Mainstreaming Disaster Risk Reduction - Assessing barriers and opportunities to integrate risk information into communal development planning in Burundi

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Abstract

Natural hazards cannot be avoided, but their damage to what human beings value, such as life, health, and property, can be limited. Climate change will increase extreme weather events and overall disaster risk, which will particularly affect Least Developed Countries. Mainstreaming Disaster Risk Reduction (DRR) into development planning, the systematic integration of information stemming from risk assessments into all sectors is a recognised means to protect a country's development gains. But despite acknowledgement and recognition through international agreements, efforts to integrate this information remain limited due to barriers of various types.

The present study investigates the barriers and opportunities to mainstream DRR into communal development plans in Burundi focusing on the agricultural and educational sectors. Burundi, a country in East Africa, is frequently affected by different disasters that undermine the country's ability to sustainably develop its economy and society. This qualitative study used mixed methods but was primarily based on 36 semi-structured interviews. The findings showed that most barriers and opportunities for risk-informed planning are tied to institutional arrangements. These can be clustered in legislation, finance, information, technology, knowledge and expertise as well as socio-political conditions and dynamics that shape disaster risks. The study concludes that to understand barriers to integration, it is essential to consider them as interlinked across different sectors, governance levels and planning phases which are influenced by underlying power dynamics between stakeholders involved. A holistic approach is recommended to address the complex system of institutional barriers and yield opportunities to protect the development process.

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Abstract (en Français)

Les aléas naturels ne peuvent pas être évités, mais il est possible de limiter les dommages qu'ils causent à ce qui est valorisé, comme la vie humaine, la santé et les biens. Le changement climatique augmentera les évènements météorologiques extrêmes et le risque global de catastrophe, ce qui affectera particulièrement les pays les moins développés. La prise en compte de la Réduction des Risques de Catastrophe (RRC) dans les plans du développement, c'est-à-dire l'intégration systématique des informations issues des évaluations des risques dans tous les secteurs, est un moyen reconnu de protéger les acquis du développement d'un pays. Mais malgré la reconnaissance et la prise en compte par les accords internationaux, les efforts d'intégration restent limités en raison de barrières multiples.

Cette étude cherche à identifier les obstacles et les possibilités d'intégrer la RRC dans les plans communaux de développement communautaires au Burundi, en se concentrant sur les secteurs de l'agriculture et de l'éducation. Le Burundi, en Afrique de l'Est, est fréquemment touché par différentes catastrophes qui minent la capacité du pays à développer de façon durable son économie et sa société. L'étude qualitative a utilisé des méthodes mixtes mais s'est principalement basée sur 36 entretiens semi-directifs. Les résultats ont montré que la plupart des obstacles et des opportunités pour une planification tenant compte des risques sont liées aux dispositions institutionnelles, qui peuvent être regroupées dans les domaines de la législation, des finances, de l'information, de la technologie, des connaissances et de l'expertise, ainsi que des contextes et dynamiques sociopolitiques qui façonnent les risques de catastrophe. L'étude conclut que pour comprendre les obstacles à l'intégration, il est essentiel de les considérer comme étant liés entre différents secteurs, des niveaux de gouvernance et des phases de planification, et influencés par les dynamiques de pouvoir sous-jacentes entre les parties prenantes impliquées. Une approche holistique est recommandée pour aborder le système complexe des barrières institutionnelles et générer des opportunités pour protéger le processus de développement.

Mots-clés : *ACC ; Adaptation au Changement Climatique ; Afrique Centrale ; Afrique de l'Est ; Aménagement du Territoire ; Atténuation ; Barrières Institutionnelles ; Bujumbura ; Burundi ; Cadre de Sendai ; Développement Durable ; Intégration ; Lac Tanganyika ; Planification du Développement ; Préparation ; Prévention ; Réduction des Risques de Catastrophes ; Région des Grands Lacs ; Résilience ; RRC*

Summary

Natural hazards and increasing frequency of extreme weather events are particularly threatening the economies and populations of Least Developed Countries (LDCs). While the occurrence of natural hazards can rarely be avoided, better planning, including proactive measures of disaster prevention, preparedness for response and mitigation, can considerably reduce the damaging effect of disasters. As suggested by the Sendai Framework for Disaster Risk Reduction 2015-2030, national and local development plans, which lay out the strategy for sectorial development for a certain number of years, are an important instrument to institutionalise these proactive measures. Systematic integration of Disaster Risk Reduction (DRR) measures into different sectors, also known as DRR mainstreaming, contributes to a resilient society that anticipates, recognises, and addresses threats to its development gains to limit losses. Risk information gained through risk assessments needs to be available to inform this process.

