPARD into practical recommendations for CRSA in the CDZ.
- Establish a knowledge inventory centre as a hub for sharing the large amount of knowledge that is being generated on policy and programme implementation and impact on stakeholders.
- Set up a Central Dry Zone Commission for Sustainable Development with ministerial-level representatives from Mandalay, Magway and Sagaing regions. The Commission should have a consultative board of representatives of local authorities, line departments, the private sector and development partners. The board should be assigned the responsibility of drafting, in a participatory manner, and submitting for approval to the Commission a CRSA action plan for CDZ. After approval, the action plan can be submitted to the national level for endorsement and policy support. The Commission should have the authority to oversee implementation, monitoring and evaluation of the plan.
- Undertake a feasibility study for setting up a well-integrated value chain for pulses. This should have the township agriculture commodity exchange centre as a key stakeholder and involve farmers, traders, financial institutions, input suppliers and departmental personnel from NARES.
- Explore opportunities for tapping Global Environment Facility (GEF), United Nations Framework Convention on Climate Change (UNFCCC) and Kyoto Protocol-linked funds for least developed countries for adaptation projects in agriculture.

Background and Introduction

1.1 Introduction and objectives of the case study

The Dry Zone of Myanmar covers about 13 per cent of the country, with a population of approximately 14.5 million people.² It suffers from high levels of poverty and food insecurity. Agriculture is important to livelihoods and the key crops include rice (both irrigated and rain-fed), pulses (pigeon pea, chickpea) and oil crops (sesame, groundnut, sunflower).³ Climate change is among the key threats to sustainability of the agricultural sector in the Dry Zone, which is being increasingly impacted by unfavourable conditions such as a combination of periods of low precipitation and unpredictable monsoon rains. The most severely affected are the poor, rural families, whose livelihoods and welfare are primarily dependent upon agriculture and this is leading to income instability. Other threats to sustainability include severe land and environmental degradation. This means that farmers have to farm inherently poor and fragile soils, while constrained by their ability to afford inputs and limited knowledge of coping strategies. In this context, building sustainability and climate-resilient agriculture in the Dry Zone is of critical importance.

Sound rural and agricultural development policies are vital to strengthening the climate resilience and sustainability of agriculture in Myanmar's Dry Zone. In this context, an assessment of existing policies to identify their strengths and weaknesses will highlight areas that require improvement. At the same time, this study also examines the institutions and processes involved in their formulation, implementation, monitoring and evaluation to see how these can be improved to support better policy formulation and implementation.

This study aims to examine the existing policies, institutions and processes (PIPs) for supporting climate-resilient and sustainable agriculture (CRSA) in Myanmar's Dry Zone. The specific objectives are to:

- (i) Identify the problems and priority issues that are facing the Dry Zone in the area of sustainability and climate resilience of agriculture.
- (ii) Evaluate the overall strengths and weaknesses of policies in terms of supporting CRSA in the Dry Zone, as well as the main institutions (or governance structures) and

² <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp234780.pdf?iframe>

³ http://www.lift-fund.org/sites/lift-fund.org/files/uploads/Dry_Zone/MercyCorps%20DZ%20of%20Myanmar.pdf

processes involved in their formulation and execution.

- (iii) Frame general recommendations to improve the policy scenario as well as the institutions and processes involved in the formulation, implementation and evaluation of the policies.
- (iv) Offer proposals for concrete, action-oriented follow-up activities to put the recommendations into practice.

In particular, this study analyses the role of the National Environment Policy (NEP), the National Comprehensive Development Plan (NCDP) and the National Strategy on Poverty Alleviation and Rural Development (NSPARD) in supporting climate-resilient and sustainable agriculture (CRSA) in Myanmar's Dry Zone, as a specific case of PIPs. It should be noted that the National Climate Smart Agriculture Strategy was promulgated only recently in November 2015 and, hence, it was not analysed in this study. For the same reason, the recently published National Land Use Policy and Myanmar Investment Law (draft) have also not been considered.

1.2 The social, economic and agricultural context of the Central Dry Zone

The Central Dry Zone (CDZ) is located in the central part of Myanmar, surrounded by Kachin State in the north, Shan State in the east, Chin and Rakhine states in the west and Bago region in the south. It is separated from Shan state by the eastern mountain range, from Bago region by the Bago mountain range, and from Chin and Rakhine by the western mountain range. There are two major rivers passing through the CDZ: the Irrawaddy, through the central part, and the Sittaung, through the eastern part. The CDZ is composed of arid and dry areas of Sagaing (18 out of 34 townships), Mandalay (22 out of 26 townships), and Magwe regions (18 out of 25 townships) (Kahan, 2001).

Based on the studies done so far, three types of agroecological zones have been recorded in the CDZ: (i) flood plains and irrigated zone, flood plain with fertile soil, irrigated land and multiple cropping possibilities; (ii) dryland farming zone, low land, no flood plain, no irrigation, suitable for only single cropping, very little double cropping; and (iii) highland sloping zone, with land more than 300 m high, suitable for orchard and plantation (Save the Children, WFP and the Ministry of Livestock, Fishery and Rural Development, 2014).

Despite the diversity and potential of CDZ, due to its relatively harsh climatic conditions and high risk of disasters, there are few commercial investments, making it one of the most marginalized parts of the country. This is also true for the state of agriculture. The various factors contributing to the marginalization of agriculture in the CDZ are summarized in Table 1.1

Table 1.1 Factors contributing to marginalized state of agriculture in the Dry Zone

Production-related factors	<ul style="list-style-type: none"> ■ Low fertility of the soil, low access to irrigation and uncertainty of rainfall are the main causes of low agricultural productivity. ■ Lack of knowledge and availability of post-harvest technologies and facilities also contribute to low agricultural productivity.
Economic factors	<ul style="list-style-type: none"> ■ Small and scattered holdings: Due to small land holding size, and uncertain rainfall pattern and erratic distribution, most of the smallholders find it difficult to make ends meet. As many as 40 per cent of households were reported to be landless in the CDZ in 2014 (Save the Children, WFP and the Ministry of Livestock, Fishery and Rural Development, 2014). ■ Low marketable surplus and indebtedness: The low fertility of the soil means that smallholder farmers produce only low quality marketable surplus. The lack of credit system for farmers exacerbates the condition. Farmers thus turn to local moneylenders, who charge high rates of interest, increasing debt. The indebtedness of farmers is the main driving factor for migration of smallholders to other countries.
Health and demographic factors	<ul style="list-style-type: none"> ■ The CDZ has a higher population density than the Union average (114.6/km² versus 76/km²) (Ministry of Immigration and Population, 2015). ■ Although food security has improved since 2010 (World Food Programme, 2011), there continues to be high prevalence of low birth weight, wasting and stunting in children and a high rate of undernutrition in pregnant and lactating mothers. As the main indicator of acute malnutrition, the rate of wasting (12.3 per cent) is of 'high' public health concern (WHO, 2000); whereas the rate of stunting, the indicator of chronic malnutrition, is of 'medium' public health concern (WHO, 2000). ■ The percentage of households in which one or more members has migrated is notably high (36.3 per cent) in the dryland farming zone and the highland farming zone (Save the Children, World Food Programme, and the Ministry of Livestock, Fishery, and Rural Development, 2014).
Environmental factors	<ul style="list-style-type: none"> ■ CDZ is affected by various degrees of soil erosion and land degradation, leading to chronic food insecurity in some parts and a high incidence of poverty. ■ The degradation of soil and incidence of erosion in CDZ has been observed to be accelerating with increasing population pressure. There is also evidence suggesting that the frequency of drought in the Dry Zone has increased over the last two or three decades (FAO and UNDP, 2001).

1.3 Explanation of terms

An explanation of the key terms relevant for this analysis is provided below.

Policies: 'Policy' can be defined as decisions taken by those with responsibility for a given issue. These decisions usually take the form of statements or formal positions, which are then executed by the bureaucracy.

Institutional settings: Policymaking is an incremental process that requires continuous interaction between the state, civil society and the private sector. Thus, when assessing

policies within a given country, it is important to identify the kinds of governmental, civil society and private sector institutions that exist and to see how they are involved in the policymaking process.

Processes for policy decision-making: Processes are concerned with the formulation, implementation, monitoring and evaluation phases of policy development. For instance, processes can include political processes, participatory processes, knowledge management procedures and resource mobilization processes.

Climate-resilient and sustainable agriculture: Terms such as “climate-resilient and sustainable agriculture”, “conservation agriculture”, “organic agriculture”, “eco-efficient agriculture” and “agro-ecology” may differ in specific details, but all advocate a holistic approach. A more recent term is “climate-smart agriculture (CSA)”, which seeks to maximize benefits and minimize negative trade-offs across the multiple objectives that agriculture must address, i.e. food security, economic development, climate change adaptation and mitigation. Key elements of CSA include increasing productivity and the resilience of agricultural systems, reducing GHG emissions, enhancing carbon sequestration and managing interfaces with other land uses (Meridian Institute, 2011).

The CSA approach also aims to strengthen livelihoods and food security, especially of smallholders, by improving the management and use of natural resources and adopting appropriate methods and technologies for the production, processing and marketing of agricultural goods. To maximize the benefits and minimize the trade-offs, CSA takes into consideration the social, economic and environmental context of where it will be applied. Repercussions on energy and local resources are also assessed. A key component is the integrated landscape approach that follows the principles of ecosystem management and sustainable land and water use (FAO, 2013). The overall analysis in this study is aligned with the CSA approach.

1.4 Brief overview of the framework of this case study

The overall purpose of this case study is to provoke thought and action, engaging relevant stakeholders at various levels of administration in improving PIPs to support CRSA in the Dry Zone. In this, the study attempts to assess and provide an understanding of the strengths and weaknesses of the NEP, NCDP and NSPARD as specific cases to address CRSA in the CDZ. This assessment also seeks to formulate recommendations and proposals for follow-up action that can help to improve PIPs. It is important to point out that this assessment does not present an in-depth analysis of policies in a specific agriculture subsector, but provides a cross-sectoral understanding, paying close attention to the context of small- and medium-sized farms.

1.5 Description of the study tools

A qualitative assessment was conducted. The main tools utilized are literature reviews (see references) and interviews of key informants from government and civil society organizations (CSOs), development partners, and NGOs in diverse sectors relating to CRSA. These were conducted in an iterative manner in Yangon, Nay Pyi Taw and during a field visit to the Dry Zone.

In Yangon, the organizations involved included:

- United Nations entities: Food and Agriculture Organization of the United Nations (FAO) and United Nations Office for Project Services (UNOPS), which is the fund manager for the Livelihoods and Food Security Trust Fund (LIFT)
- Private sector organizations: Myanmar Rice Federation (MRF), Myanmar Pulses Bean and Sesame Seed Merchant Association (MPBSA) of the Union of Myanmar Federation of Chambers of Commerce and Industry (UMFCCI)
- International non-government organizations (INGOs): GRET, Action Aid.

The majority of the key informant interviews were conducted during visits to Nay Pyi Taw and field sites in the Dry Zone covering Meikhtilar, Nuang Oo, Pakkoku and Magwe, between 2 and 14 September 2015. The organizations met included:

- Government: Department of Agricultural Planning, now renamed the Department of Planning (DOP), Department of Agriculture (DOA), Department of Agricultural Research (DAR), Department of Rural Development (DRD) and Yezin Agricultural University (YAU)
- Bilateral organizations: Japan International Cooperation Agency (JICA) at Nay Pyi Taw
- Township Development Support Committee, Township Administration Office, Township Rural Development Offices or Departments, Township Agriculture Department, farmers groups, and Township Planning Department at Meikhtilar
- Water Saving Agriculture Technology Project of JICA at Naung Oo
- Dry Zone project manager of Action Aid, Township Agriculture Department, Township Rural Development Department, Township Administration Department, Township Planning Department, Township Commodity Exchange Center, farmers group, and Township Development Support Committee at Pakkoku
- DAR Farm, Food Security Working Group, Magwe Campus of Yezin Agricultural University and Green Network Sustainable Group at Magwe.

The survey covered questions related to policy framework, processes and mechanisms, stakeholder involvement in decision-making and partnerships, managing and building up the knowledge base, management systems and resource mobilization.

