Terms of Reference for Agricultural Risk Assessment

Technical Guidance Note

Working Paper #1
March 2014
Managing risks to improve farmers’ livelihoods
Abstract

Over the last decade, agricultural risks and uncertainties have escalated with compounding impacts on farmers, the private sector and government alike. This has brought to the fore, the surge for solutions, ideas, knowledge, and best practices on agricultural risk management (ARM). Efforts among stakeholders led to the establishment of PARM in 2013 as the main platform to house and bring opportunities for systematic sharing of knowledge, experience and perspectives in the field of ARM. PARM builds on existing initiatives and knowledge, in particular, the World Bank “Agricultural Sector Risk Assessment” in several countries, the FAO food security initiatives, the World Food Program (WFP) vulnerability assessments, as well as many Non-Governmental Organizations (NGOs) and the private sector resilience interventions. Based on consultation with stakeholders and experts in the field, PARM developed this reference document for holistic risk assessment in its focused countries. It provides a step-by-step guide on how to conduct a comprehensive, robust and participatory risk assessment, and can be adapted for other countries.
# Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARM and the Case for ARM</td>
<td>3</td>
</tr>
<tr>
<td>The PARM Process</td>
<td>3</td>
</tr>
<tr>
<td>Risk Assessment Studies (RAS)</td>
<td>3</td>
</tr>
<tr>
<td>Purpose of RAS</td>
<td>4</td>
</tr>
<tr>
<td>Outcomes from RAS</td>
<td>5</td>
</tr>
<tr>
<td>Technical Guidance on the RAS Process</td>
<td>5</td>
</tr>
<tr>
<td>The country context</td>
<td>5</td>
</tr>
<tr>
<td>Identification of agricultural risks: country profile</td>
<td>6</td>
</tr>
<tr>
<td>Mapping of Agricultural Risk Management initiatives</td>
<td>7</td>
</tr>
<tr>
<td>Risk analysis</td>
<td>8</td>
</tr>
<tr>
<td>Prioritization</td>
<td>9</td>
</tr>
<tr>
<td>Sources and methodology</td>
<td>10</td>
</tr>
<tr>
<td>References</td>
<td>11</td>
</tr>
</tbody>
</table>
PARM and the Case for ARM

Over the last decade, agricultural risks and uncertainties have escalated with compounding impacts on farmers, the private sector and government alike. This has brought to the fore, the surge for solutions, ideas, knowledge, and best practices on agricultural risk management (ARM). Efforts among stakeholders led to the establishment of PARM in 2013 as the main platforms to house and bring opportunities for systematic sharing of knowledge, experience and perspectives in the field of ARM.

The Platform for Agricultural Risk Management (PARM) is an outcome initiative of the G8-G20 discussion on food security and agricultural growth. It is funded through generous supports from the European Commission (EC), the French Development Agency (AFD), the Italian Development Cooperation (DGCS), German Cooperation (BMZ/KfW) and the International Fund for Agricultural Development (IFAD) and hosted at the IFAD Headquarters in Rome, Italy.

PARM provides technical support to Governments through evidence-based knowledge on agricultural risk and capacity development to mainstream relevant Agricultural Risk Management tools into policy (www.p4arm.org). PARM’s activities are currently focused on eight sub-Saharan African countries, where it works in strategic partnership with the NEPAD Agency (African Union’s New Partnership for Africa’s Development) and has collaborated with the Food and Agriculture Organization (FAO) since 2011 to establish Agriculture and Food Insecurity Risk Management (AFIRM) support facility to assist African countries in mainstreaming agriculture and food security risk management into their Comprehensive Africa Agriculture Development Programme (CAADP) implementation (Antonaci et Al., 2013).

Agricultural Risk Management (ARM) can significantly contribute to improving resilience of vulnerable rural households by increasing their capacity to absorb and adapt to risks. As a global platform to assist poor farming household and government, PARM builds on existing initiatives and knowledge, in particular, the World Bank “Agricultural Sector Risk Assessment” in several countries, the FAO food security initiatives, the World Food Program (WFP) resilience programmes, as well as many Non-Governmental Organizations (NGOs) and the private sector interventions.

