



Myanmar – Benny Manser/Mercy Corps

MYANMAR DRY ZONE VULNERABILITY AND CAPACITY ASSESSMENT

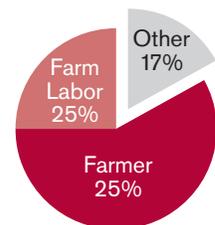
case study

SUMMARY

Mercy Corps Myanmar, in partnership with Mercy Corps' Environment, Energy, and Climate Change Technical Support Unit (EEC TSU), and other partners developed a Dry Zone Vulnerability and Capacity Assessment (DZVCA) to assess the vulnerability of Dry Zone farming communities to variable and shifting environmental conditions, a disabling governance and policy environment, and inefficient agricultural markets. The ultimate output of this work is a draft set of theories of change (TOC) which will inform the development of a new Dry Zone resilience strategy. This study was made possible with support from the American people, delivered through the U.S. Agency for International Development (USAID).

SITUATION AND GOALS

Myanmar's Dry Zone comprises the central regions of Mandalay, Magway, and Lower Sagaing, which cover 13 percent of the country. It is home to 58 million people, a majority of whom are engaged in agricultural based livelihoods (Figure 1), and is characterized by limited rainfall. In Myanmar, 44 percent of households had problems meeting food needs (FAO, 2014) despite being part of a major agricultural region (JICA, 2010). Mercy Corps has been operating in the Dry Zone since 2011, primarily with food security programs. While it's clear that Mercy Corps' work has helped advance productivity and stability in the communities in which it engages, the context is



Source: JICA, 2010

Figure 1: Livelihood activities are dominated by agricultural activities

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extremely dynamic. The vulnerabilities of many farming communities are increasingly complex as Myanmar undergoes unprecedented political, social, and environmental changes, making the design of impactful development interventions challenging. In order to better understand and better prioritize development agendas, Mercy Corps decided to undertake a landscape-scale Vulnerability and Capacity Assessment (VCA). A VCA is an integrated process for identifying and prioritizing vulnerabilities to disturbances (shocks and stresses) and understanding capacities to absorb, adapt, and transform in the face of shocks and stresses. VCAs can vary in scale. Most often they are developed to identify hazards for a single community. In this case Mercy Corps' VCA took a broader approach—targeting a region as opposed to individual communities.

ORGANIZATIONAL STRUCTURE

Scope

The DZVCA process was kicked-off with a scoping phase, during which a member of Mercy Corps' headquarters-based EEC TSU visited the field and worked with the country team to define the assessment's focus and ensure clarity throughout the process. A small working group, made up of Mercy Corps staff who work on food security, conflict, water, climate, and resilience, convened for a three-day workshop in September 2013 to discuss the context of the Dry Zone, and decide upon the VCA's focus and framework. Four important decisions were made during this workshop:

- 1 The purpose of the VCA was defined as an input into the development of a broad resilience strategy for Mercy Corps in the Dry Zone. The assessment was designed to emphasize this high-level outcome and thus required a process that integrated data from existing studies, the opinions of experts and community level data collection. One of the primary objectives was to help prioritize the various shocks and stresses, some of which were already well documented, and develop a more complete understanding of the relationships between them.
- 2 The assessment should be built around three categories of shocks and stresses related to food security: shifting environmental conditions, a disabling governance and policy environment, and inefficient agricultural markets. Food security was selected as the primary frame as it has historically been and is likely to continue as a significant challenge in Dry Zone communities.
- 3 The units of analysis were defined as small, medium, and large scale agricultural-based communities. Defining whose vulnerability we wanted to assess was an important step. Communities experience shocks and stresses differently for a number of reasons. Primary livelihoods, sizes, and locations of communities are all important to consider. As such we had to think about how to best disaggregate the different types of communities to understand their unique experiences.
- 4 TANGO's Resilient Livelihoods Framework (Figure 2) was chosen as a means for organizing and analyzing the information in the assessment. It became the framework which guided the development of the assessment as well as what types of information were gathered and analyzed. Utilizing this framework, the DZVCA explored the degree to which political, economic, and environmental shocks and stresses cumulatively impact communities' livelihood strategies, assets, and coping strategies.