Governance Structures and Institutional Setting for Policies to Support Climate-Resilient and Sustainable Agriculture

This chapter outlines the existing governance structures and institutions which influence policies for promoting CRSA in the Dry Zone. The focus is on three key policies/policy frameworks, which influence climate resilience and sustainable agriculture in CDZ, namely the National Environment Policy (NEP), the National Strategy for Rural Development and Poverty Alleviation (NSPARD), and the National Comprehensive Development Plan (NCDP). The NEP covers Myanmar Agenda 21, Climate Change Strategy, Reforestation Policy, Bio-diversification Conservation Policy, and the Environment Conservation Law. The NCDP is a 20-year long-term development plan (2011-2012 to 2030-2031) and together with the Fifth Five Year Plan (2011-12 to 2015-2016) it comprises the National Development Plan. The Agriculture Development Plan is included in the NCDP as a sectoral development plan. (JICA, 2013). The NSPARD was laid down at a national workshop held on 20-22 May 2011, in the framework of the reform process, emphasizing development of agro-based industries, equitable sharing of resources among the states and regions, promotion of local and foreign investments, effective implementation of people-centred development and poverty reduction. The key measures of the reform process are progress in land reform, promotion of access to credit and creation of job opportunities (ADB, 2013). More details of the NEP, NCDP and NSPARD are provided in the next chapter in the context of existing policy frameworks.

2.1 Institutions for implementing NEP

The Government of the Republic of the Union of Myanmar (GORUM) established the National Commission for Environment Affairs (NCEA) in 1990 as a policy body for environmental protection, and as a focal point and coordinating agency for environmental affairs. At first, NCEA was under the jurisdiction of Ministry of Foreign Affairs (MOFA) and then designated to the Ministry of Forest, whose name was changed to the Ministry of Environmental Conservation and Forestry (MECF) in 2012. In the wake of the promulgation of the Myanmar Environmental Conservation Law (MECL) in 2012, the National Environment Conservation Committee (NECC) was established to implement the objectives of MECF. In 2016, during the era of new civilian government, after amalgamating with Ministry of Mines, MECF became the Ministry of Natural Resources and Environmental Conservation (MNREC). NECC was not among the committees which were abolished by the new GORUM (Notification No 36/2016 issued by the President Office on 29 March 2016).

2.2 Institutions for implementing the NCDP and NSPARD

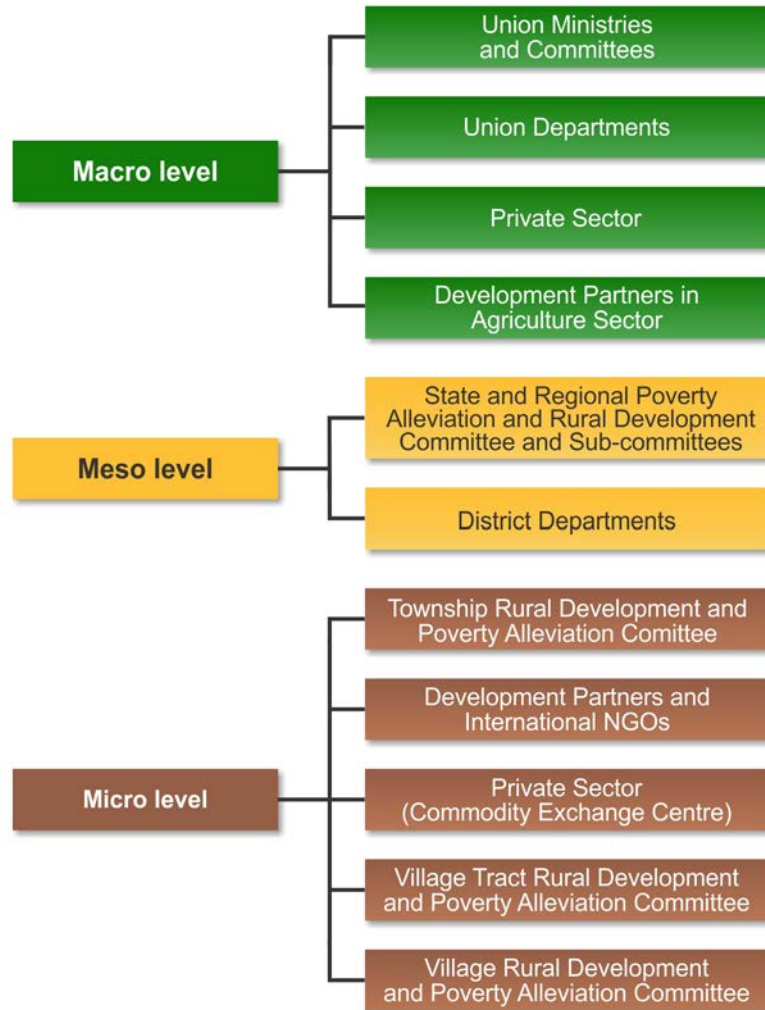
The institutional setting for implementation of NCDP and NSPARD, in the context of CRSA, can be divided into institutions at the macro (union/national), meso (state/region and district) and micro (township and village) levels. These institutions include government committees, ministries and departments, private sector entities and other development partners.

For NSPARD, until recently, the Central Committee was responsible for the adoption and supervision of NSPARD, with eight main tasks. Under the Central Committee, there was the Central Working Committee for NSPARD, which was in charge of the implementation and support of the performance of the main tasks of NSPARD. At the level of the state/region and Nay Pyi Taw Council, there were working committees, chaired by the respective chief minister of the state/region to implement the NSPARD. There were also working committees at the district and township levels. In order to accelerate the momentum of the performance of the poverty alleviation and rural development work, the Rural Development Department was moved from the Ministry of Border Affairs to the Ministry of Livestock and Fisheries in 2013 and the ministry renamed as the Ministry of Livestock, Fisheries and Rural Development (MLFRD). Relevant ministries were members of the Central Working Committee and supervised the performance of NSPARD. Implementation of poverty alleviation and rural development activities was delegated to the district and township levels. At every township, there were township development commissions, the institutions formed by the previous president to interface between the public and private stakeholders in carrying out the development works. In addition, ministries related to the agriculture sector were also important, contributing towards the development of PIPs to support CRSA in the CDZ. Moreover, private sector institutions, such as UMFCCI, MRF and MPBSA, township commodity exchange centres, farmer associations, LNGOs and CSOs, development partners and multilateral and bilateral organizations were the main stakeholders supporting CRSA in the CDZ.

Some developments have taken place recently. Under President H.E. U Htin Kyaw and the GORUM, which assumed office in April 2016, MLFRD, along with the Ministry of Cooperative, were put under the Ministry of Agriculture and Irrigation (MOAI) and the ministry renamed the Ministry of Agriculture, Livestock, and Irrigation (MOALI). The Central Committee and working committees from central to township level for NSPARD were abolished (Notification No 36/2016 issued by the President Office on 29 March 2016). Work related to poverty alleviation and rural development is now under the jurisdiction of the Director General of DRD of MOALI. Although there has been no official announcement about NSPARD and NCDP so far, irrespective of their future course, the analysis of NEP, NCDP and NSPARD in this case study and the insights gained will contribute to better formulation and implementation of policies for agricultural and rural development in the future.

The overall institutional landscape in the context of NCDP and NSPARD is presented in Figure 2.1. A detailed description of the institutions is provided in Appendix 1.

Figure 2.1 Institutional landscape for NCDP and NSPARD



2.3 General processes for sectoral planning and decision-making

Based on the direction of the minister (or the cabinet), the development plan for agriculture is drafted by the respective departments of MOALI and then submitted to DOP. After being checked by DOP, it is then submitted to the ministers. At the Union Minister's Office, vice ministers check the ministry's development plan and submit it to the minister for a final check. Eventually, the Ministry of National Planning and Economic Development (MNPED) compiles development plans from all the ministries and integrates them into the draft NCDP. MNPED ultimately submits the draft NCDP to parliament for final approval. For region- and state-level development plans, the constituent plans are drafted by each department, submitted to each minister's office at regional and state government level, and then, after checking, are submitted as a Regional Agriculture Plan. Then, the Region/State Minister of Agriculture submits the regional plan to the Union Minister of Agriculture and Irrigation. The Union Minister checks the plan and provides DOP with comments. The plans are then sent to the MNPED (JICA, 2013).

In the private sector, most of the institutions make decisions based on agreements at Central Executive Committee meetings. The development partners and NGOs frequently apply inclusive processes, and empower the communities of their targeted villages to practice participatory approaches.

Policy Framework for Supporting Climate Resilience and Sustainable Agriculture in the CDZ

In Myanmar, rural development and agriculture-related policies have changed, following the political systems the country has undergone from the Royal Dynasty to the elected GORUM in 2011. Until the rural development policy was enacted in 1954, there was only an agriculture policy (Hlaing, 2004).

This chapter provides an overview of the overall policy framework as it pertains to agriculture and agri-related sectors in the CDZ and other major economic, social, environmental and institutional policies, encompassing the NEP, NCDP and NSPARD, in particular. It elaborates on policies in the agriculture, livestock and fisheries sectors, which are outlined in a sectoral development plan within the NCDP. The chapter also discusses the current laws and by-laws that relate to the agriculture sector.

3.1 National Environment Policy, National Development Policy and Plan, and National Strategy on Poverty Alleviation and Rural Development

3.1.1 National Environment Policy (NEP)

The Government of Myanmar signed the United Nations Framework Convention on Climate Change on 11 June 1992 and, in the wake of the ratification of the UNFCCC on 25 November 1994, promulgated NEP in 1994. The aim of the NEP is to achieve harmony and balance between the wealth of the nation, its people and its cultural heritage, through the integration of environmental considerations in the development process to enhance the quality of life of all its citizens. Every nation has the sovereign right to utilize its natural resources in accordance with its environmental policies, but care must be taken not to exceed its jurisdiction or infringe upon the interests of other nations. It is the responsibility of the state and its citizens to preserve the country's natural resources in the interests of present and future generations. Environmental protection should be a primary concern in seeking the development of a country (ADB, GEF, UNDP, 1988). The key constituents of the NEP are as follows:

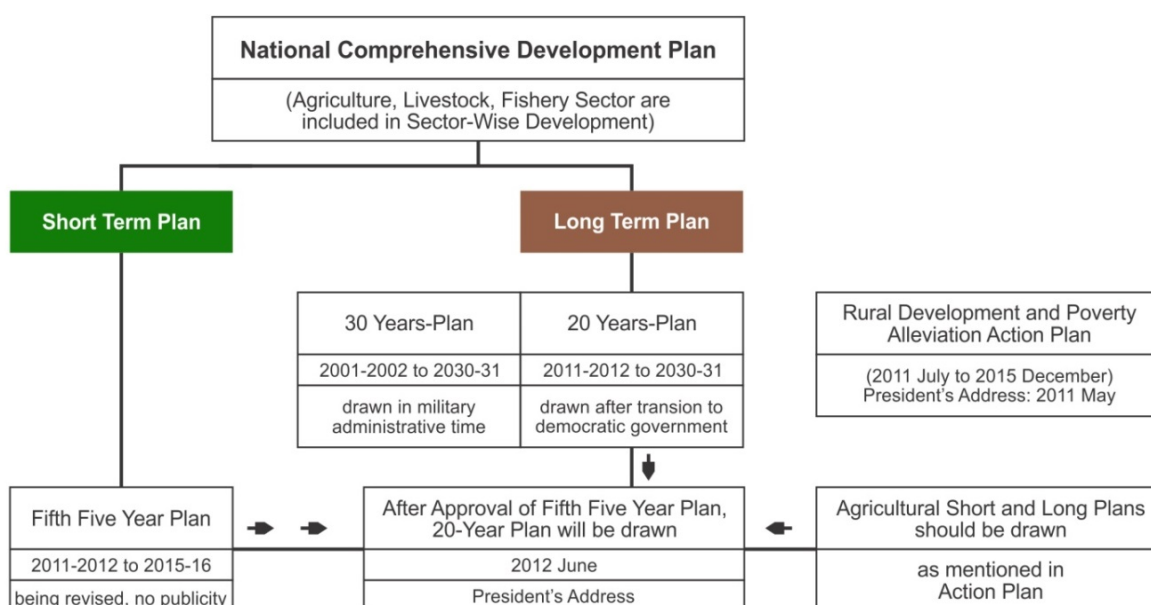
- a) **Myanmar Agenda 21 (MA21)**, which was approved by the cabinet of GORUM in 1997, aimed to provide a framework of programmes and actions for achieving sustainable development in the twenty-first century. It echoed the aims of the Global Agenda 21, but was adapted to the country's situation. MA21 was supposed to strengthen and promote systematic development and environmental management in the country. It called for the integration of environmental communities, and private and public sectors, in considering the environmental dimensions of economic development. In other words, MA21 was the road map for guiding protection of the environment and sustainable development of the country (ADB, GEF, UNDP, 1998).
- b) **Forest Policy:** As a fulfilment of NEP and in view of the importance of the Myanmar forestry sector in enhancing national socioeconomic development and ensuring ecological balance and environmental stability, the Myanmar Forest Policy (1995) was formulated in a holistic and balanced manner, focusing on: the protection of soils and water catchment areas; sustainable forest management, to ensure in perpetuity the level of accruing benefits; provision of basic needs such as fuel, water, fodder, shelter, food and recreation; efficiency in harnessing the full economic potential of forests; people's participation in forestry, wildlife and nature conservation activities and in establishing plantations and increasing non-farm incomes by encouraging community and agroforestry systems; and raising awareness of decision makers and politicians about overall national socioeconomic development, biodiversity, soil and water conservation and environmental stability essential for sustained life on Earth (FAO, 1997).
- c) **Climate Change:** Although the country's President at the time, H.E. U Thein Sein, stated during the 24th ASEAN Summit on 10 May 2014 that Myanmar had agreed to apply a CSA approach, Myanmar's Climate Smart Agriculture Strategy was published only at the end of 2015, written by MOAI in collaboration with CGIAR, CCAFS and IRRI (MOAI *et al.*, 2015). However, work on the Initial National Communication (INC) for climate change with UNFCCC was started as early as 1994, when the country ratified the UNFCCC. Myanmar participated in the Asia Least-Cost Greenhouse Gas Abatement Strategy Project, along with 10 other Asian countries, and completed and submitted its country abatement strategy to UNFCCC in 1998. In order to fulfil its commitments and obligations as required by Articles 4.1 and 12.1 of the UNFCCC, in 2011, Myanmar completed the preparation of its INC and submitted to the UNFCCC. The INC effort focused on analysing levels of GHG emission, climate change scenarios, associated risks and vulnerabilities, potential measures and technology transfer for mitigating climate change and the degree of public awareness on climate change issues. In 2012, Myanmar submitted its report of the National Adaptation Programme of Action (NAPA). The NAPA initiative emerged from the multilateral discussions on adaptation measures within the UNFCCC and the plans provide a simple and quick channel for least developed countries to identify and communicate priority activities to address their urgent adaptation needs. Myanmar's NAPA specifies 32 priority projects for effective climate change adaptation in eight main sectors/themes, namely (i) agriculture; (ii) early warning systems; (iii) forest; (iv) public health; (v) water resources; (vi) coastal zone; (vii) energy and industry; and (viii) biodiversity.

