

# MALAWI CLIMATE CHANGE VULNERABILITY ASSESSMENT: ANNEX A. PARTICIPATORY RURAL APPRAISAL TOOLKIT

African and Latin American Resilience to Climate Change (ARCC)

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# ACRONYMS AND ABBREVIATIONS

ARCC	African and Latin American Resilience to Climate Change
CC	Climate Change
CC/V	Climate Change/Variability
CIESIN	Center for International Earth Science Information Network
DRR/M	Disaster Risk Reduction/Management
EPA	Environmental Protection Agency
FS	Food Security
FtF	Feed the Future (USAID)
GFDRR	Global Facility for Disaster Reduction and Recovery
GoM	Government of Malawi
HHLD	Household
IGA	Income Generating Activity
KII	Key Informant Interview
PRA	Participatory Rural Appraisal
TA	Traditional Authority
TT	Team Triangulation
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VA	Vulnerability Assessment
VAC	Vulnerability Assessment Committee
WALA	Wellness and Agriculture for Life Advancement (USAID)
WB	World Bank
XLS	MS Excel software, best used for the triangulation matrix

# I.0 INTRODUCTION

The Malawi component of the African and Latin American Resilience to Climate Change (ARCC) project includes an in-depth participatory rural appraisal (PRA) to understand community vulnerability and resilience to climate change. This PRA toolkit is available upon request. The approach suggested here is appropriate for a five-to-six day PRA to be carried out in each targeted community by a team of five researchers representing a variety of disciplines (i.e., agriculture/food and livelihood security, fisheries, hydrology, forestry, anthropology). These notes assume that the reader/user has some experience with the PRA methodology and knows how to use the standard toolkit. More specific guidelines for using the tools are provided primarily when they fall outside the usual practice, or as special reminders. Readers/users less familiar with the methodological principles and standard toolkit may wish to consult <http://www.crsprogramquality.org/storage/pubs/me/RRAPRA.pdf>.

The suggestions below should NEVER be blindly followed; they are neither a road map nor a recipe. Indeed, each PRA should be different, even if the overall objectives remain the same. The field teams should have the flexibility to adapt the tools based on the information that arises, allowing the tools and checklists to evolve (undirected by time constraints, but by genuine need and desire to expand the understanding of the field researchers). The changes made, however, do need to be communicated to the other teams, allowing them to make the same or similar changes to keep the results comparable across the full set of targeted villages. Similarly, the sequencing of the activities will depend on many factors including the availability of participants and the depth and breadth of information that comes out of each activity and its logical progression.

It is very important to remember that in PRA, the tools are not ends in themselves. They are rather a means of encouraging participation, organizing discussions, and desensitizing issues that may otherwise be awkward. It is therefore essential to encourage and capture the knowledge that is offered by respondents during each activity: explanations of **why** X number of beans were placed in a given category by the respondents are generally more important and vastly more insightful and revealing than the actual number of beans. **Why? is a word that should constantly be at the tip of the tongue of every qualitative researcher. If you do not have this reflex, you need to cultivate it.**

Checklists (also known as Topical Outlines) are provided below as an indication of the types of information that can reasonably be expected to come out of each activity. They are not exhaustive. Teams can and should refine the checklists as they go along and are encouraged to add additional topics to the extent that they are well suited to the tool being used. For all the checklist items, it is important to remember that the best information comes from digging more deeply, trying to understand the nuances, and getting to the logic behind the practices. This requires sensitive questioning and excellent listening. Almost every checklist issue can be probed with who, what, where, when, and why questions to get to more detailed and complete information. To avoid endless repetition, we have not listed these sub-questions under each issue.

It is critical that teams take the time at some point each day to digest the information they are gathering. The proposed format for this digestion is to conduct a triangulation session each day (see table below). Teams (pairs) having conducted a given activity need to report to the rest of the team using a structured format depicting the information that the Vulnerability Assessment (VA) needs to determine (here, called a triangulation matrix). Even if the whole team was involved, it is very common for members to have “heard”, observed, or even understood very different versions of the story. Discussing these in the context of the main objectives and information needs will enable a lively debate and stronger understanding. This activity will ensure that information is fully shared among team members and help to organize and analyze information as the work proceeds, allowing for time to probe further the next day or session to get an even stronger understanding.

The processing discussions, called Team Triangulations (TTs) among team members, are vital on a daily basis—often it even makes sense twice a day—before the information gleaned from one session is jumbled with another. Triangulation sessions should be an event that genuine researchers look forward to, not a chore that is dreaded.

