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Scoping study for partner driven cooperation in disaster risk management between Sweden and Botswana

Abrahamsson, Marcus; Becker, Per

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LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

Scoping study for partner driven cooperation in disaster risk management between Sweden and Botswana

November – December 2010

MSB and NDMO

Marcus Abrahamsson
& Per Becker

Table of contents

1. INTRODUCTION	1
2. METHODOLOGY.....	2
2.1. ANALYSIS OF PROJECT CONTEXT	3
2.2. STAKEHOLDER ANALYSIS.....	5
2.3. SITUATION ANALYSIS	6
2.3.1. Analysis of risk	6
2.3.2. Analysis of capacity to manage risk	7
2.4. OBJECTIVES ANALYSIS	11
2.5. PLAN OF ACTIVITIES	12
2.6. RESOURCE PLANNING.....	12
2.7. INDICATORS.....	13
2.8. PROJECT RISK ANALYSIS AND MANAGEMENT	14
2.9. ANALYSIS OF ASSUMPTIONS	14
3. RESULTS AND DISCUSSION.....	16
3.1. ANALYSIS OF PROJECT CONTEXT	16
3.2. STAKEHOLDER ANALYSIS.....	18
3.3. SITUATION ANALYSIS	20
3.3.1. Risk Assessment	20
3.3.2. Forecasting.....	22
3.3.3. Monitoring.....	23
3.3.4. Impact Assessment.....	24
3.3.5. Prevention/Mitigation	25
3.3.6. Preparedness.....	26
3.3.7. Response.....	28
3.3.8. Recovery	29
3.3.9. Evaluation	30
4. CONCLUSIONS	32
5. REFERENCES	35

1. Introduction

Botswana and Sweden have a long tradition of cooperation and friendship. The form of this cooperation has been changing over the years from the mainly bilateral development cooperation of the past to the partner driven cooperation of today.

The National Disaster Management Office (NDMO), under the Office of the President, is the governmental coordinating authority for disaster risk reduction, response and recovery in relation to both natural and manmade disasters in Botswana. NDMO is currently driving to shift the country's traditional focus on disaster response towards a more balanced approach between proactive activities of disaster risk reduction and reactive activities of disaster response and recovery. A shift that is challenging but necessary to better protect human life, property, livelihoods and the environment for sustainable development in the future.

The Swedish Civil Contingencies Agency (MSB) is a governmental agency active in disaster risk management. Even if it is within the organisation's mandate to support the development of capacities for disaster risk management in other countries, MSB too benefit from collaborating in addressing common challenges.

NDMO and MSB have had a dialogue for about a year about partner driven cooperation focused on addressing mutual challenges for disaster risk management in Botswana and Sweden. To take this dialogue further, the partners performed a scoping study in November-December 2010 to identify challenges on which to focus their mutual efforts. This report is the output of that scoping study.

The purpose of the scoping study is in other words to form a foundation for further project design, by identifying challenges for disaster risk management and suggest which to focus on in order to facilitate sustainable project results in regards to capacities for disaster risk management in Botswana and Sweden.

2. Methodology

The methodology of the scoping study follows Logical Framework Approach (LFA) and builds upon Örtengren's (2003) work in the form of Sida's guidelines for LFA. The LFA methodology is however adapted to suit the particular context of capacity development for disaster risk reduction and climate change adaptation.

The rationale of the Logical Framework Approach is that there is a current situation that contains some challenges that are deemed undesirable but possible to resolve through purposeful activities. In other words, that there is a current situation that can be turned into a desired situation through the design and implementation of a capacity development project for disaster risk management (Figure 1).

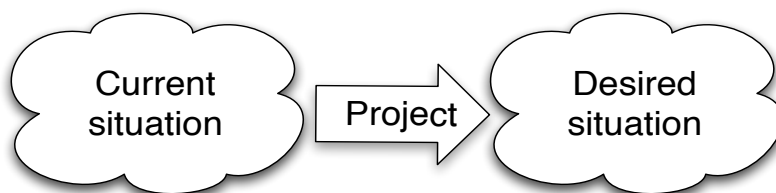


Figure 1. The rationale of LFA.

The purpose of the scoping study is in this framework to analyse and present current capacities for disaster risk management in Botswana. The version of LFA used is divided into nine steps, three focused on the current situation, one focused on the desired situation and five focused on the project (Figure 2). Thus only the first three steps of the methodology are applied in practice, but the remaining steps are also presented in the methodology chapter to guide further work.

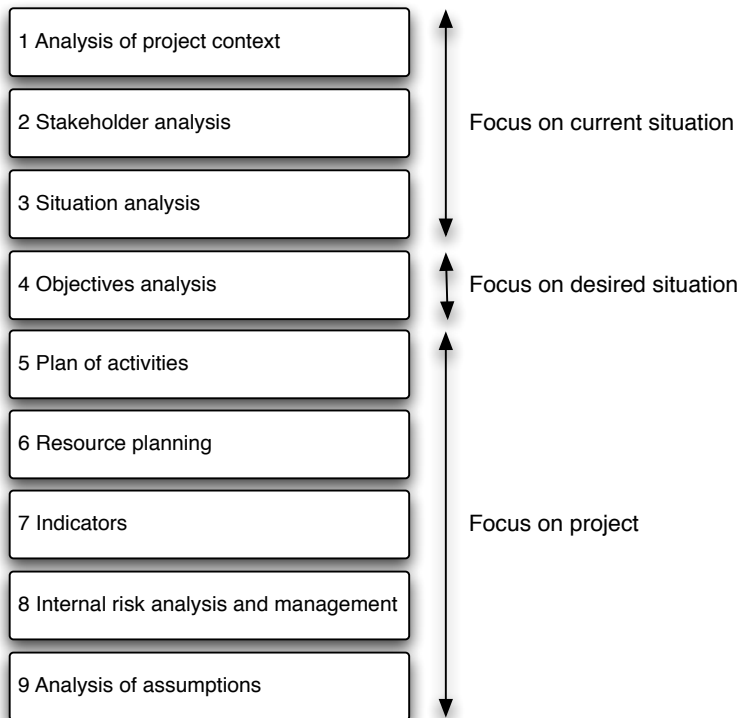


Figure 2. The steps and focus of LFA.

For every step of the methodology, one or a few overarching questions are initially presented (in *italics*) to illuminate the main purpose of that step (based on *Ibid.*). Thereafter follows more detailed questions to answer for each step, as well as methods and sources to use when answering them. The detailed questions are developed from the work of Ulrich (2000), Örtengren (2003) and Becker (2010), and adapted to suit the context of capacity development for disaster risk management.