- d) **Conservation of Biodiversity:** Myanmar submitted the 4th National Report on National Biodiversity Strategies and Action Plan to the United Nations Convention on Biological Diversity in 2009 (NCEA, 2009).
- e) **The Environment Conservation Law:** To enable implementation of the Myanmar NEP, the Myanmar National Environment Conservation Law was enacted in 2012.

3.1.2 National Comprehensive Development Plan

As noted in the previous chapter, the National Development Plan consists of the NCDP (2011-2012 to 2030-2031) and the Fifth Five Year Plan (2011-12 to 2015-2016). The Agriculture Development Plan is included in the NCDP as a sectoral development plan. (JICA, 2013). The development plans of other agri-related sectors are similarly included in the NCDP (please see section 3.2 below).

Figure 3.1 National Comprehensive Development Plan



Source: JICA, December 2013. Assessment Survey on Agriculture

3.1.3 National Strategy on Poverty Alleviation and Rural Development (NSPARD)

The NSPARD was laid down at the national workshop held from 20 to 22 May 2011, within the framework of the reform process, with an emphasis on agro-based industries development, equitable sharing of resources among states and regions, promotion of local and foreign investment, effective implementation of people-centred development and poverty reduction. Some of the key measures in the reform process were land reforms, and promotion of access to credit and creation of job opportunities (ADB, 2013). For the further development of NSPARD, a Central Committee was formed, comprised of the Working Committee under Union Government, the state and region working committee at the state and region level, and the Township Organization at the township level (JICA, 2013). However, as already noted, the Central Committee and working committees from central to

township level for NSPARD were abolished by the new GORUM that took office in 2016 (vide Notification No 36/2016 issued by the President's Office on 29.03.2016).

The objective of NSPARD was to reduce the poverty level from 26 per cent in 2004-2005 to 16 per cent by the end of 2015 to achieve Millennium Development Goal (MDG) 1. It focused on eight outputs, namely: (i) agriculture production sector development; (ii) livestock and fisheries sector development; (iii) rural small-scale industry development; (iv) development of microsaving and credit enterprises; (v) rural cooperative development; (vi) rural energy development; (vii) environmental conservation; and (viii) private microcredit system development. NSPARD was implemented in 2011 and has received cooperation from as many as 22 United Nations entities and INGOs, and six multilateral and bilateral organizations, including support for three key rural development initiatives, namely community-driven development projects (financed by the World Bank), the Rural Livelihood Enhancement Project (supported by Asian Development Bank) and Evergreen Village Development Project (financed by Myanmar Government) (MLFRD, 2014).

Policy on Rural Development: Until September 2013, rural development work was under the jurisdiction of the Ministry of Border Affairs. However, in 2013, it was moved to the Ministry of Livestock and Fisheries, the name of which was subsequently changed to MLFRD. To achieve the MDG of reducing poverty to 16 per cent by 2015, MLFRD worked on five strategies aimed at pulling 6 million people above the poverty line and synergizing two different levels of development plans, namely the participatory development plan at village level and decentralized regional plan at district level, in order to enable a multiplier effect on poverty reduction. These strategies included empowering the community to participate in drawing their village development plans; organizing local authorities at the district level to decentralize and involve stakeholders in the policymaking process for rural development interventions; establishing development funds at the township and district levels and mobilizing resources in transparent and accountable ways; establishing an inclusive consortium of all stakeholders to support processes for rural development and poverty alleviation interventions at the national, regional, district, and township levels; and finally fostering good governance in processes for rural development and poverty alleviation (MLFRD, 2014).

3.2 Policy on agriculture, livestock, fisheries sectors (sectoral development plan within NCDP)

3.2.1 Agriculture sector development policy

The NCDP consists of sectoral development plans from all ministries. Based on guidelines from the President, all ministries had to draw up development policies at workshops held at the state and regional level, incorporating suggestions from the participants of the workshops. Participants included officers from the respective departments at the state, regional, district and township levels. Upon the approval from the Congress, the states would then implement the development plans. Accordingly, MOAI, MLFRD and other agri-related ministries held a workshop on formulation of the respective sector development policies and action plan, and based on the outcomes of the discussions, the Agriculture Development Policy and other agri-related sector development policies were formulated. This led to the 20-Year Long-term Development Plan (2011-2012 to 2030-2031) and the Fifth Five Year

Short-term Development Plan (2011-2012 to 2015-2016) (JICA, 2013). The key elements of the agriculture sector development plans are outlined in Table 3.1.

Table 3.1 Key elements of agriculture sector development plans

20-Year Development Plan in Agriculture Sector (2011-2012 to 2030-2031)*	
Enhancement of agricultural productivity	- Produce and distribute of high-yielding, good quality seeds - Provide other agricultural inputs
Enhancement of technologies and extension services	- Reform towards mechanized farming - Reform towards irrigated farming - Promote research and development
Improving access to markets	- Focus on high value added agricultural products - Promote of agro-based Industries - Focus on sustainable markets
Agriculture statistics	- Develop of reliable statistics
Agricultural law and regulation	- Review, evaluate and revise the existing agricultural laws and regulations
Information and media	- Improve information and media resources for better accessibility to farmers
Fifth Five Year Development Plan (2011-2012 to 2015-2016)	
Enhance agriculture productivity	- Promote and use good quality, high-yielding seeds - Increase irrigated area - Utilize machines in agricultural production - Apply agricultural inputs, such as irrigation water, chemical and natural fertilizers, effectively
Strengthen research and development, and extension services	- Extend modern agro-techniques - Conduct research and development - Train more agricultural technicians
Strengthen markets	- Reduce production and transaction costs along the supply chain - Establish and obtain benefits of sustainable market for crops - Develop agro-based industry
Fifth Five Year Development Plan (2011-2012 to 2015-2016)	
Promote investment in the agriculture sector	- Promote of investment by private sector in agro-production
Protection of farmers	- Provide agricultural loans for crop production
Develop agriculture laws and regulations	- Draw the revised act in line with current situation
Improve statistics	- Establish the accuracy of agricultural statistics
To implement rural development and poverty alleviation	- Promote capacity-building of staff, effective and efficient organization, and greater collaboration with regional and international organizations

*Source: National Comprehensive Development Plan, Agricultural Sector Development, MOAI (2012)

3.2.2 Livestock and fishery development policy (2011-2012 to 2030-2031)

The Livestock and Fishery Development Policy consists of three major components outlined in Table 3.2.

Table 3.2 Major components of Livestock and Fishery Development Policy

20-Year Livestock and Fishery Development Policy	<ul style="list-style-type: none"> - Encourage high-quality breeds of livestock and fishery - Achieve all-round development in livestock and fishery - Increase meat and fish production for domestic consumption and export the surplus to neighbouring countries - Enhance investment in the livestock and fishery sectors - Expand prawn breeding farms - Preserve the natural resources inland and offshore - Speed up the development momentum of inland fishery sector for the needs of domestic consumption
Livestock Sector Short-Term Development Policy (2011-2012 to 2015-2016)	<ul style="list-style-type: none"> - Improve animal population resources and livestock production - Conserve the genetic resources and promote proper utilization of indigenous breeds - Control animal diseases - Produce the required biological products against infectious diseases - Transfer the appropriate technical knowledge to farmers
Fishery Sector Short-Term Development Policy (2011-2012 to 2015-2016) Freshwater Fishery	<ul style="list-style-type: none"> - Use the system of custom base capture in fishery - Protect against water pollution and seasonal water currents in leasable area - Protect and avoid harvesting immature fish or those of low population size - Stock fish seed yearly and use species which cause least harm

3.2.3 Value-added processing policy

Building up production of the value-added agro-products and promoting agro-based industries is one of 11 priority policies of the agriculture sector as stated in the NCDP. For this purpose, 10 Action Plans for value-added agro-production are indicated in the plan.

3.2.4 Agriculture marketing policy

In the NCDP, the value-added processes and quality improvement are central to the Agriculture Marketing Policy. Since agriculture value addition is already included in the Value-Added Policy, only quality improvement strategies are emphasized in the Agriculture Marketing Policy, to improve access to domestic and global markets for smallholders by making them more competitive.

3.2.5 Policy on export and import of agriculture products

The policy to promote the export and import of agricultural products abolished export tax for agricultural products (except rubber, cotton, lacquer and dyes, exports of which were liberalized). The import tax for agricultural inputs, such as machinery, pesticides and fertilizers was also abolished. In addition, the administrative instruction for the Export and Import Law 2012 is being prepared by the Ministry of Commerce (MoC), to encourage smallholder farmers to produce and innovate more.

3.2.6 Agricultural credit policy

Of the four national financial institutions, only the Myanmar Agriculture Development Bank (MADB) is under the control of MOALI, while the three other banks (Myanmar Economic Bank, Myanmar Investment and Commercial Bank, and Myanmar Foreign Trade Bank) are

under the control of the Central Bank. The 19 private banks include: Global Treasure Bank Pub. Co. Ltd, formerly known as Livestock and Fishery Bank, Sibir Thar Yar Bank and Myanma Industrial Development Bank. There are 17 foreign banks which have branch offices in the country. However, among the financial institutions, only MADB and the Global Treasure Bank are allowed to lend to farmers. During the Fifth Five Year Short-term Development Plan period, the amount farmers could borrow from MADB increased 1.3 times, and the cultivation loan for one acre of paddy was increased from 20,000 to 100,000 kyat. However, the actual cost of cultivation for one acre of paddy was as high as 250,000 to 300,000 kyats, requiring rice farmers, who had access to MADB loans, to borrow from the local moneylenders for the rest of the money needed to cultivate rice.

The mandate of MADB law (1990) is to effectively support the development of agricultural and rural enterprises by providing banking services. The law allows three types of loan: (i) annual loan up to 1 year; (2) short-term loan of 1-4 years; and (iii) long-term loan of 4-20 years. Although the law gives MADB a mandate to provide financial services to a broad spectrum of borrowers, the MADB only provides loans to farmers for crop production, and almost exclusively to rice farmers due to financial constraints. While the MADB offers a low interest rate (1.3 per cent per month), the impact and scale of its loans remains limited in comparison with funding needs (OECD, 2014).

Microfinance is one of the eight priority areas of NSPARD; and the Microfinance Law, and Microfinance Notification and Directives were put in place in 2011. As of November 2012, there were as many as 118 microfinance institutes in Myanmar including six INGOs, 9 local NGOs, 60 cooperatives, and 43 domestic farms (Duflos *et al.*, 2013).