This research investigates the barriers and opportunities to mainstreaming DRR into communal development planning in Burundi, focusing on the sectors of agriculture and education. Burundi is a small, landlocked country in the African Great Lakes region. It is a densely populated, predominantly rural country and affected by a multitude of climatological hazards. Categorised as a LDC, it relies on the agricultural sector including a large percentage of subsistence farming, which is especially exposed to disasters. To answer the research question, a qualitative approach was used with mixed methods consisting of 36 semi-structured key informant interviews, document analysis, participatory observation and a literature review. The different sources were triangulated to achieve more reliable results.

Recent literature emphasizes the need to shift the focus in Disaster Risk Management from disaster response to more proactive approaches to address causes of vulnerability instead of merely treating the symptoms, which perpetuate a vicious cycle of repeating disasters. Even though this has long been recognised, DRR mainstreaming into development plans has still not sufficiently advanced in many countries. Multiple barriers hamper the process such as a lack of coordination, lack of funding and insufficient information management. Moreover, fragmented institutional arrangements and working silos between the fields of DRR, climate change adaptation and development inhibit international and national planning processes and create funding difficulties. Furthermore, the basis for any risk-informed planning is available risk information, which is frequently impaired by difficulties in data collection, access, and exchange. Lacking risk awareness of decision makers on all levels impacts the recognition of the importance of information management as an investment priority for DRR. In turn, opportunities to better mainstream DRR into development planning primarily concern better collaboration between actors, as well as contextualisation of projects and strengthening ownership of national stakeholders during project implementation, which is often supported by external technical and financial partners.

The findings of the study were mostly consistent with the identified barriers to DRR mainstreaming in literature, albeit adding some new perspectives. The barriers and opportunities can be clustered into categories of legislation, finance, information, technology, knowledge and expertise, as well as underlying conditions and dynamics which increase disaster vulnerabilities. These categories are discussed under the main themes of institutional barriers, a disconnect between different administrative levels, and the influence of underlying power dynamics. When analysing the different themes, it was found that these barriers are closely interlinked and influence each other in a complex way. Some of these institutional barriers have fairly immediate effects, such as lacking risk information or mitigation measures whereas others are more subtle and difficult to grasp. These underlying circumstances and

dynamics such as unmet basic needs, lack of risk awareness, aid dependency, and unequal power distribution intrinsically erode Burundi's capacity to mainstream DRR. Nevertheless, many opportunities to improve mainstreaming or use of existing capacities could be uncovered by the study. However, these capacities are scattered between different sectors, actors and governance levels and are not always seen to be connected to DRR. This poses a major barrier and would need to be resolved by connecting the pieces.

The study provides a comprehensive overview of the institutional barriers and opportunities that can be found when mainstreaming DRR into communal development planning. This could enrich research conducted in different countries that share similar traits as Burundi. The research may serve as a basis for any further projects that seek to strengthen DRR integration into local long-term strategic planning as highlighted by the Sendai Framework. The results indicate what may need to be considered by local authorities to achieve a sustainable and independent system to reduce the risk of recurring disasters.

Résumé (en Français)

Les aléas naturels, associés à la fréquence croissante des phénomènes météorologiques extrêmes, menacent particulièrement les économies des pays les moins développés et leurs populations. Bien que les aléas naturels puissent rarement être évités, une meilleure planification comprenant des mesures proactives de prévention des catastrophes, de préparation à la réponse et d'atténuation peuvent considérablement réduire les effets néfastes des catastrophes. Comme le suggère le Cadre de Sendai 2015-2030 pour la Réduction des Risques de Catastrophes (RRC), les plans de développement nationaux et locaux, qui définissent la stratégie de développement sectoriel pour un certain nombre d'années, sont un instrument important pour institutionnaliser ces mesures proactives. La prise en compte de la RRC dans la planification du développement, c'est-à-dire l'intégration systématique des informations issues des évaluations des risques dans tous les secteurs, est reconnue pour contribuer à une société résiliente qui anticipe, reconnait et traite les risques qui pèsent sur ses acquis de développement afin de limiter les pertes. Comme condition préalable, les informations obtenues par l'évaluation des risques doivent être disponibles et alimenter ce processus.