2.1. *Analysis of project context*

What is the general rationale and context for the project?

When designing a project for capacity development for disaster risk management it is crucial to start the process by contemplating and formulating the general rationale for the project in the first place. Being

explicit and transparent about the reasons for the potential project, as well as for engaging in the process of designing it, is important for building trust between stakeholders, for commitment and ultimately for project effectiveness.

It is also important to consider that the notion of “development”, in the concept of capacity development, may carry different meanings to different people involved in the project design process. What is considered an improvement for one stakeholder may not be considered an improvement by another (Ulrich 2000). It is thus essential to think about and present what is to be considered “development” in the project.

Finally, it is necessary to identify what contextual factors that may have an effect on the project (Örtengren 2003). Although this initial part of the project design process is restricted to rather superficial identification of general factors, there may be a broad range of physical, environmental, political, economical, social and cultural factors to include in the analysis. A common tool to use for such analysis is SWOT analysis, which stands for strengths, weaknesses, opportunities and threats.

This step of the Logical Framework Approach is summarised as the answer to three questions:

1. What is the general rationale for the development of capacities for disaster risk management in the particular context?
2. What different visions of “development” are considered, and how are they reconciled?
3. What are the general physical, environmental, political, economical, social and cultural factors that could affect the project?

The SWOT analysis of this scoping study was done by NDMO and other national stakeholders, with support from African Centre for Disaster Studies (ACDS), in Gaborone 30-31 August, 2010.

2.2. Stakeholder analysis

Who are directly or indirectly influenced by and exert an influence on what takes place in the project?

The second step of the LFA methodology is the stakeholder analysis, which is an identification and analysis of who are directly or indirectly influenced by or influencing the potential capacity development project for disaster risk management. The stakeholders can be divided into beneficiaries, decision-makers, implementers and financiers (*Ibid.*). A beneficiary, in this framework, is a stakeholder whose interests are served by the project, a decision-maker is a stakeholder in a position to change it, an implementer is realising its activities, results, purpose and goal, and a financier is funding the project. It is also important to think about and decide who is to be considered an expert, i.e. what knowledge is considered relevant, and where those involved could seek some guarantee that improvement will be achieved by the project. Finally, and for legitimacy, it is also important to attempt to directly involve some stakeholder who argues the case of those who cannot speak for themselves, e.g. marginalised groups, future generations, the environment, etc, and who seeks the empowerment of those affected but not involved.

This step of the Logical Framework Approach is summarised as the answer to four questions:

1. Who are the beneficiary, decision-maker, implementer and financier?
2. Who is considered an expert and what counts (should count) as relevant knowledge?
3. What or who is assumed to be the guarantor of success?
4. Who is witness to the interests of those affected but not involved and what secures their emancipation?

The stakeholder analysis for the scoping study is done in dialogue between MSB and NDMO.

2.3. Situation analysis

What is the current situation? What are the problems in this situation? What are the causes of these problems? What are the effects of these problems?

The situation analysis is an identification and analysis of the problem to be resolved by the project, and thus the reason for its existence. Situation analysis is in other words fundamental as it is impossible to define goal, purpose, results and activities in an effective manner without first describing the current situation which the project is intended to address. Such description is generally guided by questions about what the problems are in the current situation as well as their causes and effects (*Ibid.*:9-11). Similarly, the more recently emerged process of capacity assessment emphasises the importance of analysing current capacities and capacity needs (UNDP 2008b; UNDP 2008a; UNDP 2009). The challenge is to translate these general approaches to the specific context of capacity development for disaster risk management.

If the goal of disaster risk management is to reduce disaster risk and the goal of capacity development in this context is for individuals, organisations and societies to obtain, strengthen and maintain capacities to do just that (UNDP 2009:5), two clear areas for analysis of the current situation emerge. Firstly, what current and future risk that the individuals, organisations and societies are up against, and secondly, what capacities they currently have to manage it. The situation analysis for capacity development for disaster risk management involves in other words the analysis of risk and the analysis of capacity to management risk.

2.3.1. Analysis of risk

There are many methodologies for analysing risk available in the world. As the National Disaster Management Office (NDMO) had already commissioned a consultant for performing a Hazard Identification, Vulnerability and Risk Assessment for the Republic of Botswana (2008), that analysis is used as input to this particular scoping study.

2.3.2. Analysis of capacity to manage risk

With a clear picture of what risks that the system for disaster risk management and climate change adaptation is up against, it is time to analyse the current capacities of the system for managing those risks. The concept of capacity is generally defined as “[t]he combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals” (UNISDR 2009:5). However, to be able to systematically analyse the current capacities for disaster risk management and climate change adaptation, it is vital to concretise what strengths, attributes and resources that contribute to what goal, as well as how to do it.

The purpose of the system for disaster risk management and climate change adaptation is to protect what human beings value, and for doing that the system needs to perform a set of functions. These functions are general for all such systems in the world, but how, by who, with what resources, etc, the functions are done are contextual and varies from country to country. To protect what human beings value, the system for disaster risk management and climate change adaptation must be able to anticipate, recognise, adapt to and learn from threats, accidents, disasters and other disturbances to society. The functions for anticipating such events before they happen are risk assessment and forecasting, and for recognising when they are about to happen, or has happened, are monitoring and impact assessment. To adapt society to protect what human beings value, we utilise the proactive functions of prevention/mitigation and preparedness, as well as the reactive functions of response to and recovery from actual disasters. Last, but not least, to continuously learn and build an increasingly safe and sustainable society, we need to utilise the function of evaluation and use its results for increasing the effectiveness of the system. These nine functions are not only crucial in themselves, but also largely dependent on each other in such a way that the performance of one function requires the output from another function, e.g. to respond by warning the public to take shelter for a coming cyclone necessitates information from forecasting or monitoring the weather. See figure 3 for an overview of functions and their relations.