The PARM Process

PARM activities are oriented to facilitate the development of ARM knowledge, tools, synergies and complementarities among different partners and stakeholders. As such, it follows a five-phase process of setting up, risk assessment, tools assessment and policy dialogue, follow-up, and implementation and learning. As a knowledge broker, PARM also delivers capacity development and knowledge sharing activities within and beyond focused countries. These CD and knowledge events provide opportunities for partners to learn and share agricultural risks and risk management experiences together.

Risk Assessment Studies (RAS)

The first substantial phase of ARM is the assessment of risks through a long-term vision and a holistic approach (OECD, 2009). This first stage is essential to defining the problem and identifying potential solutions and management tools. The risk assessment phase is built on a risk assessment study, findings from which are presented in a National Stakeholders Workshop for validation. The result of the risk assessment study and discussion with stakeholders is necessary to prepare the grounds for Policy Dialogue with high level government agencies, international donors and potential private sector investors and entrepreneurs to discuss potential ARM tools and priorities in a roadmap, including the capacity building support to improve local awareness on ARM and expertise to manage and conduct appropriate institutional reforms in countries and regions.

The identified ARM tools become the subject of different feasibility studies and policy dialogue, both of which are outside these TOR. The final objective of the whole process is to facilitate the mainstreaming of a holistic risk management strategy into national policy documents and agricultural investment plan, and its implementation, by matching the demand and supply of ARM tools suitable for farmers, market level stakeholders and Governments.

It is expected that Risk Assessment Study (RAS) be useful beyond the PARM-NEPAD process. As such, the resulting document should be usable as reference guide for the government, all stakeholders, the donors, service providers and International organizations that work on agricultural risk management issues.
Purpose of RAS

The RAS process is a series of rigorous and holistic analysis of agricultural risks to produce an outcome report, which becomes a useful reference documents for all stakeholders when identifying and prioritizing agricultural risks and risk management gaps and needs. Overall, RAS seeks to provide a comprehensive mapping and assessment of country-specific agricultural risks over the past three decades and in the foreseeable future. It also aims to give a clear picture about the likelihood of risk events occurring together with the economic and agricultural impacts at the macro and micro level. To the most basic level, every RAS would achieve the following five objectives;

1. to inform on the main risk factors and their likelihood;
2. to analyse their economic and agricultural impacts;
3. to identify and assess the existing ARM tools and policy instruments;
4. to identify the main ARM gaps and needs; and
5. to provide guidance for a prioritization of agricultural risks and ARM tools to be implemented.

In terms of scope, the contextual and conceptual understanding of RAS is based on a set of definitions outlined in the Text Box 1.

While RAS as defined by PARM's approach is a holistic process, it does neglect other credible methodologies. It can borrow and benefit from methodological developments of existing approaches such as the OECD (2011 and 2014), and the World Bank (2013), and also from vulnerability assessment studies undertaken by various UN institutions and NGOs including WFP, FAO and OXFAM.

Text Box 1: Definition of the scope of the work under the RAS

What is a risk? Risk is the effect of an uncertain event (potential situation or scenario), involving exposure to danger or loss of something of value. A risk can typically impede the achievement of the objectives of individuals or organizations (ISO 2009a).

What is an agricultural risk? Agricultural risk is a risk from any origin that involves a loss or damage on agricultural production, farm household income or food security.

Whose risk? Impacts on whom?

- First, the RAS will analyse the agricultural risks that threat the poverty and food security levels in the country. These risks are systemic, that is, they affect significant population groups or regions. The government is accountable to put in place the tools and the enabling environment that help to manage these risks. This is the country or government level risk.
- Second, the RAS will also analyse agricultural risks that can damage the economic activity and livelihood of farm households and the rural poor, particularly poor smallholders. Some of these risk situations are systemic, but others may only affect an individual farm or household, or a small group. The farmer bears these risks and is primary responsible to manage them using available policies and strategies. This is the producer level risk and will have a particular focus on poor producers and smallholders.