L'étude suivante interroge les obstacles et les possibilités d'intégration de la RRC dans la planification du développement communal au Burundi. L'étude se concentre sur les secteurs de l'agriculture et de l'éducation. Le Burundi est un petit pays enclavé dans la région des Grands Lacs africains. Il est densément peuplé et affecté par une multitude de risques climatologiques. Faisant partie des pays les moins avancés, le Burundi dépend du secteur agricole, dont un grand pourcentage d'agriculture de subsistance, davantage exposé aux aléas naturels. Afin de répondre à la question de recherche, une approche qualitative avec des méthodes mixtes s'appuyant sur en 36 entretiens semi-directifs avec des informateurs clés, une analyse de documents, des observations participatives et une revue de littérature a été choisie pour obtenir des résultats fiables grâce à la triangulation de différentes sources.

La littérature récente souligne la nécessité de réorienter la gestion des risques de catastrophes de la réponse aux catastrophes vers des approches plus proactives pour s'attaquer aux causes de la vulnérabilité au lieu de se contenter de traiter les symptômes, qui perpétuent un cercle vicieux de catastrophes répétées. Bien que cela soit reconnu depuis longtemps, l'intégration de la RRC dans les plans de développement n'est pas encore suffisamment avancée dans de nombreux pays. Des obstacles multiples ont été indiqués comme freinant le processus, tels que le manque de coordination, le manque de financement et la gestion insuffisante de l'information. En outre, les arrangements institutionnels fragmentés et les silos de travail entre les domaines de la RRC, de l'adaptation au changement climatique et du développement entravent les processus de planification internationaux et nationaux et créent des difficultés de financement. La base de toute planification fondée sur les risques est l'information disponible sur les risques, qui est souvent affaiblie par les difficultés de collecte, d'accès et d'échange de données. Le manque de sensibilisation aux risques des décideurs à tous les niveaux a un impact sur la reconnaissance de l'importance de la gestion de l'information en tant que priorité d'investissement pour la RRC. Également, les possibilités de mieux intégrer la RRC dans la planification du développement dépendent principalement du renforcement des collaborations entre les acteurs, ainsi que la contextualisation des projets et le renforcement de l'appropriation des acteurs nationaux pendant la mise en œuvre de projets, souvent soutenus par des partenaires techniques et financiers externes.

Les résultats de l'étude sont pour la plupart cohérents avec les obstacles à l'intégration de la RRC identifiés dans la littérature, en ajoutant quelques nouvelles perspectives. Ces obstacles peuvent être regroupés dans les catégories suivantes : législation, finances, information, technologie, connaissances et expertise, ainsi que conditions et dynamiques sous-jacentes augmentant la vulnérabilité aux

catastrophes. Ces catégories sont examinées sous les thèmes principaux des barrières institutionnelles, de la déconnexion entre les différents niveaux administratifs et de l'influence des dynamiques de pouvoir sous-jacentes. L'analyse des différents thèmes a montré que ces obstacles sont étroitement liés et s'influencent mutuellement de manière complexe. Certains de ces obstacles institutionnels ont des effets assez immédiats, comme le manque d'informations sur les risques ou de mesures d'atténuation, tandis que d'autres sont plus subtils et difficiles à appréhender. Ces circonstances et dynamiques sous-jacentes, telles que les besoins de base non satisfaits, le manque de sensibilisation aux risques, la dépendance à l'aide au développement et la répartition inégale du pouvoir, érodent intrinsèquement la capacité du Burundi à intégrer la RRC dans la planification. Néanmoins, de nombreuses opportunités pour améliorer l'intégration ou utiliser les capacités existantes pouvaient être démontrées par l'étude. Cependant, ces capacités sont dispersées entre différents secteurs, acteurs et niveaux de gouvernance et ne sont pas toujours perçues comme étant liées à la RRC. Cela constitue un obstacle majeur en soi et devrait être résolu en reliant les pièces.

L'étude visait à fournir une vue d'ensemble des obstacles institutionnels et des opportunités que l'on peut trouver lors de l'intégration de la RRC dans la planification du développement communal. Cela pourrait enrichir les recherches menées dans d'autres pays les moins avancés qui partagent des caractéristiques similaires. La recherche sert à tout autre projet qui cherche à renforcer l'intégration de la RRC dans la planification stratégique locale à long terme, comme le souligne le Cadre de Sendai. Elle indique ce qui devrait être pris en compte par les autorités locales pour parvenir à un système pérenne et indépendant de RRC.