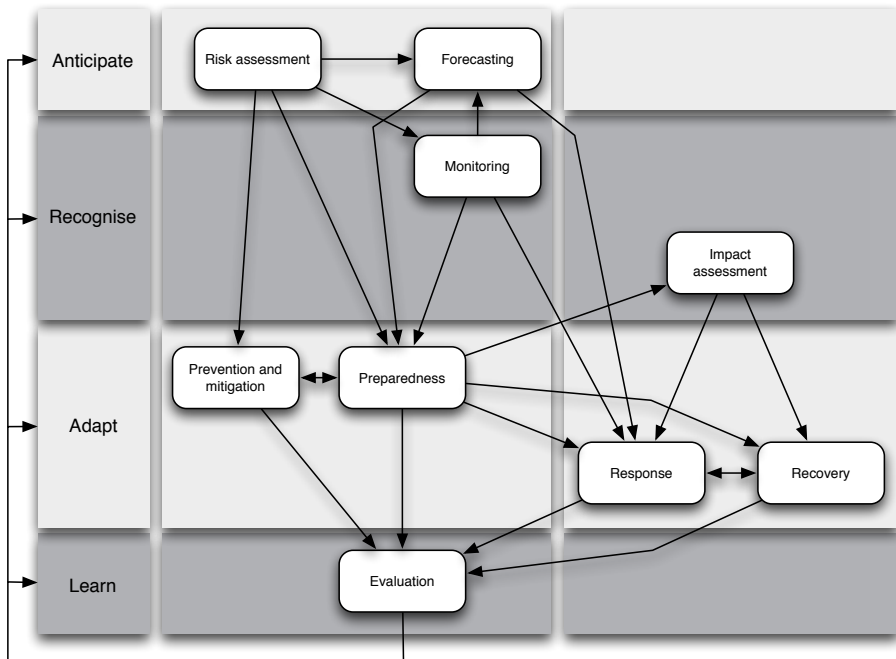


Figure 3. The functions of systems for disaster risk management and climate change adaptation.

These nine functions are required for any system for disaster risk management and climate change adaptation in the world (Figure 3). Analysing the capacity for each function in a specific context, however, entails analysing what actually exists in that context in order for each function to work. These factors can generally be categorised under (A) legal and institutional frameworks, (B) system of organisations, (C) organisation or (D) human and material resources (Schulz *et al.* 2005:32-50). Although there are a large number of potential questions that could be useful to answer to identify and analyse these factors, the methodology of this scoping study limits them to 22 guiding questions that needs answering for each function (Table 1). These guiding questions are not necessarily asked straight out, but needs answering in one way or another for a comprehensive analysis of capacities for disaster risk management and climate change adaptation.

Levels of factors determining capacity				
Functions	A. Legal and institutional framework	B. System of organisations	C. Organisation	D. Resources
Anticipate 1. Risk assessment 2. Forecasting Recognise 3. Monitoring 4. Impact assessment Adapt 5. Prevention & mitigation 6. Preparedness 7. Response 8. Recovery Learn 9. Evaluation	A.1) Are there any legislation or policy requiring [function]? A.2) Is the utility for [function] stated in legislation or policy? A.3) What stakeholders are identified in legislation or policy as involved in [function]? A.4) Are the legislation or policy stating to whom and how the results of [function] should be disseminated? A.5) Are funds earmarked by legislation or policy for [function]? A.6) Are the legislation or policy implemented? A.7) Are there any values, attitudes, traditions, power situation, beliefs or behaviour influencing [function]?	B.1) What stakeholders and administrative levels are involved in [function]? B.2) Are the responsibilities of stakeholders and administrative levels clearly defined for [function]? B.3) Are interfaces for communication and coordination between stakeholders and administrative levels regarding [function] in place and functioning? B.4) Are interfaces for dissemination, communication, and integration of the output of [function] to stakeholders involved in other functions that depend on the output? B.5) Are interfaces for facilitating coordination between functions in place and functioning?	C.1) What parts of each organisation are involved in [function]? C.2) Are the responsibilities for [function] clearly defined for each involved organisational part? C.3) Are systems for effective collaboration in [function] between the involved organisational parts in place and functioning? C.4) Are there any internal policies for [function] in each involved organisation? C.5) Are these internal policies implemented? C.6) Are interfaces for dissemination, communication, and integration of the output of [function] to parts of the organisation involved in other functions that depend on the output in place and functioning?	D.1) What knowledge and skills on individual level does each involved organisation have for [function]? D.2) What equipment and other material resources does each involved organisation have for [function]? D.3) What funds do each involved organisation has for [function]? D.4) What knowledge, skills and material resources do members of the public have for [function]?

Table 1. Examples of guiding questions for capacity analysis of systems for disaster risk management and climate change adaptation.

This step of the Logical Framework Approach is summarised as the answer to three questions:

1. What function is necessary to perform in order to manage the analysed risks?
2. Why is that function necessary to manage the analysed risks and what other functions are necessary to be able to perform that function?
3. What is available in terms of legal and institutional framework, system of organisations, organisation and resources to facilitate the performance of all identified functions?

The Hazard Identification, Vulnerability and Risk Assessment for the Republic of Botswana (2008) includes a broad range of hazards that necessitates all generic functions. Thus, the functions and relations in figure 3 directly represent the answers to question 1-2 above.

The situation analysis of the scoping study is based on workshops on national level, district level and village level, on meetings with key stakeholders, and on documentation such as laws, policies, plans, risk analysis, etc. The workshops and meetings are focused on getting a rapid general appreciation of the risks that the system for disaster risk management and climate change adaptation in Botswana faces, and on mapping the current capacities of that system for managing these risks. The output of this process is a holistic and systematic overview of challenges to use as a basis for prioritising key challenges to address in partner driven cooperation. The sources for the scoping study is:

- Two meetings and one internal workshop with NDMO
- One village level workshop with the village development committee (VDC) in Ramotswa
- One district level workshop with the District Disaster Management Committee (DDMC) in Maun
- One national workshop with the National Disaster Management Technical Committee (NDMTC)
- One meeting with the Ministry of Local Government
- One meeting with district commissioner (DC) for South Eastern District
- One prioritisation meeting with NDMO
- National Policy on Disaster Management (1996)

- The National Disaster Risk Management Plan (2009)
- The Hazard Identification, Vulnerability and Risk Assessment for the Republic of Botswana (2008)

2.4. Objectives analysis

What is the desired situation? What are the long-term changes needed to reach that situation? What are the direct effects of the project? What are the direct effects of the activities that are implemented within the framework of the project?

The fourth step of the LFA methodology is the objectives analysis, which includes the evaluation of current risks, according to the risk analysis, the evaluation of current capacities to manage risk, according to the capacity analysis, and the formulation of clear project objectives.

The evaluation of risk, in this context, includes a statement of the desired level of risk, or at least of the intention to reduce the current level. Similarly, the evaluation of current capacities to manage risk includes a statement of the desired level of performance, or at least of the intention to increase the level of performance in order to manage the risks at the desired level. The formulation of objectives entails formulating an overall goal, i.e. what the long-term effects of the project are, purpose, i.e. what the direct effects of the project are, and expected results, i.e. what the direct effects of the activities that are implemented within the framework of the project are.