What does "holistic approach" mean? It means that, both at the farmer and the government level, all agricultural risks and their interactions are considered in the risk analysis, and all possible risk management tools and techniques and their interactions are also analysed. These includes risks that are originated in any link of the value chain and tools that are facilitated by any private or public entity.

What does rigorous assessment mean? It is an assessment that uses all available quantitative and qualitative information and statistical sources to estimate the frequency and consequences of agricultural risks at both government/country level and farm level. Rigorous means evidence based and, to the extent possible, expressed in quantitative terms including the likelihood of occurrence of a risk, and the losses or damages that it is expected to cause. Risk perceptions, if recorded with some method, can also be part of the risk assessment.

What is the sectorial or geographical coverage of the RAS? The RAS will provide a good overview of agricultural risks in the whole country. However a differentiated assessment may be needed for specific geographical areas, specific commoditites and value chains, and socio-economic groups (sectors). The ToR of the RAS in a specific country may require a special geographical or sectorial focus that will be discussed with the national stakeholders and decided in an early phase of the RAS.
Outcomes from RAS

The main outcome of a RAS is a systematically organised report with four main components: 1) country context and identification of agricultural risks; 2) mapping of existing agricultural risk management tools and initiatives; 3) development, analysis and evaluation of risks; and 4) prioritization of risks and risk management needs. In terms of the assigned delivery, these four components could be conducted by a single expert or a team of experts. The components can be delivered separately in two parts or wholly by the one team or different groups of experts. For instance, the first two components could be conducted by a national expert or team while the last two components requiring more statistical and econometrical expertise could be conducted by an internationally experienced expert or team. The work will have to be undertaken in close coordination to create synergies as the information from each component will inform the subsequent component.

The author/s will present the report during the National Stakeholders Workshop for prioritization, and will proceed to the revision of the RAS to reflect the views expressed by the stakeholders during the workshop.

In any case the final report will include possible recommendations or priorities to improve agricultural risk management and related tools, to implement specific capacity building activities or to develop information tools.

Technical Guidance on the RAS Process

The full study will cover all the items in the following outline. However in some countries the existing analysis and needs may differ and some items in the outline could be undertaken as single items.

Part One
1) Introduction: The country context
2) Identification of agricultural risks: country risk profile
3) Mapping of existing Agricultural Risk Management tools and policies

Part Two
4) Risk analysis: a systematic quantification of impacts and likelihood
5) Prioritization of risks and ARM tools
6) Sources and methodology

Following ISO (2009b), the outline of the report distinguishes between risk identification, risk analysis and risk evaluation. In the context of agricultural risk management, a specific section is included on identifying and analysing the existing ARM strategies in the country. The content of each of the items in the outline is further described below;

1) The country context

This section should provide an overview of the production, economic and demographic characteristics of a specific country's agricultural sector, in particular those aspects that are more relevant for agricultural risk management. It should also analyse the importance and trends of food and agricultural sector for GDP, employment, imports and exports. Similarly important is the incidence of poverty and malnutrition in rural areas. The major characteristics of the agricultural sector and the influence of the production structure on the risk exposure (e.g. agro-climatic zones, farm size, share of subsistence farming, irrigation) as well as the major commodities and production trends for crops, livestock, fisheries, and forestry, and their relative importance for the vulnerable populations also need to be analysed. In order to understand the relative influence of the agricultural sector to the service economy, other parameter to be included in the country context analysis are the employment level and the share of small-scale farmers for each major commodity and zones, infrastructure and public goods (e.g. transportation, energy services, agricultural information and extension systems, warehouses and storage facilities, weather stations, financial sector infrastructure, telecommunication, fertilizers and seeds markets etc.), market structure and access (for smallholders), private sector actors (MFI, Banks, Insurances etc.) and the organizational level of farmers, productions and productivity of most relevant commodities.