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Abbreviations

BJM	Bujumbura
BMCD	Burundian Ministry for Communal Development *French: Ministère du Développement Communal*
BMEAL	Burundian Ministry for Environment, Agriculture and Livestock *French: Ministère de l'Environnement, de l'Agriculture et de l'Élevage*
BMIPTLD	Burundian Ministry of the Interior, Patriotic Training and Local Development *French: Ministère de l'Intérieur, de la Formation Patriotique et du Développement Local*
BMPSDM	Burundian Ministry of Public Security and Disaster Management *French: Ministère de la Sécurité publique et de la Gestion des Catastrophes du Burundi*
BRC	Burundian Red Cross *French: Croix-Rouge du Burundi*
CCA	Climate Change Adaptation
CIA	Central Intelligence Agency
CNDD-FDD	National Council for the Defence of the Democracy – Forces for the Defence of Democracy *French: Conseil National pour la Défense de la Démocratie-Forces de Défense de la Démocratie*
CP	Communal Platform for Disaster Risk Reduction
CTAS	Communal Technical Advisor for Social Affairs *French: Conseiller Technique des Affaires Sociales*
CTD	Communal Technical Advisor for Development *French: Conseiller Technique du Développement*
DRC	Democratic Republic of the Congo
DRR	Disaster Risk Reduction *French: RRC - Réduction des Risques de Catastrophes*
DTM	Displacement Tracking Matrix
EAC	East African Community
ECHO	Directorate-General for European Civil Protection and Humanitarian Aid Operations
ENSO	El Niño South Oscillation

ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
EU	European Union
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GIZ	German Corporation for International Cooperation *German: Gesellschaft für Internationale Zusammenarbeit*
HFA	Hyogo Framework for Action 2005-2015
HLP	High-Level Panel on Humanitarian Financing
IFRC	International Federation of Red Cross and Red Crescent Societies
IGEBU	Geographical Institute of Burundi *French: Institute Géographique du Burundi*
IOM	International Organization for Migration (UN Migration)
LDC	Least Developed Country
NAS	National Agricultural Strategy *French: Stratégie Agricole Nationale*
NDP	National Development Plan *French: Plan National du Développement*
NGO	Non-Governmental Organisation
NP	National Platform for Disaster Risk Reduction *French: Plateforme Nationale de Prévention des Risques et de Gestion des Risques de Catastrophe*
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OEIWG	Open-ended Intergovernmental Expert Working Group on Indicators and Terminology relating to Disaster Risk Reduction
PCDC	Communal Development Plan *French: Plan Communal du Développement Communautaire*
PP	Provincial Platform for Disaster Risk Reduction
PPP	Public-Private Partnership
SDC	Swiss Agency for Development and Cooperation
SRA	Social Research Association
SWOT	Strengths, Weaknesses, Opportunities, Threats
TFP	Technical-Financial Partner *French: PTF – Partenaire Technique et Financier*

TNH	The New Humanitarian
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme *French: PNUD - Programme des Nations Unies pour le Développement*
UNDRR	United Nations Office for Disaster Risk Reduction, formerly UNISDR
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Risk Reduction, now UNDRR
USA	United States of America
USD	United States Dollar

1 Introduction

Most natural hazards are unavoidable, but their harm to life, health, and property, can be limited (TNH, 2014; Vastveit, Eriksson, & Njå, 2014, p. 445). With climate change weather extremes will become more frequent (UNDRR, 2019, p. iii). Low-income countries are struggling to sustainably develop their economies and society, and continuously safeguard their present and future living conditions (UNDRR, 2019, p. iii) as progress is regularly obliterated by disasters, leaving the population dependent on regular humanitarian assistance (Aslam Saja, Lafir Sahid, & Sutharshanan, 2021, p. 233; OCHA, 2021a, 2021b).

National governments have the primary responsibility to protect their people and assets by ensuring good risk governance through effective Disaster Risk Reduction (DRR) (UNISDR, 2015, p. 13). This way, cultural, environmental, and economic losses can be prevented, enabling sustainable development (UNISDR, 2015, pp. 9, 36). For this process to be risk-informed, it must be "based on disaster-related risk information that enables the understanding of multiple concurrent threats and complex risks to and arising from development investment decisions and implementation" (Aslam Saja et al., 2021, p. 234). There is a well-established link between risk-informed (also risk-based or risk-sensitive) decision-making and planning with sustainable development in literature as well as the Sendai Framework (Aslam Saja et al., 2021, pp. 233-234; UNISDR, 2015, p. 19). Consequently, one way towards risk-informed planning is for it to be recognised as a cross-cutting issue, a "common concern of all sectors, or [...] everybody's business" (Chakrabarti, Srivastava, & Rafisura, 2017, p. 9) and for risk information to be systematically integrated, also referred to as mainstreaming, in all development planning. It also means that short-, mid- and long-term activities of disaster mitigation, preparedness for emergency response, relief, and recovery need to be included (Aslam Saja et al., 2021, p. 233). Every "dollar spent on reducing people's vulnerability to disasters [through proactive measures] saves around seven dollars in economic losses" (UNDP, 2012, p. 1). Yet this vital process of mainstreaming DRR remains slow and faces many obstacles (Chakrabarti et al., 2017, p. 9).