3.2.7 Private investment in agriculture

Myanmar has put policies in place to encourage private sector investment in agriculture in three ways: (i) private investment as part of the 20-Year Development Plan for Agriculture; (ii) foreign investment promotion; and (iii) small- and medium-industry development.

a) 20-Year Development Plan for Agriculture

The NCDP calls for investment both from domestic and foreign companies in agriculture inputs, post-harvest, industrial crop processing and advanced technology. The five national strategies to promote investment are: the development of quality seeds and agricultural inputs; processing of industrial crops; value addition and storage facility provision for high export materials; development of a participatory approach involving development partners, NGOs and the private sector for National Agriculture Research and Extension Services (NARES); and the establishment of monitoring and evaluation system for agriculture sector projects in line with the ASEAN Economic Community agreement.

b) Foreign investment

There are three investment laws in Myanmar: (i) restriction of foreign investment based on laws and practices, such as the National Enterprise Law, Company Law and Conveyance Limitation Law; (ii) preferential treatment based on Foreign Investment Law; and (iii) preferential treatment for firms that move into the Special Economic Zone.

c) **Small Medium Industry Law**

MOC formulated the Small Medium Industry Law to support agribusinesses and to enhance their competitiveness in global markets. According to the Department of Trade Promotion (DTP), 40 per cent of 40,000 small and medium industries in Myanmar were rice mills and pulse-processing mills. This law could thus encourage farmers to innovate.

3.2.8 **Farmers' association policy**

Although there are farmer associations in the country set up by the line departments, they are not really involved in the exchange of technology or in representation of farmers. Most of these farmer groups are designated as farmer groups for extension, or serve as water-user groups for utilization of irrigation or conventional water-user groups for pump irrigation. There is a system of collecting water fees for water-user groups. Although the groups are intended to develop collective effort, because of the top-down nature of their establishment, the farmer groups are not empowered to advocate their needs. Matsuno *et al.* (2007) state that water-user groups are not functioning well.

3.3 **Laws and by-laws relating to the agriculture sector**

Myanmar initiated transition towards democratic governance following the elections in 2011. However, the state of development of Myanmar's infrastructure, including the framework, laws and by-laws, is lagging behind that of neighbouring countries. Some of the key laws and by-laws in the areas of agricultural production, land, credit, trade and investment are listed in Table 3.3.

Table 3.3 Important laws and by-laws for Myanmar's agricultural sector

Agriculture production	<ul style="list-style-type: none">- Seed Laws (promulgated in 2011; JICA, 2013); procedures and regulations for seed businesses reflecting the Seed Law ratified in February 2016- Fertilizer Laws- Plant Protection Law consisting of Pesticide Law and Plant Quarantine Law (Pesticide Law was promulgated in May 1990)- Law on Bio-safety
Agricultural land	<ul style="list-style-type: none">- Farm Land Law- Vacant, Fallow, and Virgin Land Management Law
Agricultural credit	<ul style="list-style-type: none">- Financial Institutions Law (1990)- Myanmar Agricultural Development Bank Law (1990), under which the MADB operates
Export and import of the agricultural products	<ul style="list-style-type: none">- Export and Import Law, enacted by Parliament on 7 September 2012
Domestic and foreign investment in agriculture sector	<ul style="list-style-type: none">- Foreign Investment Law (1988) and the New Foreign Investment Law (2012)

3.4 **Tax systems related to agriculture**

In Myanmar, the taxes related to agriculture include land tax, water and embankment tax and taxes on fisheries, as described below.

3.4.1 Agriculture and tax

In line with the Vacant Fallow Virgin Land Management Law, the land tax value is 3,440 kyats per acre for perennial crops and aquaculture, 2,300 kyats/acre for horticulture crops, and 1,100 kyats/acre for seasonal crops and livestock.

3.4.2 Water tax and embankment tax

The Pyithu Hluttaw session of 1982, under Law 1, enacted the Water Tax and Embankment Tax Law. According to the enactment the viable rates are water tax at the rate of 10 kyats/acre (25 kyat/ha) for localities enjoying irrigable water from government diversions and reservoirs, embankment tax at the rate of 5 kyats/acre (12 kyat/ha) for localities under the protection of government embankment and drainage canals, and charges of 10 kyats/acre (25 kyat/ha) for localities enjoying both irrigation and flood protection facilities.

3.4.3 Tax on fishery

Persons engaging in any kind of fishery are required to pay tax in order to get a licence. The tax rate is determined for each fishery by tendering.

3.5 Government subsidy for agriculture sector

The government used to subsidize fertilizers, pesticides, fuel and seeds for farmers until the system was abolished in 2005-06. However, high-quality seeds are still distributed at lower prices, in some cases at half of the market price. Apart from this, the Water Resources Utilization Department operates and maintains pumping stations by using the government budget and the electricity cost is subsidized by the government up to 77 per cent.

Assessment of Policies Supporting Climate-Resilient and Sustainable Agriculture in CDZ

This chapter examines how well NEP, NSPARD and NCDP are supporting CRSA through an analysis of the positive and negative implications of their constituent sectoral policies and action plans for the agriculture, livestock, fisheries and forestry sectors (as outlined in chapter 3) and how these are perceived by stakeholders. The analysis is performed in the context of the Dry Zone situation (diversity, constraints and potential) and with reference to the positive and negative impacts on four pillars (social, economic, environmental and institutional). This chapter also presents a strengths, weaknesses, opportunities and threats (SWOT) analysis of the PIPs related to NEP, NCDP and NSPARD.

4.1 National Environment Policy and Natural Resource Management Policies

The Dry Zone is among the areas most vulnerable to environmental disasters, climate change and land degradation in Myanmar. With the ratification of UNFCCC, promulgation of the NEP (1994), NSD (2009), National Resource Management Policy, Forest Policy Statement (1995) and Forest Master Plan for 30 Year Period (2001-2030), establishment of forest reserves, enactment of related laws and strategies, including climate change strategies, and initiation of various soil conservation and land rehabilitation programmes by MOAI/MOALI, there has been greater focus on sustainable production intensification. This is generally having positive impact on the environment in the CDZ. NEP and its related strategies and plans, if mainstreamed in the development policy and committed to by all stakeholders as intended, can protect the forest cover in upstream mountainous regions, check the loss of biodiversity and ecosystem services, and alleviate the negative impact of climate change in the Dry Zone.

The NAPA, prepared within the framework of the Least Developed Countries Fund (LCDF) supported project, serves as a simplified, rapid and direct channel for Myanmar to identify 32 key activities that address urgent and immediate adaptation needs. Among these activities, adaptation for agriculture has been prioritized, especially for the Dry Zone. The first priorities address locally relevant technologies: climate-resilient rice varieties, and ex/in situ conservation of plant genetic resources, legume crop diversification and climate-resilient varieties; diversifying and intensifying home-gardens through solar-power technology, high-

income fruit crops and CSA approaches; and transfer of a wide range of high-yielding and climate-resilient rice varieties. These priorities, if adopted and pursued, are well-aligned to helping boost economic and social development (MECF, 2012).

However, there is no specific policy framework for the different agroecological zones (mountainous, dry and the delta and coastal zones). This has constrained the ability to address various critical issues, such as the impact of overexploitation of natural resources in the mountainous zone on other downstream zones. Moreover, the lack of mainstreaming of these policies, laws and strategies in the National Development Plan, weak commitment and coordination within the NECC, weak institutional structures, lack of financial and other incentive mechanisms, land tenure insecurity, inadequate access to markets, and lack of capable local research institutions have been key barriers for CRSA in the CDZ.

The Environmental Law has been in force since 2012. However, it had vested the MECF (now the Ministry of Natural Resources and Environmental Conservation, MNREC) alone with the responsibility of addressing the problem of pollution. The same is true with regard to the responsibility for addressing climate change. An environment policy should rather be formulated, implemented, monitored and evaluated through an inclusive and participatory approach. Moreover, it was reported that Myanmar has as many as 13 conventions and agreements related to climate and the environment dating from as early as 1959 to 2008 (ADB, 2013). These conventions and agreements should be mainstreamed into relevant policies.

4.2 Poverty Alleviation and Rural Development (NSPARD)

NSPARD is among the most important policy instruments for addressing poverty alleviation and rural development, with eight priority areas/tasks laid down by the first elected government in 2011. All eight tasks of NSPARD contribute towards the social, economic and environmental dimensions of agricultural development in Myanmar, including in the CDZ:

- (i) **Development of agricultural productivity** supports the access of smallholders to national research and extension services and quality inputs (especially quality seeds)
- (ii) **Development of livestock and fishery productivity and socioeconomic life of rural populace** supports integrated farming and alternative livelihood options
- (iii) **Development of rural small-scale productivity** increases job opportunities for farmers, reducing the percentage of households that have at least one family member migrating elsewhere
- (iv) **Development of saving and credit association facilities** improve the level of social protection
- (v) **Formation of influential farmers' or producers' associations** influence PIPs for agricultural development
- (vi) **Development of rural energy** contributes the small and medium enterprise development as an alternative income generation.
- (vii) **Environmental conservation** contributes to the development of participatory natural resource management
- (viii) **Data-collection** contributes to the development, planning, implementation, monitoring and evaluation of community-driven development projects.

Formulated with the advice, suggestions, and financial and technical assistance of experienced development partners, NSPARD is a valuable asset. However, as with other policy instruments, in order to achieve poverty reduction and rural development through agriculture based on the principles of inclusive, equitable and pro-poor growth, it needs commitment, accountability, transparency, broad-based participation and coordination (both horizontal and vertical) in its implementation, monitoring and evaluation.

4.3 National Comprehensive Development Plan: sectoral policy on agriculture, livestock and fisheries

4.3.1 Agriculture sector development policy

a) Enhancement of agricultural productivity

The action plan for seed production in the long-term comprehensive plan for agriculture sector (JICA, 2013) relies on private seed companies in Myanmar, and there is no action plan for developing seed-grower groups. The policy itself is well-formulated, but the action plan for seed production neglects the potential of the CDZ, since there is particularly high scope to increase yields through improved seeds, thus having a positive impact on the economy. However, there are some negative social, environmental and institutional impacts. The potential of local small seed-grower enterprises is not tapped (social impact), while the seeds produced by seed companies are exotic rather than local, reducing biodiversity (environmental impact). Moreover, there is no opportunity for the development of local seed-grower enterprises, resulting in a negative institutional impact.

The action plan for agricultural inputs aims to promote production of fertilizers through the private sector and foreign direct investment. There is no action plan for the production and utilization of organic fertilizers and green manure. With increased availability of fertilizer, the yield of pulses will be higher, favouring the potential of CDZ, and resulting in positive economic and social impacts in the short term. In the long term, negative social and economic impacts should be guarded against, since with longer-term use of chemical fertilizers the dosage might have to be increased, making the cost of cultivation higher. Excessive dependence on chemical fertilizers can also make the soil more prone to degradation and erosion (environmental impact). Apart from this, there is relatively less opportunity for farmers to work as a group when using chemical fertilizer, compared to many organic inputs (institutional impact). Overall, judicious use of chemical fertilizers and application of organic fertilizers should be encouraged to bring economic and environmental benefits and promote agricultural sustainability.

b) Enhancement of technologies and extension services

The Dry Zone witnesses seasonal migration of labour for employment, which is driven by low agricultural productivity and income, as well as inadequate alternative income opportunities. Promoting agricultural mechanization as a strategy can help to address seasonal labour migration. Agricultural mechanization can also help farmers adapt to climate change, whereby some farming operations need to be completed within a narrower time window. Measures to encourage modalities such as custom hiring of agricultural machinery to improve accessibility to farmers, particularly smallholders, should be promoted.

The action plan for irrigation is favourable to achieving increased yield of pulses and reducing the cost of cultivation through use of electrical power for irrigation. It can have positive economic impact, but there are important negative social and institutional impacts, since there is no plan to develop water-user groups. This discourages community ownership of the irrigation facilities as there is less involvement of farmers in the planning and implementation processes. The action plan also depends on government and international aid to repair canals and dams. Since the plan focuses on electricity as a source of energy, instead of fuel to reduce the cost of irrigation, it can have an important impacts in areas which have access to irrigation facilities and river water, but the potential is less in other flat and hill zones of CDZ that do not have access to irrigation facilities. There is no plan for the development of water-user groups, which discourages institutional innovation for water use.

The policy and action plan for research and development is supportive of the goal of realizing the potential of the Dry Zone and can produce positive social, economic, environmental and institutional impacts. However, the action plan does not stipulate any coordination policy or mechanism among DOA, DAR, development partners, private sector, farmers' organizations and NGOs for the formulation, implementation, monitoring and evaluation of interventions. It also lacks a mechanism for building capacity and the trust of the community in implementing cooperative systems among farmers. The ability and willingness to work in a group is among the most important factors for farmer-led innovation. Overall, the extension service needs to be consumer or farmer driven. At the same time, there should be a link between extension services and the Livestock and Fisheries Department in order to develop an integrated extension approach that can help farmers.

c) Improving access to markets

The high value-added agricultural product and promotion of agro-based industries policy and action plan is favourable to enhancing the potential of CDZ and could have positive economic, social, environmental and institutional impacts, contributing to CRSA in CDZ. However, in order to achieve the positive impacts, value-added processes should be well-integrated within broader value chains, with processors as the main link between producers, traders, financiers and the markets.