This information becomes the basis for identifying the sectors, agro-ecological zones and groups of farmers that are important and deserve to be the main focus of the study. If their risk exposure is likely to differ, separate information on the specific risks of these specific "sectors" will be provided in the risk assessment study in the following sections.
2) Identification of agricultural risks: country profile

Purpose
The principal purpose of a country risk profile is to provide a clear picture of all the identified agricultural risks in a particular country. This requires a systematic identification and review of agricultural risk from the available literature and statistical sources and presenting the implications in a systematic way. A comprehensive profiling further considers available studies and documents on risks at the national/government and at the producer levels. It will also identify and integrate quantitative (statistical) and/or qualitative information on agricultural risks and risk perceptions.

Scope
In terms of scope, the following risks should be considered in the identification process: (i) food security and agricultural production (drought, floods, crop pests and diseases, livestock diseases); (ii) food markets and trade (output price risks, fertilizer, feed, improved seeds and other input risks); (iii) policy and regulatory risk (e.g. related to trade); and iv) other risks affecting household income and food security (e.g. wages and non-farm income). The impact of the different risks at national level for the Government and on smallholder livelihoods will be analysed. The risk profile should also include an assessment and quantification of the different risks (likelihood and severity of damage) in the different “sectors” at both government and producer levels. See Table 1 for the complete list of different sources of risks.

Table 1: Sources of agricultural risk

<table>
<thead>
<tr>
<th>Sources of agricultural risk</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather-related risks</td>
<td>A literature review of reports and sources that identify and measure agricultural risks in the focused country, mainly expressed in terms of variability, or severity and frequency.</td>
</tr>
<tr>
<td>Natural disasters (including weather)</td>
<td>A review of available statistical sources to identify and measure agricultural risks in the focused country, typically time series data on diverse matters such as weather, production, prices, input use, nutrition etc.</td>
</tr>
<tr>
<td>Biological and environmental risks</td>
<td>An integrated and systematic presentation of the agricultural risks compiled for the focused country</td>
</tr>
<tr>
<td>Health risks</td>
<td>An assessment of the implications of Climate Change on the future agricultural risk profile</td>
</tr>
<tr>
<td>Market-related risks</td>
<td>Main sources</td>
</tr>
<tr>
<td>Logistical and infrastructural risks</td>
<td>- Review of perspectives from academic literature, government documents and reports of international organizations or NGOs.</td>
</tr>
<tr>
<td>Management and operational risks</td>
<td>- Review of statistical sources from surveys (including farm household surveys and vulnerability assessments), censuses and other statistics from the statistical agencies, meteorological agencies, research centres, international organizations and NGOs based in the focused country.</td>
</tr>
<tr>
<td>Macroeconomic Public policy and institutional risks</td>
<td>- Interviews and discussions with experts and stakeholders.</td>
</tr>
<tr>
<td>Civil unrest, conflict and Political risks</td>
<td>Methodology</td>
</tr>
</tbody>
</table>

Outcomes
- A literature review of reports and sources that identify and measure agricultural risks in the focused country, mainly expressed in terms of variability, or severity and frequency.
- A review of available statistical sources to identify and measure agricultural risks in the focused country, typically time series data on diverse matters such as weather, production, prices, input use, nutrition etc.
- An integrated and systematic presentation of the agricultural risks compiled for the focused country
- An assessment of the implications of Climate Change on the future agricultural risk profile.

Main sources
- Review of perspectives from academic literature, government documents and reports of international organizations or NGOs.
- Review of statistical sources from surveys (including farm household surveys and vulnerability assessments), censuses and other statistics from the statistical agencies, meteorological agencies, research centres, international organizations and NGOs based in the focused country.
- Interviews and discussions with experts and stakeholders.