Contemporary technology enables more and more often the use of a laptop and a delegated scribe to record the debates that occur during the triangulation sessions. Even if the scribe is a very fast typist or writer, it is often useful to digitally record the debates and discussions. The scribe should record them in the XLS format provided, one separate triangulation matrix file per village studied. When technology is no longer feasible, a backup plan using flipcharts is extremely helpful in preparing the final feedback session to the community as well as for doing the analysis and write-up. The flipcharts and discussions organized around them, however, need to be inserted with the appropriate level of detail into the Triangulation Matrix and updated at every possible moment. The individual(s) responsible for recording into the Triangulation Matrices need to be able to write in a language and tone that analysts not present in the village will rapidly and clearly understand. It is crucial that someone who was not in that village with you can read the Triangulation Matrix and feel as if they had been there alongside you. It is vital to insert “quoted text” that captures the feeling, the local color—even exact phrasing—of important explanations offered by the respondents.

**TABLE I.1. ARCC TRIANGULATION MATRIX, SIMPLIFIED DRAFT**

<b>To be completed for each case study village by the entire field team as they process their results each day</b>	<b>PRA Tool 1</b>	<b>PRA Tool 2</b>	<b>PRA Tool 3...</b>
<p><b>EXPOSURE</b> Record in each cell, how exposure to climate-related hazards, threats and changes in the natural resource base is perceived today and how it has changed...DISCUSS: frequency, intensity, coverage, and differentiated impact on vulnerable groups...see sub-categories in XLS file</p>			
<p><b>VULNERABILITY:</b> In each cell, describe how vulnerability (socioeconomic well-being, wealth, education, health, services, markets, etc.) is perceived today AND how it has evolved over past x years?...see sub-categories in XLS file</p>			
<p><b>ADAPTATION OPTIONS:</b> What strategies/options have already been employed as a response to evolving climate change exposure? Which are most successful, why? Which would be feasible and/or ideal under x conditions? ...see sub-categories in XLS file</p>			

## 2.0 PRA GOAL AND OBJECTIVES

Every PRA requires a set of clear and comprehensive study objectives that will guide the research/collection of information in the field. The objectives proposed here are the same that will help guide the summary of PRA results.

### GOAL

To understand the impact of climate change on rural communities in Malawi and the adaptation strategies they have or could employ to build resilience

*NB: ALL issues addressed in the study should be explored through the lenses of (1) socioeconomic differentiation and (2) historical evolution (past, present and future)*

### 2.1 OBJECTIVES

#### I. Profile communities with a particular focus on aspects that will illuminate the impact of climate change and people's ability/agency to adapt or respond.

- a. Historical context (e.g., access to natural resources, exposure to hazards and threats; general changes in well-being, food & livelihood security);
- b. Socio-cultural context (e.g., ethnicity, age, gender, wealth ranking) and services/partnerships and relations within and with other communities;
- c. Economic context (e.g., markets, transport, credit); and
- d. Climatic context (e.g., rainfall and temperature changes, hazard profiles, community risk analysis).

#### II. Understand the impact of climate change on livelihood portfolio(s) and general well-being.

- a. To what extent has the composition of livelihood portfolios shifted over time?
  - Here, more general livelihoods include fishing, livestock, and cash crops/income-generating activities (IGAs).
- b. What pressures, constraints, and opportunities caused the shifts?
  - What role has climate change played in motivating/necessitating these shifts?
- c. To what extent are people better or worse off as a result of the livelihood changes?
- d. To what extent are elements of climate perceived to impact general well-being: health, culture, etc.?

#### III. Understand the impact of climate change on agricultural production systems.

- a. What are the perceived impacts of climate change on agricultural systems?
  - i.e., seed selection, cropping patterns, methods/techniques, timing, etc.
- b. Attribution: to what extent does the community genuinely attribute noted changes in production to the climate?

- c. What impacts have *not* been adequately mitigated producing a negative impact on individual, household, or community well-being?
  - What subgroups of the population have been most affected and why?
    - Who are the winners? Losers?

**IV. Identify adaptation strategies that build resilience in the face of climate change.**

- a. What strategies have individuals, households, and communities already started to employ to attenuate the impacts of climate change?
  - Why was this mix chosen?
  - How have their chosen strategies evolved?
  - How effective have they been?
- b. Which climate impacts do they perceive to require adaptation but for which they have not yet identified solutions?
  - What do they perceive to be the most feasible, effective, and sustainable adaptation strategies for these?