The sustainable market policy and the action plan are well-formulated. In order to enable successful execution of the action plan, development of effective value chains, better coordination among research and extension services and university, as well as enforcement of pesticide, fertilizer and plant quarantine laws are needed.

d) Agricultural statistics

Policy and action plans to develop statistics for all government sectors are inadequate and limited in scope. There is substantial room to improve data-collection and management for statistics on sector performance, including taking a more people- and farm-centred approach rather than a commodity-centred approach for agricultural and agri-related sector data. Among the challenges is collecting realistic data on imports and exports, when there is substantial informal trade. There is also a lack of reliable data on the livelihoods of the small farmers.

f) **Agriculture law and regulation**

The **Seed Law** was promulgated in 2011 in order to help systematically develop the seed industry economically. It incorporated procedures and regulations for seed businesses reflecting the Seed Law ratified in February 2016. However, the seed multiplication system of pulses is not as well established as rice seed multiplication. Most of the pulse seeds used by farmers are not pure, but rather a mixture of varieties. There is very limited communication or contact among farmers, seed farms and extension staff. The seed policy, formulated in 2012, with the help of FAO, has only recently been approved by parliament.

The **Fertilizer Law** has been enacted to assure the quality of fertilizers, disseminate information and supervise production and distribution. However, most of the fertilizers used by farmers are currently imported from China, and the quality is very poor in terms of the concentration of active ingredients. Enforcement of the Fertilizer Law is very weak with lack of action to address the concerns of farmers.

The **Plant Protection Law** consists of the Pesticide Law (1990) and Plant Quarantine Law (1993). The Pesticide Law aims to ensure the quality of the active ingredients of pesticide formulation and the safety of consumers and other stakeholders. The Plant Quarantine Law aims to protect against the entry of harmful pests and to control the pests which have already entered the country, to keep plants and plant products free from pests in quarantined commodities for export, and to enable a system to issue phytosanitary certificates for the export of plants and plant products before they are boarded. Although a pesticide analysis laboratory was established in the Plant Protection Division as early as 1986, the process of analysis and the enforcement of the Pesticide Law is very uncertain. The situation is similar to the Plant Quarantine Law and the current situation of plant quarantine activities. Integrated pest management should be promoted along with the enforcement of the Pesticide and Plant Quarantine Laws to support CRSA in the CDZ. A new Pesticide Law has recently been enacted by GORUM, although it has not been analysed in this study.

Access to natural resources, especially land and water, for smallholder farmers is of paramount importance for CRSA. The Farmland Law and Vacant, Fallow and Virgin Land Management Law were both promulgated in 2012 with the objective of determining land-use rights and opportunities to enable handing over of these rights from generation to generation (in case of Farmland Law). They also aimed to create job opportunities and facilitate rights and permissions for agriculture-related livelihoods plus mining and other legitimate industries (in case of Vacant, Fallow and Virgin Land Management Law). However, the situation in the field was reported to be different from implementation of the laws being somewhat ineffective and not as smallholder-friendly as desired. This was particularly true for smallholders in the Dry Zone and hilly regions, due to the following factors: complex and long registration process; unclear and complicated land classifications, resulting in a difficult land registration process; neglect of customary rights in land-use rights, resulting in conflict situations in the process of land registration; weak protection for land-use rights; limited effectiveness of land administration and overlapping roles of many departments in issuing land-use rights; and active promotion of large-scale land allocation along with inadequate attention to the consequences for smallholders' livelihood (OECD, 2014). A new Land Use Policy was published in 2016.

g) Information and media

Access to information is important in supporting poverty alleviation for smallholder farmers in general and for promoting CRSA in the CDZ in particular. Certain journals relevant to agriculture are circulated on a weekly, biweekly or monthly basis by public and private sector institutions. A local NGO also serves as an interface between farmers and traders, and distributes market information on agricultural commodities to farmers (OECD, 2014). During the course of field interviews conducted as part of this study, it emerged that a 'Farmer Channel Studio' has been established in the Yezin DAR compound, which is broadcasting agricultural education programmes, information about research outcomes and extension news, in collaboration with Yezin Agricultural University and the Extension Division. However, farmers reported information from this source was not reflective of their constraints and the current situation. In general, although not being state of the art, the media (especially information and communication technology) is gaining momentum in contributing to agricultural development in the CDZ.

4.3.2 Value-added processing

Since agri-processing technology and equipment in Myanmar are very rudimentary, the country is only able to export pulses at a low price to countries who buy unprocessed produce. There is thus a need to upgrade processing facilities in order to support value addition and enable farmers to obtain higher prices for their produce, as well as expand their ability to export to other markets. Processing of most of the Dry Zone products, such as pulses, palm and jiggery, is performed by the private sector, indicating the importance of public-private partnerships for the further development of Dry Zone agricultural products. The policy of value-added processing and small-scale industry development is very favourable to realizing the potential of Dry Zone agriculture with various positive economic and social impacts. If pursued sustainably, it can preserve the environment and promote climate resilience in CDZ agriculture.

4.3.3 Agriculture market policy

The agriculture market policy calls for good agricultural practices and good manufacturing practices to meet the standards of ASEAN and other global markets, and supports an inclusive approach involving the public sector, private sector, development partners and NGOs. It favours further development of the potential of Dry Zone agriculture, diversifying livelihoods and addressing key factors responsible for the marginalized situation of the Dry Zone. The policy is well-positioned to generate positive economic, social, environmental and institutional outcomes. For instance, it enhances job opportunities for smallholders in the Dry Zone (thus mitigating migration), increasing incomes and the sustainability of natural resource use through good agricultural practices.

4.3.4 Export and import of agriculture products

In the new policy for export and import for the agriculture sector, export and import taxes for agriculture inputs have been abolished. This is especially encouraging for farmers in the Dry Zone. However, for the full benefit of this policy to accrue to smallholder farmers, reliable trade information channels need to be established, since farmers have limited information sources other than dealers. The development of an export market for agricultural commodities is a fundamental requirement for rural development, which is facilitated through

the abolition of export taxes. Likewise, the abolition of the import tax should be complemented with measures to ensure the quality of fertilizers and pesticides, which in turn requires enforcement of the Pesticide and Fertilizer Laws. At the same time, farmers should be encouraged to adopt good agricultural practices. Overall, an effective value chain model is required for the Dry Zone's agricultural products to promote CRSA in CDZ.

4.3.5 Agriculture credit

One of the most pressing constraints for smallholder farmers in Myanmar is access to credit. This limits progress towards achieving food security and poverty reduction. The sources of finance currently accessible to farmers are financial institutions (MADB), private institutions (Global Treasure Bank), Department of Cooperative, DRD (Evergreen Project and Village Development Fund), village self-help groups, and some development partners and NGOs. Among them, according to the survey carried out by Engvall in 2013 (OECD, 2014), 70 per cent of farmers interviewed relied on MADB, 26 per cent on informal lending and 3 per cent on microfinance. However, there are key gaps in overall coordination, collaboration in target setting, implementation, monitoring and evaluation of programmes among these organizations. These need to be addressed for greater impact on smallholder farmers. Moreover, various aspects of MADB need to be reformed: (i) The terms of loan repayment should be extended beyond the immediate harvest to allow farmers to sell their produce at more favourable prices; (ii) Interest rates should be increased to incentivize lending; (iii) MADB should diversify its lending portfolio to reduce risk and foster the growth of non-farm rural enterprise and employment in rural areas; (iv) MADB should be granted more autonomy, including lifting of the requirement of paying 25 per cent of profits to the government.

4.3.6 Private investment in agriculture sector

Myanmar has policies in place to encourage private sector investment in agriculture in three ways: (i) private investment as part of the 20 Year Development Plan for Agriculture; (ii) foreign investment promotion; and (iii) small and medium industries development. Private investment is a critical factor that directly or indirectly influences agricultural production, so these policies are of vital significance. However, caution is required to avoid conflict in the long term by incorporating appropriate safeguards in granting large land areas to commercial investors, since smallholders may have customary rights over such land. The safeguards can also include developing clear and transparent selection criteria before granting investment incentives, setting up monitoring and reporting mechanisms for agribusiness companies against a set of minimum standards, and establishing independent and accessible mechanisms to address grievances.

4.3.7 Farmer associations

Although farmer organizations in the form of extension and water-user associations for irrigation/pump irrigation systems have been documented in official reports, they are not fully functional or effective. They undertake collective work mostly in areas other than technology dissemination or development of agribusiness. OECD (2014) recorded as many as 19,575 cooperative societies in the whole country as of 2013, based on information from the Ministry of Cooperative, consisting of various groups of cooperatives. Since as early as 1996, UNDP and most of the development partners and INGOs invested in developing farmer

organizations as part of community empowerment and technical cooperation efforts. Initially they were working alone, but since 2012 they have tried to involve government departments in developing community-driven processes. However, due to lack of trust in the cooperative system because of some dysfunctional cooperatives and the government's policy that discouraged the formation of associations, there have been very few successful farmer organizations, although the trend is now more encouraging (Kempel, 2015). Farmer organizations have a key role to play in poverty alleviation and rural development, particularly with respect to smallholder farmers in the Dry Zone, since collective effort is important for managing natural resources sustainably and building resilience to climate change. There is a need for the establishment of a reliable, effective cooperative system which can operate in an equitable and inclusive manner.

4.4 Analysis of strengths and weaknesses of policies (NEP, NCDP and NSPARD)

Although NEP, NCDP and NSPARD are comprehensive in scope addressing economic and rural development, and food security, as well as climate change, the following key observations can be made in context of their role in promoting CRSA in CDZ:

- The respective sectoral policies lack coherence and full integration from the point of view of achieving the overarching goals of food security, national development, climate resilience and adaptation, and climate change mitigation through promotion of CRSA.
- Although there are short-term five-year plans and long-term plans in the agriculture, livestock and fishery sectors, some short-term plans are not reflective of the long-term vision.
- The departments concerned have not been able to establish the strong coordination necessary to achieve the interdisciplinary goals of CRSA.
- Although the CDZ suffers from unique constraints and problems, there are no CDZ-specific policies.
- It is encouraging that there is policy support to promote investment both from domestic and foreign companies in agriculture inputs, post-harvest, industrial crop processing, and advanced technology, and for the involvement of development partners, NGOs and the private sector in the development of NARES. However, smallholder-friendly agricultural credit mechanisms need to be developed to encourage climate-resilient and sustainable technologies and practices.
- There is inadequate emphasis on convergence and coherence of research, extension and education approaches which can enable improved accessibility of smallholder farmers to quality extension services. Resource allocation for research and extension services for smallholders is also inadequate. A strong link between research and extension in the short- and long-term plans of the livestock and fishery sectors appears to be lacking.
- Notwithstanding the adoption of NEP as early as 1995 and the establishment of NCEA in 1990, the commitment towards pursuing the policy has been very weak. Awareness of the existence and the role of NEP and National Environment Conservation Law at both operational and senior levels of government is unclear.

A more detailed assessment of the role of NEP, NCDP and NSPARD in promoting CRSA in CDZ is presented below in the form of a SWOT analysis of PIPs related to these three policies.

Box 4.1 Policy: NEP and other environment-related policies

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ A number of laws and policies are in place to support NEP such as the Forest Policy, National Disaster Risk Management Plan, Wildlife Protection and Protected Area Law, Marine Law, National Action Plan for Biodiversity Conservation, National Climate Smart Agriculture Strategy and the NAPA. These provide a useful overall framework for environmental management, including for the CDZ. ■ FAO initiated the “Environmentally Sustainable Food Security and Micro Income Opportunities” initiative in the Dry Zone as early as 1997. This serves to strengthen CRSA by rehabilitating and reclaiming land, and conserving soil and water, which are among the most important areas for the development of sustainable agriculture. 	<ul style="list-style-type: none"> ■ No overarching sustainable development policy encompassing green economy and CRSA yet developed. ■ Although the NAPA and National Climate Smart Agriculture Strategy have been prepared, Nationally Appropriate Mitigation Action (NAMA) has not been put in place to support CRSA. ■ The negative impact of environmental degradation (excessive timber extraction, dam construction and mining) in mountain areas surrounding the Dry Zone is not receiving due attention. The importance of agroecological linkages between the CDZ and upland areas has largely not been recognized. ■ The commitment of some ministries to the NAPA is found to be weak, even though the ministries participate in training, seminars and workshops held abroad for UNFCCC.
Opportunities	Threats
<ul style="list-style-type: none"> ■ The INC with UNFCCC and regional initiatives, such as the CGIAR Research Program on Climate Change, Agriculture and Food Security in Southeast Asia (CCAFS SEA) are in place. These can facilitate effective information sharing and networking on climate change (including tested practices for adaptation and mitigation among ASEAN countries), and disaster management and response. ■ The Sustainable Development Goals (SDGs) have been adopted by the United Nations General Assembly in September 2015 which prioritize climate resilience and sustainable use of natural resources and ecosystems. This is likely to lead to enhanced donor interest and fund inflow to these areas. 	<ul style="list-style-type: none"> ■ Climate change is progressing with each passing year and resource poor and marginalized communities are becoming increasingly vulnerable to its adverse impacts. ■ Weak political commitment to NEP and environment-related policies.