Methodology
The main methodology should draw on literature reviewing and basic statistical and graphical risk analysis. Tables of indicators and graphs could be essential, where necessary. The reviewed studies should be based on...
statistical analysis of time series of historical information or on other sources of information gathered with all kind of methods. According to ISO-IEC (2009), the most applicable methods for risk identification are: brainstorming, structured or semi-structure interviews, delphi techniques to combine experts’ opinions and scenario analysis.

### 3) Mapping of Agricultural Risk Management initiatives

**Purpose**
The mapping of risk management initiatives and tools should mainly involve identifying, describing and analysing the main government policies, donor-financed initiatives, market instruments, community devices and farming households’ strategies that have high incidence in facilitating risk reduction at the government or producer level. A comprehensive risk assessment should investigate and analyse the scope, participation, financial resources and implementation of existing agricultural risk management initiatives. The analysis should focus on matching the existing initiatives with the risks and sectors for which they provide risk management solutions. It should also discuss the possible interactions between different tools and how they reinforce or crowd out each other and the institutional and policy gaps.

**Scope**
The review should cover experiences, ongoing projects, coordination mechanisms and studies related to instruments for agricultural risk management. These include local strategies led by households or communities, market tools to transfer risk and government policies, focused on either risk reduction, mitigation or coping (Table 2). Government policies can also be designed to underpin market tools or local strategies. For instance: technology adoption, disaster risk management, safety nets (both producer and consumer oriented), insurance schemes and financial products including from microfinance institutions; market and trade risk management such as warehouse receipt systems, commodity exchanges, market information systems and contract farming; grain stock management and trade policies; and any other risk management strategy.

If the list of existing initiatives is too long for a single report, at least a full list of initiatives should be presented and only a selection of tools will be analysed. The selection should include the tools with the largest scope of use or financial size, the largest potential to respond to the main risks in the focused country and the largest innovative potential (World Bank 2005). The assessment could also include political economy aspects that are relevant for understanding the existing measures and for the implementation of potential new ARM tools. For each initiative or tool the assessment report will provide:

- Background information including type of ownership of risk management programs and projects (public, private, cooperatives, NGO), coverage, major hurdles (in relation to accessing the instrument by small holders), etc.
- Review and assess the performance of existing tools, coordination mechanisms, regulations, legal frameworks, programs and policies in place;
- Identify institutional and policy gaps and chart out a strategy/direction to cover them and meet the diversified needs of the rural community and the value chain.

**Table 2:** Risk management tools and strategies

<table>
<thead>
<tr>
<th>Type of risk management</th>
<th>Local strategies</th>
<th>Market tools</th>
<th>Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Information Systems on weather, production, yields, prices, pest and diseases.</td>
<td>Training on risk management</td>
<td>Macroeconomic policies</td>
</tr>
<tr>
<td>Risk reduction and mitigation</td>
<td>Technological choice</td>
<td>Commodity exchanges (Futures, options…)</td>
<td>Legal frameworks</td>
</tr>
<tr>
<td></td>
<td>Diversification in production</td>
<td>Insurance</td>
<td>Disaster prevention (flood control)</td>
</tr>
<tr>
<td></td>
<td>Crop sharing</td>
<td>Vertical integration</td>
<td>Prevention of animal diseases</td>
</tr>
<tr>
<td></td>
<td>Common storage facilities</td>
<td>Contracts in production or marketing</td>
<td>Early Warning Systems</td>
</tr>
<tr>
<td></td>
<td>and other community base mechanisms for risk sharing</td>
<td>Spread sales and warehouse receipts</td>
<td>ARM coordination platforms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diversified financial investment</td>
<td>Regional market and trade policies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Off-farm work</td>
<td>Tax system income smoothing</td>
</tr>
<tr>
<td>Risk coping</td>
<td>Borrowing from neighbours family (ROSCAs…)</td>
<td>Selling financial assets</td>
<td>Disaster relief</td>
</tr>
<tr>
<td></td>
<td>Intra-community charity</td>
<td>Saving/borrowing from banks and</td>
<td>Social assistance</td>
</tr>
<tr>
<td></td>
<td>Small scale charity</td>
<td>Microfinance Institutions</td>
<td>Agricultural support programmes</td>
</tr>
<tr>
<td></td>
<td>Selling assets</td>
<td>Off-farm income / work</td>
<td>Emergency stocks</td>
</tr>
</tbody>
</table>
Outcomes