This step of the Logical Framework Approach is summarised as the answer to five questions:

1. What is a desired level of risk?
2. What is a desired level of capacity to manage risk?
3. What is the goal? That is, what are the long-term effects of the project?
4. What are the purposes? That is, what are the direct effects of the project?
5. What are the results? That is, what are the direct effects of the activities that are implemented within the framework of the project?

2.5. Plan of activities

What are the activities needed to generate the results required to reach the purposes and goal of the project?

The fifth step of the LFA methodology is the plan of activities needed to generate the results required to fulfil the purpose and reaching the goal of the project. These activities are in other words no ends in themselves, but the means to reach the desired ends as specified in the objectives analysis. It is important to note that projects for capacity development for disaster risk management and climate change adaptation often need to comprise of a mix of activities that are connected and depend on each other for generating the required results. The plan of activities is thus not only a list of individual activities, but a plan specifying when and in what order the activities need to be implemented.

This step of the Logical Framework Approach is summarised as the answer to three questions:

1. What activities are needed to generate the results required to fulfil the purpose to reach the goal of the project?
2. How are the identified activities dependent on each other?
3. In what internal order are the activities implemented?

2.6. Resource planning

What are the resources needed to implement the project activities?

When having a plan of activities to implement to generate the necessary results to reach the purposes and goal of the project, the next step is resource planning. This is the sixth step of the LFA methodology and entails producing a detailed plan of the resources that need to be allocated and when in order to implement the activities. These resources can include time, funding, venues, equipment, expertise, etc, and can be in cash or in kind. The co-financing between stakeholders can in other words not only involve directly allocated monetary contributions, but also contributions by covering salary costs of own personnel, making own buildings available as venues for activities, etc. It is however central to specify all contributions in the resource plan, as well as which

stakeholders controlling what resources, as vague responsibilities may hamper effective implementation of the project.

This step of the Logical Framework Approach is summarised as the answer to two questions:

1. What resources are necessary for the implementation of the project activities?
2. What resources are controlled by which stakeholder?

2.7. Indicators

How can the success of each activity, result, purpose and goal be verifiably measured?

Effective capacity development projects for disaster risk management and climate change adaptation necessitate, as all development projects, the possibility to measure its success. The way this is done is to identify indicators that are possible to verifiably measure for all levels of objectives in the objectives analysis, as well as for all activities in the plan of activities. There should in other words be at least as many indicators as there are activities, results, purposes and goals in the project, even if it is suggested to attempt to find several indicators to measure each project result and purpose (Örtengren 2003). These indicators can be measuring quantity and/or quality of what the project intends to achieve, and they must be measured in relation to a specific period of time during which the improvements are intended to take place. To be able to determine if improvements have taken place, it is often necessary to have baseline data to compare with.

Having indicators is not only central for making it possible to measure project effectiveness by following up on its intended improvements, but also as establishing indicators necessitates that project results, purposes and goal are specific, measurable, realistic and time-bound.

This step of the Logical Framework Approach is summarised as the answer to two questions:

1. What is the measure of improvement in terms of quantity and/or quality for each project activity, result, purpose and goal?
2. When is the improvement intended to have taken place?

2.8. Project risk analysis and management

What are the potential external and internal factors that may limit the success of the project and how can these be mitigated?

Capacity development projects for disaster risk management and climate change adaptation often span over several years. Regardless of how well planned a project is, there may be various factors that can negatively impact its effectiveness. These factors can be external to the project, e.g. global economic crisis or political changes, and difficult or impossible for the project stakeholders to reduce. They can also be internal to the project, e.g. staff turnover, and possible to reduce through systematic risk management. As the project risk analysis and management is crucial for determining the viability of any project, the LFA methodology includes the systematic analysis and management of project risks as its eighth step.

This step of the Logical Framework Approach is summarised as the answer to four questions:

1. What can happen that can have a negative impact on the project?
2. How likely is that to happen?
3. If it happens, what are the consequences?
4. What can be done to reduce the likelihood of it happening and/or its consequences?

2.9. Analysis of assumptions

What are the factors influencing the fulfilment of each result, purpose or goal, which the project has limited direct control over but are possible to forecast?

Aside of the project risks, there are physical, environmental, political, economical, social and cultural factors that may affect the project but lie outside the influence of the project stakeholders. These factors also need to be analysed, as the viability of the project depends on the feasibility of the assumptions that the stakeholders make concerning the future state of these factors in relation to the project results, purposes and goal. This analysis forms the last step of the LFA methodology and is called analysis of assumptions. Assumptions that may negatively impact the

project if not met can also be considered project risks and dealt with accordingly.

This step of the Logical Framework Approach is summarised as the answer to the question:

1. What are the central assumptions that may influence the project results, purposes and goal?

3. Results and discussion

3.1. Analysis of project context

The general rationale for the partner-driven cooperation between MSB and NDMO is that both organisations benefit from addressing common challenges together. MSB has also a mandate by the Swedish government to support the development of capacities for disaster risk management in developing countries, which provides an additional motivation for engaging in such project with NDMO in Botswana.

Botswana is considered highly vulnerable to potential negative impacts of climate change, which potentially could increase disaster risk substantially. By collaborating in developing the current capacities for disaster risk management and climate change adaptation in such context, MSB would learn valuable lessons in how to address the pressing issues of climate change in relation to risk and sustainable societal development. Issues that are likely to be equally central in Sweden in the future. The partner-driven cooperation would also provide MSB with an opportunity to fulfil its capacity development mandate and to further develop its capacity developing activities. The focus of the partner-driven cooperation is in other words on the development of capacities for disaster risk management and climate change adaptation in Botswana and on bringing valuable lessons home to potentially be implemented in Sweden.

There are a number of contextual factors that may influence the partner-driven cooperation. Some of these are strengths and opportunities to build on, while others are weaknesses to address and threats that to deal with. All these factors must be taken into consideration when designing the partner-driven cooperation in disaster risk management and climate change adaptation between NDMO and MSB. The full results of the SWOT-analysis are presented in the matrix below (Table 2). Five weaknesses are highlighted by the participants of the SWOT-analysis as key challenges (1-5), which are crucial for improving disaster risk management and climate change adaptation in Botswana.