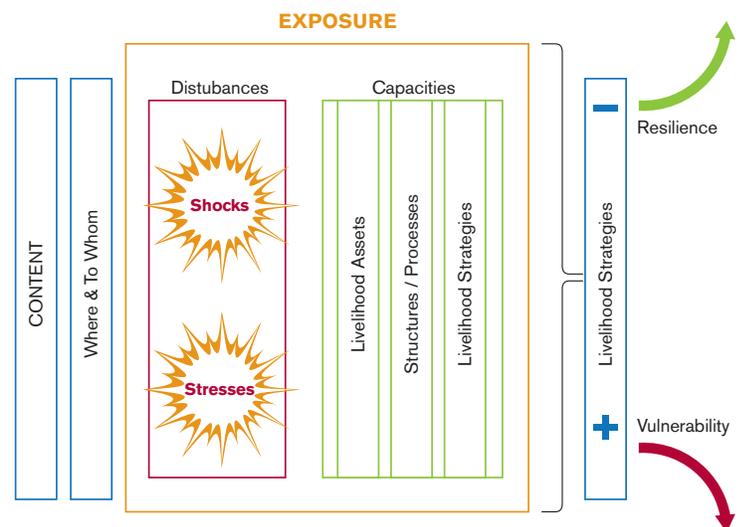


Figure 2: Resilient Livelihoods Framework, adapted from TANGO

Scale

The DZVCA was designed to emphasize breadth as opposed to depth. The assessment collected and analyzed information primarily at the landscape scale. However nine community level assessments were undertaken to establish a more detailed understanding of how communities across a spectrum of ecologic and economic well-being experienced shocks and stresses differently.

Staff Capacity

The primary DZVCA team consisted of two people with various other actors coming in at strategic moments. The lead of the assessment was a hired consultant. Additionally, a member of the EEC TSU advised and generally supported the work throughout the entire process. A research firm, Enlightened Myanmar Research (EMR), was hired to execute the community level assessments. Throughout the scoping, design, implementation, and analysis phases various members of Mercy Corps Yangon-based and field staff as well as agency TSU experts provided input and support to the process.

Funding

Because the DZVCA was not part of any existing or future programs, the core team sought out a small grant program to fund the work. The work was funded by the USAID/Food for Peace (FFP) Funded Cooperative Agreement - Technical and Operational Performance Support (TOPS) under its Micro Grant opportunities.

VCA PROCESS

Tool Design

After the scoping workshop, an Excel-based data analysis tool, based on the conceptual structure established by TANGO in a discussion paper on Food Security and Resilience¹, was developed. The purpose of the tool was to enable a semi-quantitative analysis with the goal of assessing the overall sensitivity of livelihood strategies and coping mechanisms, which are critical to Dry Zone agricultural communities, to key shocks and stresses. This was done over a range of agronomic and economic conditions including communities with good, medium, and poor access to water and markets (Figure 3). An initial list of framework elements (including livelihood strategies, coping mechanisms and key pressures) were extracted from existing literature.

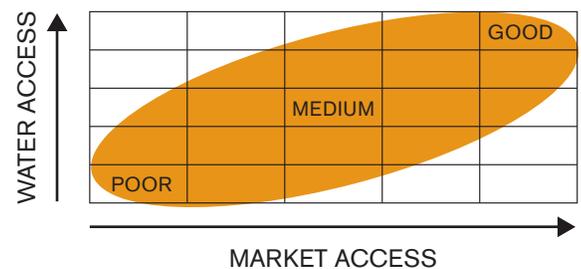


Figure 3: Types of communities assessed

Design Workshop

Mercy Corps Myanmar hosted a three-day design workshop in October 2013 to finalize a clear set of analysis parameters (adaptive capacities, disturbances) for the DZVCA, pulled from existing literature and informed by the experience of participants. Participants included Mercy Corps staff based in Yangon and field locations, partner organizations, and research institutions. While the three primary categories of shocks and stresses identified through the scoping period provided an initial set of boundaries, more specific shocks and stresses within each of the categories were required. For example, erratic rainfall was identified as an important stress within the category of shifting environmental conditions. The workshop also helped shape the methodology for the assessment's data collection and analysis.

1 TANGO 2012, Enhancing Resilience to Food Security Shocks in Africa Discussion Paper

Data Collection & Analysis Methodology

The methodology was intended to be iterative and designed around three phases. Phase One included background research and key informant interviews with experts and government officials in each of the Dry Zone districts. Executing the necessary set of expert interviews proved difficult. The reason for this was two-fold: Finding experts with the requisite sectoral qualifications and experience proved time-consuming; and the logistics of the community-level data collection component were complex and time consuming, which meant less time was available to set up and prepare for expert interviews.

Phase Two focused on community data collection in targeted locations across the Dry Zone. The objective of this phase was to “ground truth” the information gathered from the initial interviews. This phase included significant inputs from Enlightened Myanmar Research (EMR), a local partner with extensive experience with community-level data collection and analysis. Working with the assessment lead, EMR developed an independent methodology for collecting information from communities via focus groups. One township (county) in each of the three Dry Zone states was selected. Three villages were selected in each state in collaboration with local officials in each township.