- An inventory of all identified agricultural risk management tools and strategies
- Description of the scope and characteristics of each tool and strategy
- Analysis of the performance and matching existing tools with existing risks
- Identification and discussion of policy gaps

Main sources

- Statistical sources indicating time series data on outcomes of specific agricultural risks tool
- Government information and reports on existing policies and implementations
- Reports and information of International Organizations, NGOs and research centres on the performance of existing agricultural risk management tools
- Existing work on resilience strategies in The Country
- Interviews with government officials, experts and stakeholders

Methodology

The main methodology is the review of the existing agricultural risk management tools related projects implementation and evaluation reports, policy analysis on specific tools and policy reports.

4) Risk analysis

Purpose

Risk analysis involves understanding the risks, their nature, causes and sources, and, to the extent of possibly quantifying their likelihood and consequences at the country level and on smallholders livelihoods. It also involves understanding the existing ARM tools and strategies and quantifying their implications for producers and government and their capacity to contribute to manage agricultural risks. Finally it implies the identification and analysis of the main ARM gaps and needs.

Scope

This section on risk analysis seeks to be quantitative and complementary to the discussion and assessment in the previous sessions – the Part One. This component of the study requires the use of more sophisticated techniques to analyse the risk and tools that have already been identified. Original analysis of statistical information, in particular in time series form, is expected to quantify the consequences and likelihood of different risks.

The analysis should cover the two levels envisaged in this study: the national level, and the producer/household level. Aggregate, commodity, market and sector specific data will be the main data source for the former, while individual data on households and farms will also be used in the latter. The availability of such data should be investigated during section 1 on country profile. Among the producers, the analysis should also investigate the impacts for different "sectors" if identified as having differentiated risks in Part One.

The analysis could include measuring and understanding the variability of weather, prices, production, yields, income, consumption and other relevant variables Statistical methods will be used to measure variability. The main indicator of variability will be the standard deviation or the coefficient of variation of the variable/s that best summarizes the impact of risks on livelihoods and food security, such as income, consumption or nutrient intake in the household and their distribution across households. Other indicators to analyse the risk could also be envisaged. The indicators developed by the study will be compared or presented together with any other risk assessment indicators available in The Country.

Shocks of different degrees of severity need to be identified using historical data. As such the analysis should attempt to define three layers of risks: frequent but small normal risks, medium risks, and rare but very damaging risks (disasters). These different layers normally have different requirements in terms of policy action (OECD, 2009). Two criteria should be used of the identification of risk layers: the severity of the impacts compared to the average variability, and the frequency or likelihood of the event occurring. The occurrence of normal, medium and disaster consequences will be associated with the occurrence of specific situations or sources of risk. To the extent possible, different risks should be characterized with the corresponding indicators of variability, mean severity and frequency, and subsequently classified in different risk layers.

Additionally, the investigation into the correlation between different sources of agricultural risk is required together with a development, calculation and incorporation of appropriate indicators of correlation into the analysis.

The existing ARM tools and strategies and the actual beneficiaries should be analysed with respect to the main risks identified in the study. This analysis could be based on the knowledge about the ARM initiatives in previous section, but further analysis including modelling is encouraged. This may require the use of economic models with uncertainty, such as Montecarlo simulations and/or scenario analysis. Finally, the indicators about risk in a
focused country should be benchmarked with respect to other relevant countries, whenever possible.