<p>Strengths:</p> <p>Capacity building endeavours exist (tertiary education, stakeholder training workshops)</p> <p>Available resources (minerals, funds, good infrastructure)</p> <p>Development planning process (transparency)</p> <p>Political will (stability in the country, political support, peace, little corruption, prudent government system)</p>	<p>Weaknesses:</p> <p>Lack of resources (i.e. unskilled manpower)</p> <p>Lack of funding (1)</p> <p>Poor implementation</p> <p>Lack of coordination (sector) (2)</p> <p>Lack of DRR mainstreaming and planning (3)</p> <p>Lack of comprehensive DRR strategy and legislation</p> <p>No economic diversification</p> <p>Population suffering from prolonged sickness</p> <p>Lack of participation by local communities (4)</p> <p>Informal settlement</p> <p>Poor communication networks</p> <p>NDMO does not have an office</p> <p>Lack of political will and support (5)</p> <p>Lack of DRR related sensitisation</p>
<p>Opportunities:</p> <p>Geographical location (is not hazard prone)</p> <p>Funding (external funding, aid through multilateral institutions and NGO's and individual donors, relief aid)</p> <p>Knowledge availability (importation of expertise, availability of educational facilities and research resources, advancement in science and technology in the region)</p> <p>Regional cooperation (through SADC, of NDM offices)</p> <p>Political climate (peaceful neighbourhood, regional political stability)</p> <p>Global environment (UN capacity, availability of global DRR framework, international protocol ratification)</p>	<p>Threats:</p> <p>Economic instability (recession)</p> <p>Climate change</p> <p>Resources</p> <p>Regional coordination</p> <p>Regional conflicts</p> <p>Fast world (international timeframes, MDGs, HFA, etc.)</p>

Table 2. The resulting SWOT-matrix

3.2. Stakeholder analysis

The ultimate beneficiaries of the partner-driven cooperation between NDMO and MSB are the people of Botswana and Sweden, as the project intends to develop the capabilities for protecting the people from treats, accidents and disasters. The project is however not intended to directly target the people, but directly involving NDMO, the members of the National Disaster Management Technical Committee (NDMTC), with particular focus on the Ministry of Local Government, and the members of District Disaster Management Committees (DDMCs), and indirectly involving Village Development Committees (VDCs).

The decision-makers for Botswana are NDMO and the National Committee on Disaster Management (NCDM). For Sweden the decision-makers are MSB regarding the project per se, with approval from the Ministry of Defence and Ministry of Foreign Affairs, and Sida regarding the funding. The partner-driven cooperation is implemented by NDMO and MSB, with assistance from whomever the partners see fit, and is funded by NDMO and Sida. The guarantors of success are in other words NDMO and MSB, and it is NDMO who is responsible of considering the interests of the ones affected by but not involved in the project.

The partner-driven cooperation acknowledge the need to not only incorporate the knowledge of formal experts into the scoping study and project, but the knowledge of representatives of all stakeholders from sectorial experts from line ministries to local chiefs and elected members of a Village Development Committee. The stakeholders included in the scoping study is thus:

- NDMO
- MSB
- Ministry of Local Government, Gaborone
- Ministry of Finance and Development Planning, Gaborone
- Occupational Health and Safety (MLHA), Gaborone
- Department of Geological Survey, Gaborone

- Department of Meteorological Services, Gaborone
- Department of Wild Life and Natural Parks, Gaborone
- Department of Procurement Office, Gaborone
- Department of Mines, Gaborone
- Department of Water Affairs, Gaborone
- Ministry of Health, Gaborone
- Department of Forestry and Range Resources, Gaborone
- Department of Radiation Protection Inspectorate, Gaborone
- Botswana Defence Force, Gaborone
- District Commission South Eastern District
- Village Development Committee Ramotswa
- The Deputy Paramount Chief of South Eastern District
- District Commissioner Ngamiland District
- District Council Ngamiland District
- Department of Social Services, Maun
- Central Transport Organisation, Maun
- Ministry of Finance and Development Planning, Maun
- Botswana Police Service, Maun
- Department of Veterinary Services, Maun
- Civil Aviation Authority, Maun
- Botswana Defence Force, Maun
- Department of Forestry and Range Resources, Maun
- Botswana Prison Services, Maun
- Department of Cooperatives Development, Maun
- Department of Water Affairs, Maun
- Sub Landboard, Maun
- Department of Wild Life and Natural Parks, Maun
- Department of Agricultural Research, Maun
- Department of Buildings and Engineering Services, Maun
- Department of Road Transport and Safety, Maun

3.3. Situation analysis

Botswana is not particularly prone to large-scale disasters, relatively speaking in comparison to other countries in Southern Africa, but has a wide range of hazards that continuously threaten and impact human lives, property, livelihoods and the environment. These hazards include drought, floods, veldt fire, human epidemics, transportation accidents, urban fire, animal epidemics, pest infestation, storm, extreme temperatures, civil unrest, infrastructure failure, pollution, environmental degradation, etc. These hazards have the potential to impact vulnerable individuals, communities, buildings, infrastructures etc, and are constant sources of erosion of Botswana's development gains. Here follows the results from the analysis of the current capacities in Botswana for managing these risks, by applying the methodology described earlier in section 2.3.2. *Situation analysis*.

3.3.1. Risk Assessment

Legal and institutional framework

The overall legislation and policy for Disaster Risk Management is not including Risk Assessment. In the National Disaster Risk Management Plan (2009) it is however clear that the NDMO includes Risk Assessment as a vital function for disaster risk management in Botswana. The plan addresses Risk Assessment and allocates responsibilities for this function. It is however unclear to which degree this has been implemented.

There are examples of sectorial legislation that require Risk Assessment, e.g. regarding radioactive material, while other sectorial legislation implies, or can be interpreted as requiring Risk Assessment, e.g. for occupational health and safety.

There is a great need for raising awareness concerning the importance and utility of Risk Assessment for development planning, prevention/mitigation and preparedness purposes within the political leadership and the sectorial ministries and authorities.

System of organisations

There are no comprehensive and continuous Risk Assessments done in Botswana, although NDMO contracted a consultant who compiled “The Hazard Identification, Vulnerability and Risk Assessment for the Republic of Botswana” (2008). For sector authorities involved in Risk Assessment, the assessment are most often performed within the specific sector and not shared with other sectors.

Many sectors do already collect data concerning the hazards for which they are responsible, as well as other relevant data, such as demographic data etc. This data is however not compiled and used in any systematic manner on the overall national or district level.