International efforts have been made to stress the importance of mainstreaming DRR into development plans. The *Sendai Framework for Disaster Risk Reduction 2015-2030* was globally agreed to by governments to help remedy the situation. It is an instrument that provides countries with "concrete actions to protect [their] development gains from the risk of disaster" (UNDRR, 2021). According to the framework's first priority, it is essential to understand the existing "risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment" (UNISDR, 2015, p. 14). In other words, it is important to understand who or what is susceptible to which threat in what way, the possible consequences, and options to prevent or lessen the impact of such threat.

However, several factors ranging from institutional and social to political, and economic constrain efforts to mainstream DRR at different governance levels particularly in Least Developed Countries (LDCs). One such case is Burundi, which is "highly disadvantaged in [its] […] development process, for structural, historical and also geographical reasons" (UNCTAD, n. d.). Large parts of its population live in poverty, and it is disproportionately affected by disasters that reinforce its state of underdevelopment (UNCTAD, n. d.). As a member state of the Sendai Framework, Burundi has prepared its *National Strategy for DRR 2018-2025*. One of the strategy's objectives is to integrate DRR into the *National Development Plan 2018-2027* as well as sectorial policies (BMPSDM, 2019, p. 18). Burundi, like most states, formulates general development goals for each sector of society to be achieved over a period of years on all administrative levels (Burundian Republic, 2018a). To realise the objectives of the National Development Plan (NDP) sectoral and communal development plans are formulated, including concrete projects and an allocated budget. This plan is executed by the respective public

authorities and later evaluated and updated for the next planning period (Burundian Republic & BMCD, 2017, p. 20).

Burundi is frequently affected by hazards that turn into disasters leading to large displacements of people. There is a need to improve the protection of people and assets through effective DRR measures. The International Organization for Migration (IOM) also known as UN Migration is the new lead for the DRR pillar of the United Nations Development Assistance Framework and has launched a nation-wide DRR project in cooperation with the National Platform for DRR (NP). This entails multi-level risk assessments that will produce risk information that can help Burundian development decision-makers to adequately consider and act upon these risks. Note that this study was completed in collaboration with and supported by IOM, though the views expressed here are solely those of the authors and do not reflect the views of IOM or the United Nations.

1.1 Purpose and research question

The purpose of this research is to investigate the challenges and opportunities to integrate DRR into communal development planning in four case studies.

- *What are the barriers and opportunities to mainstream DRR in communal development planning in Burundi?*

To answer this question, field studies were conducted focusing on the sectors of agriculture and education. At first central concepts concerning DRR mainstreaming are presented, then the methodology is described and an overview of common barriers to DRR mainstreaming found in literature is given. Following, the background section provides context for the case studies Afterwards, the findings are presented and discussed in connection to previously identified barriers and newly arising linkages.

1.2 Key concepts of mainstreaming DRR into development planning

This chapter first outlines key terms such as sustainable development, Climate Change Adaptation (CCA) and DRR, including its components of exposure, vulnerability and capacity. Afterwards, the concept of mainstreaming DRR is explained.

Countries strive towards development by continuously improving their economic and social conditions through wise resource management (Chakrabarti et al., 2017, p. 3). Yet each society will define for itself the means and exact goals to be achieved by this development (Becker, 2014, p. 130). Becker (2014, pp. 131-132) emphasizes that environmental protection needs to be part of the development process for it to be sustainable and meet the needs of current and future generations. Nonetheless ongoing global processes such as climate change, globalisation, rapid urbanisation and rising demographic pressure are increasing disaster risk and therefore threaten countries' sustainable development. UNISDR (2009, p. 9) defines a disaster as a "serious disruption of the functioning of a [...] society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected [...] society to cope using its own resources". Disasters are not natural, they are created by natural or man-made hazards interacting with different physical and socio-economic vulnerabilities (Becker, 2014, p. 47; UNDRR, 2019, p. xiii). Consequently, to protect their valuable development gains societies need to be capable to manage disaster risk to become more resilient (Becker, 2014, pp. 57, 102).