## 3.0 SAMPLING FRAME

The PRA component of the ARCC Malawi Vulnerability Assessment aims to capture existing perceptions of climate change and adaptation measures that are already used and/or feasible to attenuate the impact. This knowledge must be gleaned from a set of villages and households that are representative of the diversity of dynamics in Malawi. To this end, criteria to consider in the sampling strategy and potential sources of georeferenced information permitting selection are portrayed in Table 3.1.

**TABLE 3.1. CRITERIA FOR SAMPLING STRATEGY AND SOURCES OF DATA AVAILABILITY**

Criteria	Assumptions	Data availability, with georeferenced data
<b>Climate change and variability</b> (projected and/or observations).	HHLs most exposed to CC/V already will have developed or be considering a greater variety or number of adaptation strategies.	UNDP's 2007 study is the only one found with sub-national climate projections: UNDP CC Country Profile, Malawi (McSweeney, et al., 2010). However, insufficient resolution to be useful.
<b>Livelihood strategies and agricultural production.</b>	<ul style="list-style-type: none"> <li>Adaptation varies by livelihood type (farmers, fishers, pastoral, hunters).</li> <li>High dependence on singular livelihoods and/or particular crops may increase vulnerability.</li> </ul>	<ul style="list-style-type: none"> <li>Livelihood zones: Sep 2005, VAC profiles</li> <li>Crop production: total area cropped for 2010 can be found at: <a href="http://www.countrystat.org/mwi/cont/pxwebquery/ma/130agr002/en">http://www.countrystat.org/mwi/cont/pxwebquery/ma/130agr002/en</a>.</li> <li>Specific crops: some available by EPA from Malawi Atlas of Social Statistics, 2005.</li> </ul>
<b>Major threats:</b> prices (77% <sup>1</sup> ), impact of drought/floods on yield (63%), and illness/death of family members (46/41%) are the major threats reported by Malawian HHLs.	Adaptation varies by variety, frequency and intensity of exposure to hazards/threats.	<ul style="list-style-type: none"> <li>Price/purchasing power: Malawi's PVA (GoM and WB, 2006) has a TA-level map of poverty headcount.</li> <li>Drought/flood maps from CIESIN (GFDRR), but these appear to include impact, not just exposure/risk.</li> </ul>
<b>Socioeconomics and demographics:</b> population density, index of remoteness, prevalence of female-headed households, dependency ratio, literacy.	Socioeconomic and demographic factors influence the need, decision and capacity to adapt.	Most of these variables could be sourced from the Malawi Atlas of Social Statistics, 2005.

Drawing on the combination of data compiled (described in Table 3.1 above), districts that are relatively more exposed to climate-related shocks appear to include Balaka, Chikwawa, Zomba, Machinga and Nsanje. In a parallel manner, districts that appear to be relatively more vulnerable include Machinga, Dedza, Thyolo, Mangochi, Ntcheu and Lilongwe.

Based on a very limited and partial analysis of these variables and guidance from the client, the following staged sampling has been used:

<sup>1</sup> This indicator is the only of 15 threats that reportedly increased in step with poverty (using quintiles).

	What is selected	What it is representative of
Strata A	Districts	USAID FtF/WALA Focus Areas
Strata B	Livelihoods (VAC)	All livelihoods existing in Strata A
Primary sampling unit	Villages (N=9)	Livelihood/District Pairs (Area common to both Strata A and B, “zones”)
Secondary sampling unit	Participants for Focus Groups & PRA Activities	<i>Depends on activity,</i> Livelihood or socioeconomic, age, etc.

### 3.1 STAGE 1: SELECTION OF DISTRICTS

The starting point for the sampling strategy is the set of 13 districts targeted by the Feed the Future Program (7 districts) and the WALA Program (8 districts, Machinga and Balaka are included in both) (see list and map portraying names and total population). The majority of these districts are in the Southern Region; among the 13, FtF features four from the Central Region and WALA, none.

### 3.2 STAGE 2: CHOICE OF VILLAGES (N=25,540 NATIONWIDE)

Within the selected ‘zones’ above, it was important to choose villages that capture each of the nine livelihood systems reportedly present within the 13 districts. They are described below in order of relative risk level (*9 zones: livelihoods within 8 districts*) and one village is chosen from each. This combination of livelihood zones covered by the VA/PRA indicates that the study may represent approximately 77% of Malawi’s total population (2003).