Following the community assessments, Phase Three comprised of an analysis workshop on June, 2014 which brought together the experts, government officials, and partner organizations engaged in Phase One to synthesize and analyze data collected in order to create a clear picture of how shocks and stresses erode communities’ coping and adaptive capacities.

CHALLENGES & KEY LESSONS

Future assessments could benefit from consolidating the scoping workshop and literature review into the design workshop. In our experience, the existing literature did accurately reflect the primary pressures and capacities our assessment aimed to explore. Collecting this information in advance of any additional work, then having a single combined workshop to address scoping and design would save time, effort, and funds.

While a small team does have limitations, it facilitates a primary focus on information collection and analysis, rather than coordination of a large team. When additional input was needed, the core team identified individuals both inside and outside of Mercy Corps. This allowed the team to bring in additional expertise without getting bogged down in logistics throughout the process. As is the case for any team, access to and support from leadership and relevant program staff remains necessary to ensure the right knowledge is effectively obtained and included.

The Excel-based analysis tool was useful because it provided a semi-quantitative means for analyzing large amounts of data collected across a range of activities. It also greatly supported the objectivity of the analysis. In the end the tool was able to illustrate the specific strategies and coping mechanisms that are most sensitive to the pressures acting on the system. It also illuminated the compounding nature of the pressures. For example it was essential in helping us to understand that while erratic rain and unsupportive agricultural policy did not appear to be the most impactful pressures, they were the pressures which most often exacerbated other stresses. As such, it allowed the core team and supporting participants to dig deeper into the most relevant issues.

While our research partner EMR was experienced in high-quality qualitative research (with the World Bank, for example), their staff assigned on the assessment work were young and struggled initially to understand the research tools. A pre-test was valuable in determining gaps where capacity building was necessary. Significant time reviewing and practicing the use of the tools had to be invested by the lead researcher to adequately prepare the group for data collection.

The expert interviews proved valuable, but most spoke from a national-scale perspective. EMR did capture some township-scale key informant perspectives, but the tight time-frame and limited travel budget prevented better coverage of regional-scale experts, which would have served to further enrich the study.

As the team anticipated, the government approval process was not clearly delineated and prone to unpredictable delays. Flexibility and personal networks proved important to effectively moving the assessment process forward. Working with a locally-based research organization gave us this efficiency and helped to prevent serious delays. For example, authorization to engage in INGO-based fieldwork in Myanmar does not follow a clear process. In one of the three selected townships, administrative officials refused EMR access to communities because they lacked approval from the central administrative body (which Mercy Corps had not sought initially). EMR staff used their personal network of government officials to quickly switch to a different township and finish the research within the original time frame.

RESULTS

Farming communities in the Dry Zone were found to be most sensitive to the impacts of erratic rain, land degradation, poor access to quality inputs, and unsupportive agricultural policies. Moreover, these shocks and stresses were found to be in a state of constant interaction, serving to exacerbate one another in several ways. The overall result is a **deepening cycle of debt** that further reduces the ability of households to cope and adapt to dynamic social, economic, and environmental conditions (see Figure 4). *The debt cycle is reinforced by poor access to low-interest rates, unsupportive repayment schedules, inflation related to costs of inputs and food, production shocks, land degradation, and low profitability.* For example, farmers often cope with restrictive repayment conditions by selling their crops immediately at harvest when prices are at their lowest. In turn, farmers are unable to produce an adequate profit, invest in higher quality inputs, or invest in savings. As a result, farmers and laborers are becoming increasingly impacted by acute shocks that affect production quality and quantity such as low rainfall or pest infestations. Current data indicates that 79% of Dry Zone households are in debt (StC & WFP 2014).



Figure 4: The continuously reinforcing cycle of debt facing agricultural communities in the Dry Zone; a result of exposure to several interlinked types of pressures (shocks and stresses).

Erratic Rain – Highly variable rainfall is a primary stress which constrains farming in the Dry Zone, particularly towards its center, as cropping and grazing lands are subject to recurring shocks such as drought and floods. Low rainfall totals limit crop selection, production yields and quality. In recent years, a statistically significant reduction in June rainfall totals has occurred, which has increased the risk of drought conditions during the primary planting season². Exacerbating the situation is lack of adequate irrigation infrastructure. At present, the volume of water used for irrigation in the Dry Zone is low compared to total runoff, and irrigation water use efficiency is very low. Moreover, the management of existing irrigation water systems is poor with little capacity to equitably, sustainably, and efficiently provide water to farmers.