Organisation

On local and district level there is no explicit organisation for doing Risk Assessment. Although it is indicated that the national authorities involved in their sectorial Risk Assessment have some organisation for this task, there is no organisation for systematic and comprehensive risk assessment that can be used for development planning, prevention/mitigation and preparedness purposes.

It is indicated that NDMO is about to be organised in an “Operations Section” and a “Programme Section”, which could facilitate an increased focus on disaster risk reduction as there would be resources allocated for longer term projects that potentially would not be consumed by the immediate and reactive operations. There is also at NDMO an emerging function for GIS and information management, which would be well suited as a foundation for comprehensive trans-sectorial Risk Assessments.

Resources

There are not resources for systematic Risk Assessment on village level in terms of funding, equipment or human resources. On district level, there are some material resources, very limited personnel resources and almost no methodological resources for Risk Assessment. However, on both local and district level, there is much knowledge about both

hazards and vulnerabilities in the communities. This knowledge is currently not compiled and utilised in any systematic manner.

At NDMO, on national level, the knowledge concerning Risk Assessment is limited and concentrated to a few very knowledgeable individuals. NDMO is thus very vulnerable for staff turnover. The national level also lacks the methods and tools for systematic and comprehensive trans-sectorial Risk Assessment, even if the equipment for the emerging function for GIS and information management would be a suitable foundation for such. In short, NDMO has currently not sufficient capacity for meeting the needs for comprehensive Risk Assessment in Botswana.

There is also a need for raising awareness concerning the importance and utility of RA within the political leadership and the sectorial ministries and authorities.

3.3.2. Forecasting

Legal and institutional framework

The overall legislation and policy for disaster risk management is not including Forecasting. There may be requirements for Forecasting in sectorial legislation.

System of organisations

The department of meteorological services provides weather forecasts, but there are no clear criteria for when a warning message should be transferred to NDMO and other stakeholders. At present the warnings are generally confined to amount of rain fall, and does not for instance encompass wind speed, hail storms, thunderstorms etc. The Ministry of Health has a relatively effective forecasting system for human epidemics based on their Health Surveillance System in the country. The output of it is however mostly used within the ministry. There is also a forecasting system for drought, where several organisations collaborate, and activities to establish a forecasting system for veld fires are currently being undertaken by Department of Forestry and Range Resources.

Organisation

At present, the scoping study lacks data on how the organisations involved in Forecasting organise this task internally. Such details are however deemed unnecessary for the more general focus on disaster risk management of the scoping study.

Resources

NDMO indicates that the MET-office lack the capacity to forecast extreme weather, thus the focus on amount of rain fall. The Ministry of Health, on the other hand, appears to be well equipped with both material and human resources for their forecasting of human epidemics, while the Department of Forestry and Range Resources are in the process of developing their resources for forecasting veld fires.

3.3.3. Monitoring

Legal and institutional framework

The overall legislation and policy for disaster risk management is not including Monitoring, while it is presently unclear in the scoping study what requirements exist in sectorial legislation.

System of organisations

The Department of Water Affairs monitors the water level in dams and major rivers. However, at present, there is not a systematic approach in place for disseminating this information to NDMO to be used for disaster risk management purposes, e.g. as input to warnings etc. The Department of Water Affairs also monitors invasive species in the Okavango River and Delta.

The Ministry of Agriculture is monitoring drought and there appears to be a system in place for disseminating information to other relevant stakeholders, e.g. the Ministry of Finance and Development Planning. The Ministry of Agriculture is also monitoring animal diseases.

The primary function of the Health Surveillance System of the Ministry of Health is to monitor human epidemics, but as for Forecasting, the output is mainly used internally within the ministry.

The Department of Forestry and Range Resources are using satellite remote sensing for monitoring veld fires, although limited to only veld fires over a certain size and under clear weather conditions. It is unclear how the output of this monitoring is used both internally and what other stakeholders the information is disseminated to.

Organisation

At present the scoping study lacks data on how the organisations involved in Monitoring organise this task internally. Such details are however deemed unnecessary for the purposes of the scoping study.

Resources

It appears in the scoping study that the Ministry of Agriculture, the Ministry of Health and the Department of Forestry and Range Resources are well equipped both in terms of material and human resources to perform this task. The Department of Water Affairs seems to be well equipped to monitor water levels, but the vital system for systematic information dissemination appears to be almost non-existing.

3.3.4. Impact Assessment

Legal and institutional framework

The overall legislation and policy for disaster risk management is not including Impact Assessment. The National Disaster Management Plan (2009) addresses however Impact Assessment and allocates responsibilities for this function, mainly to the Ministry of Local Government. It is however apparent that the National Disaster Risk Management Plan is not entirely implemented. It is presently unclear in the scoping study what requirements exist in sectorial legislation.

System of organisations

There is a system for multi-sectorial Impact Assessment, which is to be performed at district level and submitted to NDMO. NDMTC can also deploy rapid assessment teams in some cases. Some sector authorities also perform assessments within their own sector, but these are however not presently shared over sectorial boundaries. There is however neither an effective system for communicating the output from the Impact

Assessments to be aggregated on district and national level, nor for disseminating the aggregated picture to necessary stakeholders.

Organisation

In case of an assessment team is being sent out by the NDMTC, the organisation of that team and its assessment tasks are ad hoc solutions where the NDMTC decides on assessment questions on a case-by-case basis. On district level, the assessment teams are also, somewhat organised in an ad hoc manner, even if the assessments generally are performed by social workers in the districts. Regarding sectorial Impact Assessments, the scoping study lacks data on how the involved stakeholders organise this task internally, which are deemed unnecessary for the purposes of the scoping study.

Resources

There are hard copy templates for Impact Assessment developed by NDMO that are to be used for the multi-sectorial district level assessments. However, the system is not fully implemented and the individuals involved are not sufficiently trained for the task. This is particularly evident on local and district levels.

3.3.5. Prevention/Mitigation

Legal and institutional framework

The National Policy on Disaster Management (1996) indicates that activities to prevent and mitigate disaster risk are necessary. It is however somewhat focused on response and response preparedness and not so much on these other aspects of disaster risk reduction. The National Disaster Risk Management Plan (2009), on the other hand, addresses Prevention/Mitigation and allocates responsibilities for this function. Both to various line ministries for certain risks and to NDMO as a coordinating authority. It is however unclear to which degree the plan has been implemented. In some sectorial legislation there are requirements to work proactively with Prevention/Mitigation efforts, e.g. Health.