Box 4.2 Policy: NCDP as a policy instrument for promoting climate-resilient and sustainable agriculture

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Agriculture is well recognized as a key sector for enabling progress in other sectors in the National Development Plan. ■ The action plan for irrigation, policy and the action plan for research and development, focus on promotion of agricultural mechanization with the introduction of custom hiring of agricultural machinery, the high Value Added Agricultural Product and Promotion of Agro-based Industries Policy and action plan, and the Sustainable Market Policy and action plan are all supportive of achieving the goal of CRSA in the CDZ and realizing the agricultural potential of the CDZ. ■ Export taxes for agricultural products and import taxes for agriculture inputs have been abolished in the new policy for exports and imports for the agriculture sector. This can help promote stronger trade linkages and overall agricultural development. 	<ul style="list-style-type: none"> ■ NCDP is not adequately reflective of the current social, economic and environmental situation. It was a 30 year plan (2001-2030) enacted by the military government, and later became a 20 year plan for 2011-2030 once the elected government took office. However, the political system as well as the socioeconomic and environmental context have now changed significantly. ■ A CRSA policy that mainstreams NAPA, NAMA, NCDP and NSPARD, addresses different agroecological zones, and stipulates a mechanism for coordination and integration among forestry, agriculture, livestock and fishery sectors for effective land-use management is not yet in place. ■ State and regional governments do not have the autonomy to initiate policy formulation; their role is to implement the policy laid down by central government. ■ Insecure land tenure rights, lack of adequate measures to address low soil fertility and difficult access to markets are increasing the CDZ's vulnerability to climate change. ■ The lack of, or very limited access to, extension services is a key weakness which requires in-depth analysis of the problem and innovative solutions.
Opportunities	Threats
<ul style="list-style-type: none"> ■ CRSA is a priority for the achievement of various SDGs particularly for SDGs 1 (ending poverty), 2 (ending hunger), 13 (combating climate change) and 15 (sustainable use of terrestrial ecosystems). ■ The LIFT fund has finished phase I of the Dry Zone project and launched another agri-value chain programme which is also supportive of agricultural development in the CDZ. 	<ul style="list-style-type: none"> ■ The transition in the political system in 2016 may potentially result in some delays in general policy formulation and execution. ■ The profit margin for producers continues to be very low in agriculture which is constraining the development of the sector. ■ Attitudes of local authorities are at times resistant towards participatory approaches. ■ The trust of farmers in the concept of cooperatives has been lacking and is constraining the establishment of effective farmer organizations.

Box 4.3 Policy: NSPARD as a policy instrument for Rural Development and Poverty Alleviation

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ NSPARD has been a key National Strategy in view of GORUM's commitment to fulfil MDG 1 to reduce poverty to 16 per cent by the end of 2015. ■ GORUM has obtained recognition from FAO in achieving the poverty reduction goal which underscores the potential for further progress in this direction. ■ NSPARD has eight priority thematic areas for which the agriculture sector is positioned as a base. ■ NSPARD has been provided with a development fund to enable implementation of programmes. ■ To support NSPARD, the comprehensive National Action Plan for Poverty Alleviation and Rural Development through Agriculture (NAPA) was formulated in collaboration with FAO (involving a local, regional and national consultation process), covering as many as 13 thematic areas and 9 cross-cutting area for equitable, inclusive and pro-poor growth. 	<ul style="list-style-type: none"> ■ Even though rural environment development is included in the eight priorities of NSPARD, CRSA is not explicitly mentioned. ■ Most of the laws and legislations recently modified, especially those relating to land tenure rights and private investment law, do not address many key ground-level issues (e.g. extent of tax exemption to companies, and impact on traditional cultures, customs and smallholder investors). ■ Capacities for crop diversification and value addition in the CDZ are very low and require greater attention including more investment in research on developing locally appropriate farming methods. ■ A greater degree of transparency and accountability is required for implementing the targeted developmental activities. ■ There is no special programme for Dry Zone included in the NSPARD. ■ Better integration across NEP, NCDP and NSPARD through enactment of an overarching policy has yet to be achieved.
Opportunities	Threats
<ul style="list-style-type: none"> ■ WTO's assistance to the Department of Trading Cooperative to develop the National Export Strategy and action plan can contribute towards enhancing export of pulses, one of the main export products of CDZ, thus supporting the goals of NSPARD. ■ Aid from multilateral development agencies is increasing with the introduction of social and economic reforms which also supports achievement of the goals of NSPARD. ■ There is significant potential for employment generation in the CDZ through off-farm activities. ■ Strong enforcement of policies and regulations in the CDZ can provide a boost to the economy. 	<ul style="list-style-type: none"> ■ The private sector's approach may not always be well-aligned to addressing needs of smallholder farmers who lack financial and knowledge resources. ■ Since the linkage between environmental degradation in upland areas and the CDZ is not well appreciated, land grants to large-scale investors in upland areas without conducting economic and social impact assessment (ESIA) can bring about negative impacts in CDZ. ■ Lack of a strong monitoring system and inadequate participation and coordination of all relevant stakeholders can jeopardize achievement of NSPARD's goals.

4.5 SWOT Analysis of institutions in context of NEP, NCDP and NSPARD

Box 4.4 Institutions: Macro level

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ To speed up the momentum of rural development activities, the DRD was transferred to MLFRD in 2013. MLFRD was subsequently combined with MOAI in 2016 to form MOALI and DRD is now under MOALI which can result in better integration with other agriculture-related sectors. ■ There is an Aid Effectiveness Coordination Forum involving GORUM, development partners, private sector, media and CSOs for the implementation of NSPARD. 	<ul style="list-style-type: none"> ■ Directorates have insufficient capacity in terms of number of staff and expertise to adequately deal with rural development and poverty alleviation issues. ■ Farmer associations are not able to effectively influence or contribute to policy formulation. The registration process for farmers' associations has been the subject of debate. ■ NEP does not have effective vertical institutional linkages between national and local levels to monitor, supervise and evaluate programmes and projects. ■ Except the Greening Department of MNREC, there is no institution specifically devoted to the improvement of the environment in the Dry Zone on a large scale. ■ NARES related institutions are not fully geared to support promotion of NSPARD in the CDZ. Coordination among research centres and extension is also very low.
Opportunities	Threats
<ul style="list-style-type: none"> ■ The commitment of the government to NSPARD continues to be strong. ■ Multilateral development agencies and other development partners have already committed a substantial amount of development aid. ■ The transition to democratic governance will strengthen the capacity of institutions to address community needs and is expected to enable even greater involvement of donor agencies. ■ While still low, the level of coordination among various stakeholders appears to be improving. 	<ul style="list-style-type: none"> ■ It requires sustained effort over the long term to reform and strengthen institutions, further develop local empowerment mechanisms and change attitudes of staff. If this effort is not sustained, this can undermine the momentum of achieving the goals of NSPARD. ■ The current departmental structures, as well as attitudes and mindsets of some public sector staff, may hinder efforts to address the needs of smallholder farmers. ■ The Central Committee and working committees of NSPARD have recently been abolished by new GORUM, and a new organization structure needs to be announced for NSPARD. ■ Private sector associations such as UMFCCI, MRF and MPBSA are not perceived as adequately representative of smallholders which hinders engagement of smallholders through these institutions.

Box 4.5 Institutions: Meso level

Strengths	Weaknesses
<ul style="list-style-type: none">■ The subcommittees at the state and regional levels involved officials from all relevant ministries with the authority of directing and supervising the NSPARD work.■ State and regional governments often have better administrative and financial powers/resources to manage and execute activities related to the eight tasks of NSPARD in their respective states and regions, in line with the central guidelines.	<ul style="list-style-type: none">■ There is a lack of staff with adequate capacities for executing rural development programmes.■ Staff are usually not trained to undertake a participatory approach. They simply execute the directions received from the NSPARD Central Working Committee. This makes it difficult to have flexibility in decision-making depending on the local-level situation.
Opportunities	Threats
<ul style="list-style-type: none">■ The more transparent democratic system now in place can enable the state and regional-level authorities to undertake more effective supervision of township-level NSPARD activities.	<ul style="list-style-type: none">■ The capacity of staff at the meso level in terms of numbers and quality needs to be improved to effectively monitor and mentor the township-level personnel.

Box 4.6 Institutions: Micro (township & village) level

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Offices of various NSPARD stakeholders are located at the township level which supports its implementation. ■ The Township Development Support Committee has been formed to improve the public-private sector interface. 	<ul style="list-style-type: none"> ■ Management capacities of the lead agency (Township General Administrative Department) are inadequate. ■ The capacity in government institutions for participatory approaches such as those used by development partners is also lacking at the micro-level. The multi-layered structure of some government organizations does not place due emphasis on mainstreaming a people-centred approach. ■ Skills of local stakeholders for advocacy of village development needs are limited. ■ Coordination among the stakeholders at the local level is inadequate and needs to be improved for NSPARD to be more effective.
Opportunities	Threats
<ul style="list-style-type: none"> ■ Township Development Commissions, consisting of representatives from the townships, have been set up for better monitoring and supervision at the township level. ■ There is increasing awareness among local communities about the importance of participatory approaches in implementing development projects. ■ There are examples of functional coordination mechanisms between NGOs and public sector organizations to develop participatory village development plans, which should be further replicated. For instance, the NGO Action Aid has been working with township development committees to promote village development committees by conducting village-level training in Meikhtilar and Pakkoku. ■ The potential of the agriculture commodity exchange centre in value chain development for agriculture commodities can be further explored. ■ The emergence of active and efficient CSOs in the country can be a significant support for NSPARD. 	<ul style="list-style-type: none"> ■ Lack of recognition of the importance of CRSA by township authorities in the CDZ or commitment to pursue it effectively can compromise the success of efforts.

Analysis of strengths and weaknesses of MOALI as a specific institution

Given the key role of MOALI in promoting CRSA in Myanmar, an analysis of strengths and weaknesses of the ministry is presented below to complement the above SWOT analysis of institutions.

Box 4.7 MOALI (formed after merger of MOAI, MLFRD and Ministry of Cooperatives)

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Discharging a key role in adopting policy, formulating plans, and strengthening cooperation and coordination in agriculture, livestock, fishery and rural development sectors. ■ Leading various efforts to conduct research and advocate for scientific agricultural practices which are critical for CRSA. ■ Producing locally adaptable quality seeds for various crops at satellite seed farms located throughout the country. ■ Implementing 235 dams, 327 pump irrigations stations and 8,312 groundwater projects. ■ Providing assistance in forming and developing cooperative societies, and educating, organizing and mentoring cooperative organizations. 	<ul style="list-style-type: none"> ■ Lack of adequate staff capacities for managing developmental, institutional and financial issues. ■ Availability of quality seeds to farmers remains a serious constraint on rural development and poverty reduction ■ Quantitative and qualitative deficiencies in extension infrastructure, equipment, techniques, and staff. ■ Coordination among extension, Yezin Agricultural University and farmer organizations is weak. ■ Although offering low interest rates, the impact and scale of MADB's loans remain limited in comparison with credit needs. ■ MADB is not the ideal choice for farmers, since the amount of loan is only one-third of the total cost of cultivation. ■ Although artificial insemination services for livestock are available to commercial farms around Yangon and Mandalay, smallholders from the rest of the country have no access to the service. ■ Deterioration of breeding stock for reproduction. ■ Due to the previous unfavourable experiences with cooperatives, the trust-building process is likely to be long.

4.6 SWOT Analysis of policy processes for NEP, NCDP and NSPARD

Box 4.8 Political processes

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Myanmar has ratified UNFCCC, promulgated the environment policies, law, regulations and strategies, and has been party to various environment-related conventions and agreements since 1992. ■ Most of the relevant ministries are involved in NSPARD. ■ The government's efforts in context of NSPARD have been recognized by ASEAN and other countries. 	<ul style="list-style-type: none"> ■ In general, there is inadequate cross-sectoral and horizontal coordination across ministries and departments. ■ Engagement of the private sector, community-based organizations and local stakeholders remains largely limited to project frameworks rather than part of structured political or policy processes. ■ Even when mechanisms supporting community participation are in place, discouraging attitudes towards facilitating dialogue and partnerships can be a limiting factor. ■ Commitment to monitoring the performance of policies, legislation and laws on the ground has been inadequate.
Opportunities	Threats
<ul style="list-style-type: none"> ■ Cooperation with ASEAN and other countries in relevant areas, as well as with regional and international institutions, has been increasing which can support policy formulation processes. ■ There is expectation of increased transparency and accountability in governance after the recent transition in governance in 2016. 	<ul style="list-style-type: none"> ■ The political system and processes in Myanmar are still somewhat fragile in the context of the transition in governance. ■ With the transition to the new government in 2016, the impact of new processes on NSPARD and other key policies in their current form remains to be seen.