In this context, a resilient society or country has the ability to stay on its trajectory towards its self-set development goals while being able to "anticipate, recognize, adapt to and learn from [...] disruptions and disasters that may cause harm to what human beings value" (Becker, 2014, p. 150). This

understanding of resilience demands a proactive in addition to a reactive approach to risk management. Risk is a complex phenomenon and needs to be seen within its context. It is dynamic and ambiguous as it will always depend on a "society's perceptions, needs, demands, decisions and practices" (UNDRR, 2019, p. 337) at the time. Moreover, it is significantly determined by the "exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences" (UNISDR, 2009, p. 9) for a society and its assets. A person, asset or system is exposed if it is in a hazardous zone, which makes it more likely to be negatively affected (UNISDR, 2009, p. 15). Vulnerability describes the "conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility" (OEIWG 2016 cit. in UNDRR, 2019, p. 148). The vulnerability of an individual, object or system determines the severity of the hazard's impact (Becker, 2014, p. 147). Vulnerability can vary over time. It can be more direct or structural and should always be seen in relation to a specific threat instead of a general trait of a group or asset (Becker, 2014, p. 142; UNDRR, 2019, p. 148; UNISDR, 2009, p. 30). On the other side, capacity describes "all the strengths, attributes and resources available" (UNISDR, 2009, p. 5) within an individual, organisation or society that can limit disaster impact and increase overall resilience (Becker, 2014, p. 147). Consequently, reducing either exposure or vulnerability, or increasing capacity, while considering different time scales, will lower the overall risk of a disaster occurring or reduce its magnitude (UNDRR, 2019, pp. iv, 33, 199). For example, a blanket can reduce a person's immediate vulnerability to cold temperatures whereas the construction of dwellings with insulation may reduce their susceptibility long-term. Reducing exposure would mean limiting their time spent outside, wearing warm clothing or being able to make a fire, which would increase their capacity.

In the last 30 years it has become increasingly apparent that disaster response is primarily treating the symptoms and allowing disasters to continue, since it usually does not address the underlying causes of vulnerability (UNDRR, 2019, pp. 27, 203). DRR also targets these root causes but remains a complex task due to the interconnectedness of its elements and their changing character. Moreover, the consideration of future trends in climate change adds another dimension. "Climate change is a major driver of disaster losses and failed development. It amplifies risk" (UNDRR, 2019, p. x). Both CCA and DRR are about "protecting development gains and effective planning […] [as well as] managing risks and uncertainties for all shocks and stresses [which] is simply good business" (Mitchell, 2010, p. 9). The fields significantly overlap in terms of concepts and goals, yet they are not the same (Mitchell, 2010, p. 2). The key areas where they converge is that DRR is concerned with the changes in frequency and intensity of weather and climate-related hazards and CCA focuses on reducing their impacts (see Figure 1) (Mitchell, 2010, p. 7; UNISDR, UNDP, & GFDRR, 2010, p. ii). Nevertheless, DRR can additionally comprise geophysical, biological, and technological hazards. CCA on the other hand also deals with long-term adjustments of society to a changing climate including exploiting new opportunities (Mitchell, 2010, p. 7). Despite different spatial and temporal scales, CCA and DRR go hand in hand, so a nexus among them is seen as necessary when planning for sustainable development (UNDRR, 2019, p. 360).