System of organisations

Regarding droughts, there seems to be a system in place for mitigating, where several actors are involved, e.g. Ministry of Agriculture, Ministry of Finance and Development Planning etc. Ministry of Health and Ministry of Agriculture have also systems in place for proactively preventing and mitigating human and animal diseases, e.g. the system for combating HIV/aids.

In addition, many actors perform tasks in their daily work that lead to reduced risk, e.g. maintenance of storm water drainage etc. However, such initiatives seem fragmented and not based on systematic and comprehensive assessment of the risks.

Organisation

At present the scoping study lacks data on how the organisations involved in Prevention/Mitigation organise this task internally. Such details are however deemed unnecessary for the overall purposes of the scoping study.

Resources

Some organisations seem to have a lot of resources for preventing and mitigating certain risks, e.g. HIV/AIDS, foot and mouth disease etc. However, organisations dealing with other risks seem to suffer lack of both human and material resources for Prevention/Mitigating. There also seems to be a lack of understanding among all stakeholders of the crucial relationship between Risk Assessment and Prevention/Mitigation. Although there is an emergency fund established, this is only available for response and to some extent recovery activities, making prevention/mitigation an underfunded function.

3.3.6. Preparedness

Legal and institutional framework

The National Policy on Disaster Management (1996) indicates that preparedness is a key function in the system for disaster risk management in Botswana. It is however only focused on preparedness for response and not at all on preparedness for recovery, which also is a

vital part of effective disaster risk management. The National Disaster Risk Management Plan (2009) continues in this track with detailed sections relevant for response preparedness, but explicitly addressing preparedness for recovery to similar extent. The National Disaster Risk Management Plan (2009) allocates responsibilities for response preparedness, both to various line ministries for certain risks and to NDMO as a coordinating authority. It is however unclear to which degree this has been implemented. It is not clear for the scoping study what requirements exist in sectorial legislation.

System of organisations

There is no coordinated preparedness planning procedure in place and no ongoing preparedness activities and based on any systematic and comprehensive risk assessment.

Regarding response preparedness, Primary and Support Agencies are identified in the National Disaster Risk Management Plan (2009) for a number of Emergency Support Functions. This description is confined to what ESF that different actors can be involved in. The division of responsibilities in terms of activities (who should do what, when and how) is not stipulated, which is at the heart of preparedness planning. In addition, having more than one Primary Agency per emergency support function, may give rise to confusion hence impeding coordination.

A number of agencies have developed response plans. However, these seem to be confined to the agency's own activities, which are not related to the activities of other actors. The lack of an all-encompassing plan entails a risk of overlaps and gaps, which may lead to waste of resources and/or that vital needs are not addressed. There is no preparedness planning for recovery after disasters.

Organisation

At present the scoping study lacks data on how the organisations involved in activities relevant for Preparedness organise this task internally. Such details are however deemed unnecessary for the purposes of the scoping study.

Resources

There is a lack of tools and processes for systematic and comprehensive preparedness planning. Furthermore, there is a general lack of knowledge and skills regarding the crucial connection between Risk Assessment and Preparedness, as well as regarding various preparedness activities. There is a need of a systematic strategy for education, training and exercises on various administrative levels as well as for the general public.

In terms of material resources, there are prepositioned stocks of relief items to deal with some disaster induced needs but these are in general deemed to be insufficient and distributed in an arbitrary manner. Even though there is an emergency fund established, this is only available for response and recovery activities, making preparedness an underfunded function.

3.3.7. Response

Legal and institutional framework

The Emergency Powers Act empowers the President of Botswana to declare state-of-emergency and to make emergency regulations in case of disaster. It is however not particularly focused on disasters risk management. The National Policy on Disaster Management (1996) provides for the activation of response activities in case of disaster. The National Disaster Risk Management Plan (2009) follows up on this and allocates responsibilities for response, see comments under “Preparedness”. It is however unclear to which degree this has been implemented. It is unclear if other requirements on disaster response exist in sectorial legislation.

System of organisations

The response structure in Botswana, as described in the National Disaster Risk Management Plan (2009), has developed organically over several decades based on informal agreements and customary expectations. The actors involved describe this system as functioning but as an external actor the division of responsibilities appears to be unclear.

In the past, it has been unclear who has the coordinating responsibility during a disaster. However, a new incident command system is currently being developed.

Organisation

The organisations involved are deemed to be organised to perform their respective response activities.

Resources

The general principle is that individuals maintain their normal responsibilities also during disaster situations. Botswana Defence Force, Botswana Police Services, Botswana Red Cross and other organisations generally manage particular disaster needs, not already being addressed by such normal activities. Although these organisations fulfil an important task, not all individuals are educated and trained for their tasks.

There is a tradition in Botswana with volunteer work and several sectors are utilising volunteers in their work, e.g. fighting veld fires. However, these volunteers are unregistered, untrained and uninsured and only used on an ad hoc basis. Only the Red Cross Society has a more organised volunteer system.

Reusable items such as vehicles and communication equipment have been expressed as sufficient in the dealing with past emergencies. Regarding relief items, these are in general expressed as insufficient and arbitrarily distributed.

There is an Emergency Fund established for response and recovery activities. However, if that fund is emptied, additional funds can be applied for with the Cabinet.

3.3.8. Recovery

Legal and institutional framework

The National Policy on Disaster Management (1996) provides for the activation of recovery activities after a disaster. The National Disaster Risk Management Plan (2009) follows up on this and introduces a

process for how rehabilitation and reconstruction are to be organised and funded. It is however unclear to which degree this has been implemented. It is fair to claim that Recovery is not focused on to the same degree as Response as only around one page in the National Disaster Risk Management Plan (2009) is dedicated on Rehabilitation and Reconstruction. It is unclear if other requirements on recovery exist in sectorial legislation.

System of organisations

The organisation responsible for a utility in the normal case will be responsible for reconstructing activities concerning that utility in case of disaster. However, there is no coordinating system for recovery activities in place. NDMO, in cooperation with other relevant stakeholders, have identified this as a problem and are allocating responsibilities for developing a rehabilitation and reconstruction plan in the National Disaster Risk Management Plan (2009). This rehabilitation and reconstruction plan is to be disseminated to the National Committee on Disaster Management that in turn makes an evaluation and suggest recommendations to the Cabinet. It is unclear to which degree the system of comprehensive rehabilitation and reconstruction plans has been implemented.

Organisation

The organisations involved are organised to perform their recovery activities.

Resources

There is an Emergency Fund established for response and recovery. This fund is however in general deemed not sufficient to cover recovery activities after major disasters.