Box 4.9 Participatory processes

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Platforms, such as the Myanmar Development Coordination Forum, Nay Pyi Taw Accord and the INGO Forum, have been established for better coordination among the GORUM and development partners. ■ Some development partners and NGOs are promoting the use of a people-centred approach, and conducting capacity-building on development theory and participatory methods to change attitudes and behaviours. ■ A specific plan was formulated to involve the private sector and civil society in NSPARD. 	<ul style="list-style-type: none"> ■ The appropriate balance between a top-down approach and bottom-up approach still needs to be determined to carry out development activities. ■ The decentralization process has not been strong enough to realize a community-based participatory approach. Mechanisms are also lacking for leveraging and benefiting from community knowledge, cultural heritage and other such resources of the Dry Zone. ■ An effective mechanism for combining technical expertise and local experience has not yet been established. ■ Use of participatory monitoring and evaluation processes for field-level programme implementation is very limited.
Opportunities	Threats
<ul style="list-style-type: none"> ■ The increased popularity of social media can be leveraged to raise awareness on climate change and its impact on agriculture, and to explore potential solutions. ■ The number of development partners working closely with departments such as DRD is increasing. 	<ul style="list-style-type: none"> ■ It is important that the commitment of the government and other stakeholders to the reform process should not decline.

Box 4.10 Political processes

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Myanmar has ratified UNFCCC, promulgated environment policies, laws, regulations and strategies, and has been party to various environment-related conventions and agreements since 1992. ■ Most of the relevant ministries are involved in NSPARD. ■ The government's efforts in the context of NSPARD have been recognized by ASEAN and other countries. 	<ul style="list-style-type: none"> ■ In general, there is inadequate cross-sectoral and horizontal coordination across ministries and departments. ■ Engagement of the private sector, community-based organizations and local stakeholders remains largely limited to project frameworks rather than part of structured political or policy processes. ■ Even when mechanisms supporting community participation are in place, discouraging attitudes towards facilitating dialogue and partnerships can be a limiting factor. ■ Commitment to monitoring the performance of policies, legislation and laws on the ground has been inadequate.
Opportunities	Threats
<ul style="list-style-type: none"> ■ Cooperation with ASEAN and other countries in relevant areas as well as with regional and international institutions is increasing. This can support policy formulation processes. ■ There is expectation of increased transparency and accountability in governance after the recent transition in governance. 	<ul style="list-style-type: none"> ■ The political system and processes in Myanmar are still somewhat fragile in the context of the transition in governance. ■ With the transition to the new government in 2016, the impact of new processes on NSPARD and other key policies in their current form remains to be seen.

Box 4.11 Resource mobilization processes

Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Myanmar has access to various international and regional institutions to mobilize financial aid for adaptation and mitigation programmes in agriculture. Multilateral development partners have been conducting development projects and programmes in the Dry Zone since 1994. ■ Although they are limited by many constraints, various domestic sources of funding are available, such as MADB, Global Treasure Bank, Evergreen Community Development Fund, cooperatives and microfinance institutions. 	<ul style="list-style-type: none"> ■ There is no systematic strategy to use the public budget to attract private spending. ■ An efficient coordination mechanism among the various funding sources for greater effectiveness of loan programmes is lacking. ■ Availability of funds at the regional and community levels is insufficient. ■ There is lack of an incentive plan for smallholder farmers to adopt climate-resilient technologies and practices.
Opportunities	Threats
<ul style="list-style-type: none"> ■ Promoting private sector investment for development of small-scale industries in the agricultural sector can create job opportunities and make rural livelihoods more resilient to impacts of climate change. ■ There is significant momentum for regional cooperation on climate change. 	<ul style="list-style-type: none"> ■ Many existing climate change related programmes are financially heavily dependent on donors and risk not being sustained once the donor funding ends. ■ The investment required for CRSA over the long term is very large and requires mobilization of significant external/donor, private and domestic public funding, which is challenging. ■ Lack of a participatory monitoring and evaluation system for financial management of climate change programmes can jeopardize their success.

Recommendations and Proposals for Follow-up Activities

Based on the analysis and the information presented in earlier chapters, this chapter outlines a set of recommendations and proposes specific follow-up actions in the context of NEP, NCDP and NSPARD. It also explores some implications of the analysis for the new institutional structure following the assumption of office by the new GORUM in April 2016.

5.1 Recommendations for policies, institutions and processes to promote climate-resilient and sustainable agriculture in the CDZ

5.1.1 Policy-related recommendations

- Formulate an overarching National Sustainable Development (NSD) policy encompassing NEP, NSPARD and NCDP, with emphasis on agroecological zone-specific strategies to address locally appropriate adaptation and mitigation actions for CRSA in CDZ.
- Identify and upscale local solutions in view of the vulnerability of the CDZ to low precipitation and soil degradation. Invest technical and financial resources in encouraging crop and livelihood diversification, value addition and post-harvest processing in the Dry Zone in order to positively impact incomes and livelihoods.
- Create incentives to attract the private sector to invest in agriculture, including in areas such as agro-processing for value addition, market development for traditional products, such as thanatkha (*Hesperethusa caenulata*) and toddy palm (*Borassus flabellifer*) (Ferrari, and Thein, 2014; Thein, 2014) and use renewable resources.
- Give due consideration to the sustainable development of mountain regions surrounding the CDZ during the process of formulating CRSA policies and strategies for the CDZ, including the need to reduce the environmental risk posed by activities in the mountain regions to agriculture in CDZ.
- Build an evidence base to inform agroecological zone-specific action. Reliable information can help Myanmar make strategic choices that maximize benefits and minimize trade-offs related to adaptation, mitigation and food security. Specific areas requiring collection and analysis of information and data include assessment of adaptation and food security needs, and the mitigation potential of agriculture;

identification of good practices with synergies across the areas of food security, adaptation and mitigation; analysis of household-level and institutional constraints that need to be addressed in managing trade-offs; and development of weather, crop and pest/disease forecasting tools, mechanisms for data-collection and delivery of relevant information to farmers.

5.1.2 Institution-related recommendations

- Build the capacity of government staff at various levels to coordinate policy implementation across multiple policy areas, including rural development and poverty alleviation, and across different ministries and departments. Capacity development for managing other developmental, institutional and financial issues should also be addressed.
- Empower regional and local governments to participate in the formulation and implementation of policies that support CRSA in CDZ, and provide regional and local governments as well as CSOs, private sector and farmers' associations with adequate representation in relevant institutional frameworks.
- Strengthen coordination among research and extension services to promote CRSA in the Dry Zone, by engaging LNGOs, INGOs and the private sector to disseminate improved technologies to smallholder farmers. Moreover, local commodity exchange centres should be involved in value chain development of Dry Zone crops.
- Address the issue of insufficiency of extension staff in terms of numbers and quality and inaccessibility of extension services to smallholder farmers.
- Facilitate a political platform for interaction between the enabling agency, delivery agencies and user groups to utilize the farmer field school approach to empower farmers, establish farmer associations and strengthen farmers' capacities for undertaking advocacy and influencing policy decisions. This is necessary to give the farming community a voice in policy formulation that influences all aspects of the value chain for Dry Zone crops.

5.1.3 Process-related recommendations

- Promote better, more structured coordination and cooperation among MOALI, MNREC and other government stakeholders to leverage integrated natural resource management for better adaptation, resilience and mitigation of climate change. Cooperation should be fostered not only at the horizontal level between regional and local authorities, but also at the vertical level within national institutions and ministries.
- Support participatory approaches that involve grass roots stakeholders in policy and programme monitoring and evaluation processes, and institutionalize mechanisms to integrate outcomes of monitoring and evaluation in future policy and programme design through effective coordination among various stakeholders. Community participation in collecting information and knowledge should also be enhanced through application of methodologies such as participatory rural appraisal. Capacity-building of regional/local government and community-based organizations in such methodologies should be undertaken.
- Undertake more intensive resource mobilization and pooling of funds by harnessing the government budget as well as other sources including the Evergreen Development

funds from DRD, loans from MADB, development partners' funds, and microfinance to meet the requirement of CRSA in CDZ, while taking into account needs of smallholder farmers. Mechanisms for local stakeholders to access financial resources should also be simplified and made responsive to the needs of the CDZ.

- Support networking mechanisms among various stakeholders at the region, district, township and village levels in the three CDZ regions, including government, private sector, development partners, local and international NGOs and CSOs, for the exchange of information, experience and mutual support. This could also facilitate promotion of a regional CRSA strategy or plan for the CDZ as and when it is developed.

5.2 Proposals for follow-up activities

From the recommendation made, some proposals for follow-up activities that can lead to concrete action in support of CRSA in CDZ are as follows.

- Once an overarching NSD policy covering NEP, NCDP and NSPARD is formulated, as recommended under policy-related recommendations above, establish a Central Committee for Sustainable Development chaired by the President, an NSD Central Working Committee chaired by the Vice President, and Central Sub-working Committees on environment, climate change, and biodiversity. Likewise, the focus of state/region, district, and township policies and programmes needs to be holistically transformed towards sustainable development.
- Organize a workshop to promote coordination and exchange of experiences and lessons learned on CRSA among the three regions of the Dry Zone. Support the establishment of a Dry Zone region multi-stakeholder working group to transform the experiences and lesson learned from NSPARD into practical recommendations for CRSA in the CDZ.
- Establish a knowledge inventory centre as a hub for sharing the large amount of knowledge that is being generated about policy and programme implementation and impact among stakeholders. Currently, there are few such knowledge-sharing hubs or mechanisms, but the use of databases and Internet-based forums can be important instruments in the exchange of information and knowledge throughout the Dry Zone.
- Set up a Central Dry Zone Commission for Sustainable Development with ministerial-level representatives from Mandalay, Magway and Sagaing regions. The Commission should have a consultative board of representatives of local authorities, line departments, private sector and development partners. The board should be assigned the responsibility of drafting a CRSA action plan for CDZ in a participatory manner and submitting it for approval to the Commission. After approval, the action plan can be submitted to the national level for endorsement and policy support. The Commission should have the authority to oversee implementation, monitoring and evaluation of the plan.
- Consolidate and strengthen the NARES Advisory Board consisting of DOA, DAR and YAU to promote CRSA practices in the CDZ by leveraging, for instance, the useful experiences of coordination between DOA and DAR for the JICA Water Saving Agriculture Technology project.

- Undertake a feasibility study for setting up a well-integrated value chain for pulses that has the township agriculture commodity exchange centre as a key stakeholder and involves farmers, traders, financial institutions, input suppliers and departmental personnel from NARES.
- Utilize the experiences and lessons learned from the people-centred development approach recently promoted by DRD, for achieving a more transparent, accountable governance system for all-round development of CRSA.
- Explore opportunities for tapping GEF, UNFCCC and Kyoto Protocol-linked funds for least developed countries, such as Myanmar, for adaptation projects in agriculture.

5.3 Implication of the analysis for the new institutional structure formed after April 2016 by the new GORUM

The NEP, NCDP and NSPARD have contributed in varying degrees towards the goal of realizing sustainable and climate-resilient agriculture, as well as food security and poverty reduction in the CDZ and in Myanmar as a whole. The analysis of the role of these policy frameworks/instruments in this report has highlighted various gaps and areas for improvement. The move towards democratic governance and assumption of office by the new GORUM in April 2016 has provided an opportunity to address a number of these areas. As noted in a previous section, an overarching NSD policy could be developed through integration of existing NEP, NCDP and NSPARD frameworks. Development of such an NSD policy could be supported by an evidence base of best practices and barriers to their adoption; policies to overcome these barriers and promote integrated approaches; institution-strengthening to enable greater coordination across entities dealing with food security, development and climate change; and formal and innovative ways of linking finance and agriculture.

Other key areas which can be addressed at this time are:

- Introducing more participatory and **bottom-up policy formulation** and decision-making processes with the involvement of a diverse range of stakeholders including those at the grass-roots level
- **Restructuring government institutions** to better align with the needs of CRSA and inclusive and rapid socioeconomic development more generally
- Introducing greater **transparency and accountability** in governance, which can contribute towards establishing a responsive and efficient policy environment for all sectors
- Leveraging the **greater integration of Myanmar** into regional and international institutions and financial systems, forums and platforms to enable inflow of new ideas, technologies and resources that can accelerate the progress towards climate resilience and sustainability in the agricultural sector.

Efforts to tap some of these opportunities have already been initiated, and it is of vital importance that the momentum be carried forward and strengthened.