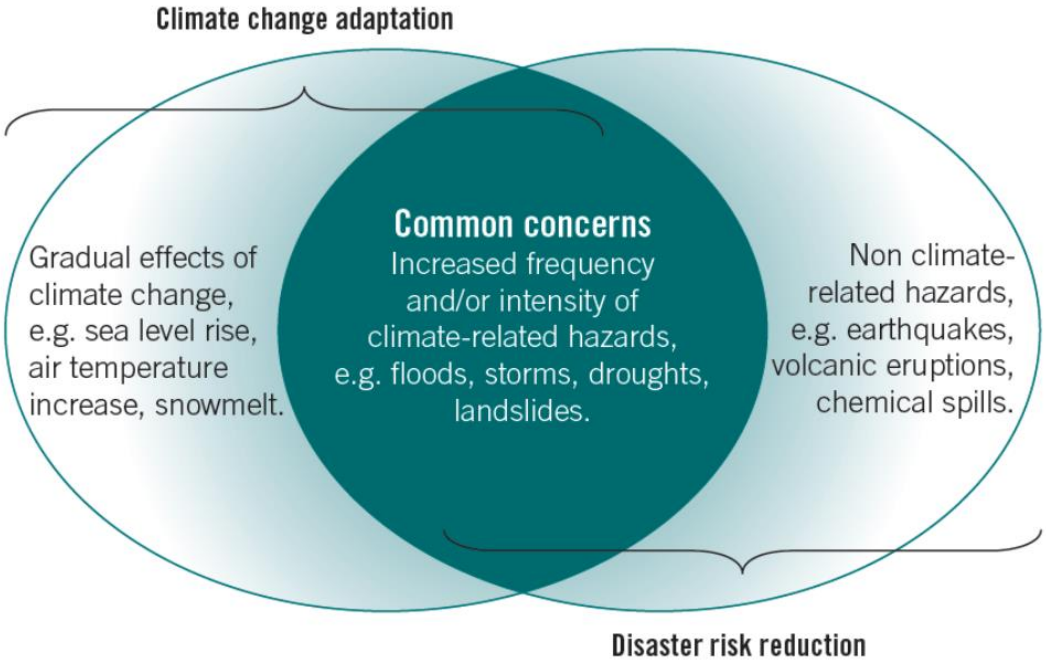

Figure 1: CCA and DRR overlap (Turnbull, Sterrett, & Hilleboe, 2013, p. 7)

On the one hand, disaster impact and development investments are irrefutably linked as disasters can decrease economic and human capital, delaying progress (Aslam Saja et al., 2021, pp. 233-234; Upreti, 2006, pp. 46-47). Development decisions contain risk, particularly when natural resources are being exploited, benefits for different social groups are unevenly distributed, or land use ventures into hazardous areas (UNDRR, 2019, p. 337). On the other hand, disasters can also create a window of opportunity to 'build back better', improving people's living conditions and reducing their vulnerabilities (Upreti, 2006, p. 47). The United Nations' Office for Disaster Risk Reduction (UNDRR) (2019, p. 337) emphasizes in the *Global Assessment Report on DRR 2019* that merely complementing development with risk reduction measures is insufficient. Rather DRR needs to be mainstreamed into the different development sectors. Mainstreaming means that neglected cross-cutting issues are put into the focus making them "everybody's business" (Chakrabarti et al., 2017, p. 9) to be considered by all sectors and levels, in academia, media, civil society as well as the public and private sector (Chakrabarti et al., 2017, pp. 8-9). It is a "dynamic process that aims to understand risk at the heart of development decisions in policymaking, planning, budgeting, programming, implementation, monitoring and evaluation at national, sectoral and subnational levels, rather than seeing risk management as an add-on" (UNDRR, 2019, p. 341). This means that DRR needs to be systematically integrated and institutionalised and include the assessment of sector specific vulnerabilities and risk management strategies (Becker, 2014, p. 47; UNDRR, 2019, p. 337). Mainstreaming DRR helps a society be resilient since threats to development gains can be anticipated, recognised, and addressed to avoid or limit losses. Additionally, the society can adapt and learn from previous disasters (Aslam Saja et al., 2021, p. 233; Becker, 2014, p. 147; UNISDR, 2011, p. 56). Practically, this translates to the necessity of risk-informed development planning, which is a "decision-making process based on disaster-related risk information that enables understanding of multiple concurrent threats and complex risks to and arising from development investment decisions and implementation based on those information and decisions" (Aslam Saja et al., 2021, p. 234). This means that development projects and plans should include activities concerning disaster prevention, preparedness for response, mitigation, and recovery together (Aslam Saja et al., 2021, p. 233; UNISDR, 2011, p. 56). This way existing and future risks can be reduced through e.g., early warning systems or retrofitting of buildings. As risk cannot be entirely

eliminated, it is necessary to prepare for an effective response and recovery after a disruption in combination with compensation and risk-transfer schemes such as insurances. According to the Sendai Framework all of these components make up a holistic DRR approach (UNDRR, 2019, p. 338).

National and local development strategies and plans are vital instruments to realise the Sendai objectives for risk-sensitive development planning and implementation (Aslam Saja et al., 2021, p. 232). Yet pre-existing vulnerabilities in LDCs and high complexity can make mainstreaming DRR appear overwhelming and impossible (UNDRR, 2019, pp. 375-376). Nevertheless, according to Hewitt (2013, p. 7), most losses caused by disasters "could have been prevented or greatly reduced with available, affordable means [...]. Again and again, damage and mortality profiles show that pre-existing vulnerabilities and absent protections decide who lives and dies, what is destroyed and what survives. This applies to people's exposure, the vulnerability of their bodies, homes, and livelihoods, available or absent protections and response capacities. This is the core of causal relations between disaster and development."