3.3.9. Evaluation

Legal and institutional framework

The overall legislation and policy relevant for disaster risk management is not including Evaluation. The National Disaster Risk Management Plan (2009) mentions Evaluation activities related to response. It

appears however that this is not implemented, and it is presently unclear if there are requirements on Evaluation in sectorial legislation.

System of organisations

Regarding response, The National Disaster Risk Management Plan (2009) stipulates that a debriefing session should be conducted at the end of a disaster operation, detailing problems encountered, lessons learned and recommendation for future improvements. It is however unclear who is responsible for this activity, who should participate and how it should be done. It is also unclear how this debriefing session would facilitate actual improvement. For all other functions that should be evaluated for continuous learning and improvement, e.g. prevention/mitigation and preparedness, such activities are not mentioned by any stakeholder.

Organisation

As it is unclear if there are any organisations involved in systematic Evaluation of Disaster Risk Management activities, the scoping study has no information how organisations involved in Evaluation organise this task internally.

Resources

Evaluation seems to be a low priority function. There are no allocated funds for it, there are no processes, methods and tools available for it, and no individuals with specific training and education regarding it. There is no system on local, district or national level for keeping records on earlier events, which would be of vital importance for other functions, such as Risk Assessment.

4. Conclusions

When analysing the capacities for disaster risk management and climate change adaptation in Botswana, it becomes clear that the system in the country has both strengths and challenges. In order to build on the strengths when addressing the challenges it is important to make sure that what is done can generate an increase in capacities on their own and not being dependent on addressing other challenges that are not equally developed. It is also important to include activities on all levels, from addressing legal and institutional frameworks to educating individuals in how to perform some important task.

The most central challenge in relation to capacities for disaster risk management and climate change adaptation in Botswana is the absence of systematic and comprehensive Risk Assessment as input to Development Planning, Prevention/Mitigation and Preparedness activities. There is thus a need for developing and implementing a system with processes, methods and tools for Risk Assessment on all administrative levels in Botswana. This entails having a clear legal and institutional framework for Risk Assessment, which is why the absence of dedicated legislation for disaster risk management has a large role to play in this challenge. It also entails developing a system for how various stakeholders in Botswana need to collaborate for effective Risk Assessment, as well as how the more central of these stakeholders organise themselves internally to be able to contribute. Finally, it would entail training and education for involved individuals and the development and implementation of a professional information management system for collecting, aggregating, analysing and disseminating information relevant for Risk Assessment. It is in other words not only the system for Risk Assessment per se that needs to be developed, but the links through which the results of such system would be used as input to Development Planning, Prevention/Mitigation and Preparedness (Figure 4).

The next central challenge for the system for disaster risk management and climate change adaptation in Botswana is the lack of systematic and comprehensive preparedness planning. It is a strength that each sector is,

or at least should be, working on contingency planning on their own and in relation to a specific hazard. But without an all-encompassing approach to preparedness planning it is almost certain that the current practices lead to waste of resources and/or that vital needs are not addressed. Such all-encompassing preparedness planning must be based on the output of Risk Assessment (Figure 4). It must also include preparedness planning for recovery after disasters, as there is a lot of money to be saved from addressing recovery in an equally professional manner as response (Figure 4). Once again, capacity development activities must span from advocacy to urge government and parliament to develop the legal and institutional framework, to education and training of individuals involved in the actual Preparedness Planning.

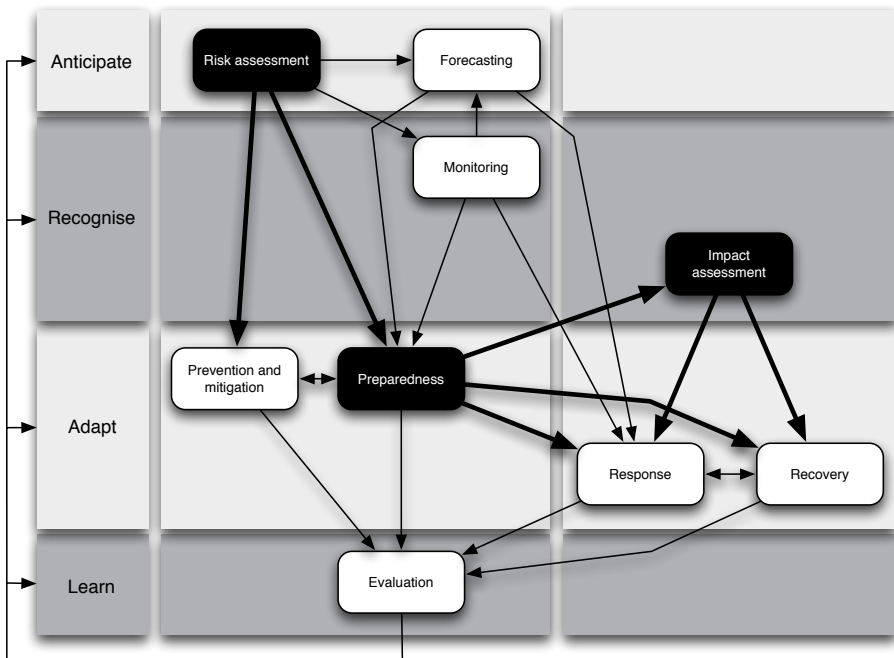


Figure 4. The most critical functions and relations of the system for disaster risk management and climate change adaptation to focus on.

Finally, the current lack of capacities for Impact Assessment is a major challenge for effective disaster risk management in Botswana. With

modern tools and systematic methods and processes in place, the basis for making decisions concerning response and recovery activities can be made more correct, timely and complete (Figure 4). This would ideally be built on the same professional information management system as for Risk Assessment.

The next step of the LFA methodology is to formulate what goal, purposes and results that the project must generate to change the current situation to the desired situation of the system for disaster risk management and climate change adaptation in Botswana. The process of the LFA methodology is however not as linear as portrayed in this scoping study. NDMO and MSB have already had detailed discussion of potential activities of their partner-driven cooperation to deal with the above-mentioned challenges, e.g. systematic advocacy and sensitisation of policy-makers, workshops and seminars for developing the collaboration between stakeholders, tailored training courses for a wide variety of stakeholders, training-of-trainers courses and programmes for cascading training down the administrative levels, the development and implementation of a professional information management system for Risk Assessment, Preparedness Planning and Impact Assessment, secondment of MSB expert to NDMO, an internship programme for master's students in disaster risk management etc. Ideas that will be brought from this scoping study for the continuation of the project design process.

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