**Outcomes**
- Statistical analysis of risks using time series at aggregate country level and at producer level data, possibly with some differentiated sectors of producers.
- Tables of agricultural risk indicators: one aggregate for the country and possibly, one by sector of producers.
- Tables of agricultural risk correlations.
- Tables of main agricultural risks and available initiatives to manage each of them, with indicators of their capacity to deal with that risk.
- Analytical report on the country Risk Assessment Study
- An assessment of availability of data for Risk Analysis in the country

**Main sources**
- Statistical sources on production, yields, income, consumption, prices and weather, from statistical agencies, international organizations, research institutions or NGOs.
- If available, household income or expenditure surveys are recommended for the producer risk assessment.
- Possible elaboration of specific surveys for the study, if resources are available
- Existing reports on risk assessment from any source.
- If quantitative information is not available, qualitative sources could be valuable source.

**Methodology**
The main methodology is the time series analysis of available statistical sources. Whenever the analysis of the past is likely to be biased to estimate future risks (e.g. implications of climate change on weather conditions), the likely sign and size of the bias should be discussed. According to IOS-ICE (2009) other methods to rely on for reducing biases may include structured discussion in a meeting or workshop of experts or stakeholders (e.g. SWITF); Scenario Analysis defining a specific set of scenarios of risks and policies (this will typically require to be supplemented with an economic model) and more sophisticated statistical methods based on Monte Carlo simulations, Markov analysis or Bayesian statistics.

If resources are available, specific policy analysis could also be covered or undertaken. This would require the use of economic models with uncertainty, Monte Carlo simulations and/or scenario analysis. See OECD (2014) for an example of the use of these types of policy analysis. If quantitative information is not available, qualitative sources and methodologies could be an important source.

5) **Prioritization**

**Purpose**
Risk evaluation and prioritization involves using the information and indicators from the country profile and the risk mapping (sections 1 and 2) and the risk analysis (section 3) to assist agricultural risk management policy decision making. This assistance will involve the development of easy-to-use graphs or tables showing the main characteristics of different risks, the vulnerability to those risks, the impacts of existing ARM tools and, subsequently, the existence of ARM gaps.

**Scope**
The objective of this Section is to identify the main gaps in terms of the existing risks and the ongoing risk management activities, tools, policy and coordination mechanisms in the country. This final step of the risk assessment study (RAS) focuses on a prioritization of risks based on the previous analysis. The prioritization is based both on aggregate figures (e.g. overall losses to the GDP) as well as on disaggregated figures for producers, particularly small holders (e.g. events that may not severely affect overall GDP or many producers at the same time, but have major consequences for groups of small holders for commodities, in particular non-traded ones). The discussion about the prioritization of risks should be based on a method such as the consequence/probability matrix, and/or scenario analysis. Other methods could be proposed and implemented if appropriate.

This final section will provide the national government and the stakeholders with clear assessment of:
- Priority risks making rational decisions on what areas to focus on. The analysis quantifies risks and their impact at country and producer level and allows the government to make an evidence-based prioritization of risks.
- The analysis will point out tools and policy instruments that could efficiently improve agricultural risk management in the Country related to the identified risk priorities and level of vulnerability to those risks. It will include specific suggestions for feasibility studies to manage the identified prioritized risks to be implemented.
- Gaps related to information and capacity. The analysis will assess which are the most critical capacity and
information needs and bottlenecks. It will also include suggestions on improving information, knowledge and capacity.

**Outcomes**
- Consequence/probability matrix
- Changes in the consequence probability matrix of the use of different tools.
- Scenario Analysis covering: a limited number of scenarios that are identified and quantified with event/consequence/likelihood information; and a limited number of tools and their consequences in each scenario.
- Based on the previous analysis recommendations (or policy options) on identified information gaps and risk management priorities.

**Main sources**
The main sources should be the same as the risk identification, mapping and analysis in the previous sections.

**Methodology**
The use of consequence/probability matrixes and scenario analysis are strongly advised. Other appropriate methodologies could be developed, where necessary.
The use of supporting methods such as discussions in meetings or workshops of experts and/or stakeholders should be envisaged if possible as part of this study and the PARM process.

**6) Sources and methodology**
The last section of the study will be devoted to discuss all the information and methodological challenges in the focused. The methodological choices made for the study should be discussed and well documented.
References