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Institutional Landscape for NCDP and NSPARD

1. Macro level (union ministries and committees)

1.1 Ministries related to agriculture and responsible for NCDP

- Ministry of Agriculture, Livestock and Irrigation (MOALI)
- Ministry of Natural Resources and Environmental Conservation (MNREC)
- Ministry of Commerce (MOC)
- Ministry of Health (MOH)
- Ministry of Home Affair (MOHA)
- Ministry of National Plan and Economic Development (MONPED)

1.2 Committees responsible for the overall implementation of NSPARD

- The **Central Committee for Poverty Alleviation and Rural Development** was responsible for the adoption and supervision of NSPARD with eight main tasks, and was chaired by the President with the Union Minister of MLFRD as Secretary
- **Central Working Committee** for NSPARD, chaired by Vice President, with Deputy Minister of MLFRD as secretary, to take charge of the implementation of, and provide support for, the main tasks of NSPARD
- **State/Region and Nay Pyi Taw Council Working Committee**, chaired by the respective chief minister of the state/region, to implement NSPARD

As noted above, the Central Committee NSPARD and central, state/region, district, township working committees NSPARD have now been abolished.

1.3 Committees and ministries which have been responsible for the eight main areas/tasks of NSPARD

- **Development of agriculture production sector**
Responsible institution: Agriculture Production Development Subcommittee (MOALI)
 - To increase incomes through better agriculture production
 - To generate off-farm job opportunities for the improvement of food security.

- **Livestock and fishery production sector development**
 Responsible institution: Livestock, Fishery Development Subcommittee (formerly part of Ministry of Livestock, Fishery and Rural Development which is now merged with MOALI)

 - Selection of complex/mixed farming systems (e.g. crop + livestock or rice + fish) to be implemented
 - Collection and distribution of improved livestock and fishery
 - Implementation of the outcomes of research and development.
- **Small-scale rural industry development**
 Responsible institution: Small Scale Industry Development Subcommittee (MOALI)

 - Establishment of small-scale industries using local materials
 - Promotion of on-the-job training to improve knowledge and technologies
 - Introduction of high-quality products at low cost.
- **Rural cooperative development**
 Responsible institution: Rural Cooperative Development Subcommittee (formerly with Ministry of Cooperative now merged with MOALI)

 - Organization of the rural cooperative based on policy
 - Village organization.
- **Rural socioeconomic development**
 Responsible institution: Rural Socio-Economic Development Subcommittee (Ministry of Information)

 - Improvement of rural transportation
 - Securing of domestic and irrigation water
 - Improvement of education and socioeconomic conditions.
- **Rural energy development**
 Responsible institution: Rural Energy Development Subcommittee (Ministry of Industry)

 - Development of solar energy
 - Generation of opportunities for producing wind power/energy
 - Exploitation of hydropower production from possible sources.
- **Environmental conservation**
 Responsible institution: Environmental Conservation Subcommittee (MNREC)

 - Promotion of village environmental conservation
 - Introduction of climate-resilient sustainable agriculture
 - Sharing of knowledge and technologies of economic conservation.
- **Private Microcredit System Development**
 Responsible institution: Private Microcredit System Development Subcommittee (Ministry of Finance and Revenue)

 - Establishment of the microcredit system in villages
 - Promotion of low interest loans
 - Development of coordination with international agencies for microcredit systems.

2. Macro level (union departments)

2.1 Ministry of Agriculture, Livestock and Irrigation

■ Department of Planning

- Assisting in adoption policies
- Formulation of the agriculture plan
- Establish relations with international and regional organizations, and other government departments.

■ Department of Agriculture (DOA)

- Production of quality seeds
- Organization and conducting of training
- Conducting research.

The Divisions under DOA are:

- Division of Extension
- Division of Land Use
- Division of Plant Protection
- Horticulture and Biotechnology Division
- State Agricultural Institute.

■ Department of Agricultural Research (DAR)

- Research and development of high-yielding crop varieties
- Development of climate-resilient sustainable agriculture technology in Myanmar agriculture
- Dissemination of improved crop varieties and agronomic technologies to farmers.

The Divisions under DAR are:

- Rice and other Cereal Crops Division
- Oil Seeds and Food Legume Division
- Industrial Crops and Food Legume Division
- Soil, Water Utilization and Agriculture Utilization Division
- Agronomy, Agricultural Economic and Statistics Division
- Biotechnology, Plant Genetic Resource and Plant Protection Division.
- Seven Research Centres and Seventeen Satellite Farms.

■ Department of Irrigation and Water Utilization Management (DIWUM)

- Formulation of new irrigation projects
- Planning and implementation of irrigation projects
- Operation and maintenance of the existing irrigation systems.

■ Department of Land Management and Statistics (DLMS)

- Updating of land maps and performing land registration
- Conducting of land surveys and production of land maps
- Collection and compilation of land-use statistics.

■ Myanmar Agriculture Development Bank (MADB)

- Provision of various loans: seasonal, short, medium and long term
- Collection of repayments of the loans
- Encouraging farmers to open saving account at MADB.

- **Department of Livestock Breeding and Veterinary (LVBD)**
 - Responsible for the development of the national livestock sector
 - Compilation and analysis of the livestock data for animal breeding and production
 - Production of animal drugs/vaccines and activities for treatment and prevention.
- **Department of Fishery (DOF)**
 - Conservation and rehabilitation of fisheries resources
 - Promotion of fisheries research and surveys
 - Collection and compilation of fishery statistics and surveys.
- **Department of Rural Development (DRD)**
 - Conservation and construction of rural feeder roads and bridges
 - Provision of rural drinking water
 - Undertaking of rural sanitation work.
- **Yezin Agricultural University.**
 - Production of highly qualified agriculturalists needed for the development of the agriculture sector
 - Provision of adequate technical training on modern methods of agriculture
 - Provision of practical exposure to students who wish to engage in scientific farming through cooperatives or private enterprises.
- **Cooperative Department (CD)**
 - Responsible for regulatory, organization, education, and supervision to improve the cooperative movement and assist in the formulation and development of cooperative societies.
- **Small Scale Industries Department (SSID)**

2.2 Ministry of Transport (MOT)

- Directorate of Water Resources and Improvement of River System (DWRRS)
- Department of Meteorology and Hydrology (DMH)

2.3 Ministry of Natural Resource and Environment Conservation (MNREC)

MNREC is a coordinating body. Myanmar National Adaptation Programme of Action (NAPA) has set up a NAPA Project Management Team and Sector Working Groups. Sector Working Groups are working towards addressing the threat of climate change.

- **Department of Forestry and Greening Department (DF & GD)**
 - Responsible for climate change mitigation and biodiversity conservation
 - For biodiversification, responsible for conserving and securing forests based on the forest policy.

2.4 Ministry of Commerce (MOC)

■ Department of Trade Promotion (DTP)

Responsible for the national export strategy, export-import tax for agro-products, deregulation of farm produce trade, financial support for enhancing export, strengthening of export competitive power and management of post-harvest products, facilitation and marketing.

2.5 Ministry of Finance and Revenue (MOFR)

- Central Bank of Myanmar (CBM)
- Financial Regulatory Department (FRD)

2.6 Ministry of Home Affairs (MOHA)

- General Administrative Department

3. Macro level (private sector)

3.1 Republic of Union of Myanmar Federation of Chamber of Commerce and Industry (UMFCCI)

- Myanmar Rice Federation (MRF)
- Myanmar Pulses, Beans, and Sesame Seeds Merchant Association (MPBSA)

4. Macro level (development partners in agriculture sector)

- United Nations Development Programme (UNDP)
- United Nations Office for Project Services (UNOPS)
- Food and Agriculture Organization of the United Nations (FAO)
- World Food Programme (WFP)
- Asian Development Bank (ADB)
- International Fund for Agricultural Development (IFAD)
- Japan International Cooperation Agency (JICA)
- US Agency for International Development (USAID)
- Department for International Development (DFID)
- Australian Centre for International Agricultural Research (ACIAR)
- Korea International Cooperation Agency (KOICA)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- Economic and Social Commission for Asia and the Pacific (UNESCAP)
- Embassy of India
- NGOs (JICA, 2013)
 - Action Aid/Thadar
 - Action Aid/SEDN
 - Action Aid/ADRA
 - Korea Rural Community Corporation
 - EcoDev
 - HelpAge International
 - IRRI
 - World Vision

- Mercy Corps
- Oxfam/NAG
- Proximity Design
- Proximity Finance
- UNDP/Pact
- Action Contre La Fiam
- GRET (Group for Research and Exchange of Technologies)
- CDN (Consortium Dutch NGO's) (Netherlands)
- World Concern
- MCFTC, WHCFM (World Headquarters of Canaan Farmers' Movement)
- OISCA (Organization for Industrial, Spiritual, and Cultural Adv.) (Japan)
- Adventist Development and Relief Agency
- ACTED
- Partner
- Norwegian Peoples' Aid
- Progetto Continenti
- Saerana
- Solidarites International
- Terre Des Home Italia (TDH Italia)
- Water Research Training Center
- Welthungerhilfe
- World Society for the Protection of Animals
- Terres People Association

5. Meso (state, region and district) level

5.1 State and region level: State and Regional Poverty Alleviation and Rural Development Committee (now abolished)

- **Agriculture Production Development Implementation Subcommittee**
 - Department of Agriculture
 - Department of Forestry, and Department of Greening
 - Department of Livestock Breeding and Veterinary
 - Department of Fishery
 - Department of Cooperative
 - Department of Rural Development
 - Department of Irrigation and Water Utilization Management
- **Livestock and Fishery Development Implementation Subcommittee**
 - Department of Livestock Breeding and Veterinary
 - Department of Fishery
 - Department of Rural Development
 - Department of Agriculture
 - Department of Forestry
- **Rural Small Scale Development Implementation Subcommittee**
 - Department of Trade Promotion
 - Department of Livestock Breeding and Veterinary
 - Department of Fishery

- Department of Rural Development
- Department of Agriculture
- **Rural Cooperative Development Implementation Subcommittee**
 - Department of Cooperative
 - Department of Small Scale Development
 - Cooperative Trade Promotion Department
 - Department of Livestock Breeding and Veterinary
 - Department of Fishery
 - Department of Rural Development
 - Department of Agriculture
 - Department of Forestry
- **Rural Socio-Economic Development Implementation Subcommittee**
- **Rural Energy Development Implementation Subcommittee**
- **Environmental Conservation Implementation Subcommittee**
- **Private Microcredit System Development Implementation Subcommittee**

5.2 District level

In the Myanmar Rural Development and Poverty Alleviation Action Plan (MNPED, 2011), the District-level Rural Development and Poverty Alleviation Subcommittee was not mentioned, District General Administrative Department and other respective district departments were assigned by the State and Regional Rural Development and Poverty Alleviation Committee to carry out the work of relaying the policies and procedure and supervising and monitoring the performance of the Township Rural Development and Poverty Alleviation Committee.

6. Micro (township and village) level

6.1 Township level: Township Rural Development and Poverty Alleviation Committee (now abolished)

Chairman: Head of Township General Administrative Department

Secretary: Head of Township Agriculture Department

- **Agriculture Production Development Implementation Subcommittee**
The same departments at the township level as the district level.
- **Livestock and Fishery Development Implementation Subcommittee**
The same departments at the township level as the district level.
- **Rural Small Scale Development Implementation Subcommittee**
The same departments at the township level as the district level.
- **Rural Cooperative Development Implementation Subcommittee**
The same departments at the township level as the district level.
- **Township Development Commission**

6.2 Development partners and international NGOs

These include project managers or the representatives of NGOs, mentioned at the union level, in the project areas in the Dry Zone.

6.3 Private sector

Commodity Exchange Centre

This is a centre where the prices of commodities, especially agricultural commodities, are fixed via auction. Most of the management groups of this centre are rich in local knowledge and awareness of local farmers' condition. In addition, they have much more experience of contacting other exchange centres and some even use the Internet for market information.

6.4 Village tract level

Village Tract Rural Development and Poverty Alleviation Committee

The representatives chosen by the community of each village included in the village tract select the chair who is approved by the respective Township Development Commission. In this way, every village tract has a Village Tract Development Group with one representative for each village.

6.5 Village level

Village Rural Development and Poverty Alleviation Committee

In the NGO project areas, villages form the Village Development Committee (which can have other names depending on the project design), mostly involving the representative of Village Tract Development Commission to conduct rural development and poverty alleviation activities. In some project villages, under the Village Development Committee, there are subcommittees or subgroups for seeds, livestock, and financial aspects. In the Evergreen Project village, there is another committee to manage the Village Development Fund. The Evergreen Project is undertaken by the DRD through the Village Development Fund and provides the seed money (as much as 300,000,000 kyats) for loans for livelihoods activities at interest rates of 0.5 to 1.5 per cent per month. The loan period and the interest rates are decided by the village community (DRD, 2014).



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