Land Degradation – Desertification is intensifying in the Central Dry Zone and productivity of agricultural land is declining as a result. Dry Zone soils are generally sensitive to degradation due to a combination of low base-fertility, high base salinity, low organic content, exposure to brief periods of intense rainfall, and low annual rainfall totals. The primary drivers of land degradation are deforestation, erosion, and salinization. Increasing deforestation is largely attributed to demand for fuelwood and agricultural land. Soil erosion, particularly severe in upland areas, is largely as a result of high intensity rainfall and rapid surface runoff. Wind erosion is widespread throughout the Dry Zone. All types of erosion are exacerbated by deforestation. Increased soil alkalinity is primarily caused by the use of saline groundwater for irrigation. Additional causes of reduced soil productivity include fertilizer and pesticide misuse, and overcropping.

2 IWMI 2014, Water Resources Assessment of the Dry Zone of Myanmar.

Poor Access to Quality Inputs – The quality and availability of inputs available to Dry Zone farmers, including seed, fertilizer, pesticide, and labor, is deficient. This pervasive stress causes farmers to employ coping mechanisms that reduce their production and incomes. A weak statutory and regulatory environment contributes to the widespread use of pesticides and fertilizers of suspect chemical composition. Seed production is critically lacking. The majority of farmers plant grain instead of seed, which reduces production yields over time and increases the vulnerability of crops to pests and disease. This is because grain becomes genetically weak as is continuously bred with itself. There is also currently a labor shortage, which is intensified by regionalization, urbanization, and low crop profitability, which places a low ceiling on farm wages. Poor agricultural policy, inadequate market access and indebtedness further negatively impact access to quality inputs.

Unsupportive Agricultural Policies – Historically, agricultural policies in Myanmar have been narrowly focused on maximizing the production of paddy crops through intensification in order to keep the price and availability of rice low in Myanmar. The long-term result has been significant gains in paddy production but reduced farmer incomes because commodity prices have not kept pace with input costs. Current land policies are more flexible than in the past, but remain rigid with focus on ‘Pillar Crops’ that are identified to grow in specific areas. Moreover, farmers are still instructed by agricultural extension offices to follow the central governments cropping production plans for the year, so crop selection remains constricted which restrains potential for diversified incomes. Because export controls remain restrictive, crop prices are low.

The livelihood strategies and coping mechanisms that Dry Zone farmers and laborers employ were found to be sensitive to the cumulative impact of identified pressures in several ways:

- The ability to purchase quality inputs, including labor is highly sensitive for all communities, irrespective of irrigation water or market access. This strategy is the *most* sensitive to the worsening effects of land degradation, the use of poor quality pesticides and fertilizer (which keeps yields lower and of lesser quality), and indebtedness.
- The capacity to maximize production by planting crops at the proper time, maximize income by selling crops at the optimal time, reduce risk by planting a diverse set of crops, and maximize production quality and quantity through effective soil and water management were found to be highly sensitive to shocks and stresses for communities with the least access to irrigation water and markets. These capacities are *most* impacted by drought, land degradation, and indebtedness.
- The ability to invest in productive assets, engage in secondary livelihoods, and access affordable financing were found to be moderately sensitive strategies for all types of Dry Zone communities. These strategies and coping mechanisms were found to be most sensitive to indebtedness, but impacted by a broad range of pressures.

PROGRAM IMPLICATIONS

The resilience of agricultural communities in the Dry Zone can be fostered by supporting more flexible access to effective livelihood strategies and coping mechanisms in the face of social, economic, and environmental shocks. The study identified several capacities that, when strengthened, will increase the resilience of Dry Zone agricultural communities by increasing productivity and diversifying income while reducing vulnerability to shocks such as drought, pest infestation, plant disease and long-term stresses such as land degradation and inflation. Areas of focus include:

- *Input and commodity markets* – Increased capacity to access and use both good quality inputs and profitable commodity markets
- *Soil productivity* – Increased capacity to access improved technology, techniques, and practices to sustain and improve the quality of this primary ecosystem service
- *Soil-water management* – Increased capacity to extract the greatest value from rain and irrigation water, and access relevant products and services while guarding land from degradation related to alkalinity, fertility, and organic content
- *Debt management* – Increased capacity for farmers to manage their existing debt, to access supportive financial services and reduce the constraints that repayment terms often place on coping strategies such as the timing of crop sales

Rather than focus on specific product or service markets, improved market linkages could enable improved crop diversification and market choices in agricultural markets that are quick to change. A stakeholder-centered approach is warranted, that strengthens linkages between actors by incentivizing functional and mutually beneficial relationships. In the long-term, a supportive enabling environment is also critical. Establishing the means for supportive policy and regulatory advocacy will help to ensure better input and output quality as well as more functional government support for farmers and laborers.



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ABOUT MERCY CORPS

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With a network of experienced professionals in more than 40 countries, we partner with local communities to put bold ideas into action to help people recover, overcome hardship and build better lives. Now, and for the future.



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