1. **Chilwa—Phalombe Plain Livelihood and Machinga District (cross-section):** greatest combined risk, and a livelihood system representing up to 10% national population. Unique characteristics: rain-shadow; flooding.
2. **Shire Highlands Livelihood and Zomba District (cross-section):** second most at-risk and 9% population. Greatest proportion of income sources in a normal year comes from animal sales (poor and middle); greatest also from trade. Unique characteristics: most densely populated area of Malawi.
3. **Thyolo-Mulanje Tea Estate Livelihood and Mulanje District (cross-section):** unique livelihood representing 5.6% of national population. The greatest proportion of food sources in a normal year comes from purchasing (poorest HHLDs). Unique characteristics: small land holdings, food-production deficits and proximity to Mozambique.
4. **Southern Lakeshore Livelihood and Mangochi District (cross-section):** unique livelihood representing up to 4.2% of national population. Greatest proportion of income sources coming from ganyu (poorest and middle). Unique characteristics: fishing is the major livelihood.
5. **Kasungu-Lilongwe Plain Livelihood and Dedza District (cross-section):** high relative vulnerability and a livelihood system representing 27% of national population. Greatest proportion of food sources in a normal year coming from maize, same for *ganyu* (poor and middle). Unique characteristics: greatest proportion of income sources from tobacco (poorest and middle income households).
6. **Rift Valley Escarpment Livelihood and Ntcheu District (cross-section):** moderate risk profile and 10% pop, very rarely studied. (No livelihood profiling data available). Projected for high increases in temperature, high proportion of female headed households. High dependency ration, high poverty, relatively strong production of pulses.
7. **Lower Shire Livelihood and Nsanje District (cross-section):** hot, dry zone but relatively productive and major cotton-growing area. Livelihood income sourced from food, cotton and livestock.

Mozambique exerts strong influence with ganyu and maize trade. Expected to suffer the greatest changes in rising temperatures and decreasing rainfall.

8. **Middle Shire Livelihood and Balaka District (cross-section):** relatively dry mid lowland area, with fishing on Shire river. Woodlands finance charcoal and firewood IGAs destined for nearby urban centers. High exposure to flooding and malaria, susceptible to volatile prices (highly dependent on maize).
9. **Phiralongwe Hills Livelihood and Mangochi District (cross-section):** highly agricultural (especially maize, groundnuts and cassava), low literacy rates. Not well studied (not included in VAC 2005).

### **3.3 STAGE 3: CHOICE OF PARTICIPANTS (FOCUS, KII, ETC.)**

Within each of the selected villages, it is important to choose participants keeping in mind the power/ agency dynamics among various leaders and traditional institutions. The toolkit details the purposive and random socioeconomic sampling required for each tool.

# 4.0 PRA TEAM COMPOSITION

Scott McCormick, *Malawi Team Leader*

Lezlie Moriniere, *Field Coordinator & Trainer*

Anna Farmer, *Technology & Asst. Trainer*

Susan Qashu, *Fisberies & Asst. Trainer*

Jason Agar, Kadale Consultants, Malawi

Kadale Coordinators

- Don Kalonga, Project
- Richard Kussen, Field

Kadale Team Supervisors (3)

Kadale Qualitative Researchers (3 teams \* 4 = 12)

Malawi Dept. of Meteorology: 1 Representative within each PRA team (to be confirmed)

## 5.0 VILLAGE CASE STUDIES

A total of nine villages will be studied in this PRA. They have been chosen to represent nine distinct livelihood zones that cover eight different districts of Malawi (see sampling above). Each case study entails one week spent in each village. The purpose of the case studies is to gain an in-depth understanding of each community in a meaningful way that can be compared with the other cases, grounded in the objectives detailed above.

# 6.0 SCHEDULING AND SEQUENCING OF ACTIVITIES

## 6.1 PRA SCHEDULE

**Training** (everyone): 3-7 Sep 2012, *Blantyre*

Case study 1 (for each of 3 teams): 10-15 Sep 2012, *x, y and z*

**1-day Rehash** (everyone): 17 Sep 2012, *Blantyre*

Case studies 2 and 3 (for each of 3 teams): *2 weeks immediately following*

**Complete and submit all field notes to Kadale:** first week October

## 6.2 CASE STUDY SCHEDULE (REPEATED FOR EACH)

The Case Study schedule is purposefully extended over six days to allow the requisite time for each activity to be completed appropriately, without haste and to give time to the research team to *process* the information (especially but not constrained to the TT session).

The generic flow of activities per case study is depicted below. Qualitative research is not rigid; if, for any reason, one of the activities below cannot be held in the timeslot/order listed, the others can be shuffled around to replace it. It is urgent for the team to “think on their feet”, providing creative solutions and never rushing through an activity “just to get it done”. As a rule of thumb for scheduling purposes, each activity can be estimated to require approximately 2 hours of time (in reality, experienced researchers may achieve the required understanding between 45 minutes and 3 hours, depending on the dynamic among the respondents).

Given a team of five researchers working in pairs (the fifth is always observing, taking notes, or supervising), many of the activities are to be run simultaneously. Those noted below with a \* are to be conducted with at least two sub-groups of the community (i.e., men and women separately), so multiple versions of the same activity are going on at the same time. Typically the more intensive activities are scheduled in the morning sessions. The evening sessions are reserved for one simple (non-repeated) session thereby leaving ample time for processing and the TT. The TT sessions each day are ideal with the presence of the entire team.

**TABLE 6.1. PRA ACTIVITY FLOW (5-6 DAYS FOR EACH VILLAGE)**

	AM	PM
<b>Day 1</b>	a. Protocol/introduction b. Hazard & Vulnerability Mapping*	c. Zigzag Diagram: FS/Rainfall <i>Team Triangulation (TT)</i>
<b>Day 2</b>	a. Transect Walks* b. Field Profiles*	c. Wealth Ranking <i>Team Triangulation (TT)</i>
<b>Day 3</b>	a. Livelihood Portfolio Evolution* b. Household Portfolio Management*	c. Seasonal Calendar <i>Team Triangulation (TT)</i>
<b>Day 4</b>	a. Key Informant Interviews* (KI: community level)	b. Climate Impact <i>Team Triangulation (TT)</i>
<b>Day 5</b>	a. Village History & Hope	<i>Final Team Triangulation (TT)</i> b. Give Back to the Community

	AM	PM
<b>Day 6</b>	Reserved to catch up or further triangulate before leaving the zone	

# 7.0 MATERIALS NEEDED

For each PRA activity (there are often two organized at the same time), the facilitators must have the following materials ready to use:

- **PRA Manual & Toolkit** (refer to pages dedicated to each activity) (available upon request)
- **Notebook and pencils/pens**
- **Recorder** (if possible, to refer back later when processing the information)
- **Ipad/Camera:** to take photos of process and results (or for respondents to take photos)
- **Bag of beans:** dry, multiple colors, amount of beans roughly equivalent to number of households in the village
- **Flip chart paper and markers**
- **Sheets of colored paper** (for Household Portfolio Management activity only)
- **Also:** desire to understand *why*, strong ears, open-mindedness, creative thinking, teamwork, concentration and patience

## 8.0 TOOLKIT

See pages 1-39 of the PRA Toolkit (not included) for all PRA activities to be conducted in each village, along with instructions on the process and the checklist of questions not to forget.

Also included in the toolkit are worksheets—tabular templates that will be revised during the training session, especially after the trial run in a nearby village. The worksheets are not to assist with taking notes; there is no space included for this. They are meant to highlight the guiding pieces of knowledge that should be extracted from the PRA activity. In summary:

- Matrices are to record the summary results (in synthetic format) that lends themselves to cross-village comparison with a quick glance. The most important results of the PRA, however, are not the numbers or codes you write on the matrices, but how intricately they are understood and explained.
- Hand-written notes, digital recordings and eventually the triangulation matrix records all the learning, understanding and full sets of explanations that help someone to fully understand the *who, why, when, and how* behind the matrices and pulls them into a larger knowledge platform that will help the PRA meet its research objectives.

Final versions of the template package will need to be prepared, and reproduced for at least 3 copies per researcher (total 45 copies of each page), upon which they can better follow and track results as they move from activity to activity and village to village.

At the end of the toolkit, more detail on the Triangulation Matrix (to be made available in XLS digital format to each team) and the checklist of items to prepare to give Kadale after each Case Study is complete. Teams are requested to have their scribes record all discussions in this digital framework during the TT, as it allows three sheets per file to be cross-checked and compared.

On the last “sheet” inside the triangulation matrix, there is a reference tool, named the “InfoMap.” This tool indicates which of the PRA activities should provide parts of each PRA information requirement.