It was decided to limit the focus of the study to DRR since this is the primary objective of IOM's project in which the study was carried out. The research aims to provide a comprehensive overview of existing barriers to and entry points for mainstreaming DRR instead of focusing on the differences and commonalities of DRR and CCA in practice. Previous efforts to mainstream CCA in Burundi could be found within the National Development Plan whereas the DRR component appeared to be underdeveloped (Burundian Republic, 2018a). However, due to the overlap between the fields it is likely that DRR and CCA may entry points in common.

2 Methodology

The following chapter first describes the researchers' ontological and epistemological assumptions and the research strategy. Further, the case study approach including data collection and data analysis is outlined and main limitations and ethical considerations are presented.

2.1 Ontological and epistemological assumptions

According to the researchers' perspective, an objective world exists, but the interpretations and perceptions of reality differ, which corresponds to Social Constructivism (Creswell, 2013, pp. 24-25). From previous interactions the researchers have found that reality may be viewed very differently, depending on the actors' perspective that is rooted in their experience, education, socio-economic and cultural background. Their understanding of how the world works shapes how DRR approaches are constructed and determines which approach is appropriate and prioritised. These assumptions determined the approach to the methodology for the study: the data needed to be retrieved from different sources to obtain a comprehensive impression of the setting. The triangulation of different sources allowed to lower the impact of the research participants' biases, which results from the different positions and perceptions of reality.

2.2 Research strategy

The research strategy was inductive: The data was collected to describe the barriers of communal administrations to integrate DRR, and to draw (locally restricted) analytic generalisations about the observed patterns (Blaikie, 2010, p. 83). Since causes of the observed barriers were investigated and therefore the 'why-question' intended to be answered, the case study approach presented an appropriate methodology (Yin, 2003, p. 9).

2.3 The case study approach

The aim of the research was to identify the challenges and ways Burundian communes with a high hazard exposure integrate DRR into their communal development planning. As case study research is meant to analyse one issue based on one or more cases, the case study approach is an appropriate methodology for this research (Creswell, 2013, pp. 101-102). The case study approach is especially recommended when more than one case is involved, as described with the collective case study. The conclusions from one issue investigated in multiple cases and contexts using replicative procedures makes a study more robust (Yin, 2003, p. 53). The case study approach requires using multiple data collection methods for a good understanding of each case (Creswell, 2013, p. 157). Universal generalisability is not achieved with qualitative methods. However, it is possible to see issues that come up in every case as a pattern (Yin, 2009 cit. in Creswell, 2013, p. 101). Therefore, it was not intended to develop statistical generalisations that could be drawn from numerical sampling methods. Instead, the research aimed for analytic generalisations generating findings which may be transferred to countries sharing similar traits and challenges as Burundi (Maxwell, 2012, p. 246; Yin, 2003, p. 10). One main concern about case studies is that they are suspected to deliver insufficient results, as they do not follow a systematic procedure (Yin, 2003, p. 10). This again links back to the kind of generalisation that was intended to be produced, which only applies to cases with the same criteria or in the same frame as the cases, instead of creating universal laws.

Creswell (2013) describes different stages for the case study approach, consisting of checking the applicability of the approach for the research problem, the identification of the cases using purposeful sampling, data collection, an embedded analysis that considers the specific research problem, and the interpretation of the results.

2.3.1 Applicability of the case study approach

For the methodology to be appropriate to use, the cases should be properly framed with clear boundaries for the several cases (Creswell, 2013, p. 100). These boundaries were drawn along the administrative borders of the communes in Burundi. The country has 119 communes, of which four served as cases for the given research.

2.3.2 Identification of the cases

Creswell suggests deciding on the type of case study and thereafter to choose the cases by using purposeful sampling (Creswell, 2013, p. 100). As illustrated, the collective case study focusing on one issue in several cases turned out to be most useful. It was decided on four cases as it allowed manageability and a good understanding of each case while enabling identification of common themes across the different cases.

The purposeful sampling criteria were that selected communes: (1) were among the most affected communes by natural hazard-induced disasters in Burundi, (2) had a Communal Platform for DRR (CP), and (3) were accessible to the researchers in terms of security. By process of elimination, the communes of Mutimbuzi (Bujumbura province, rural), Ntahangwa (Bujumbura province, Mairie/city), Rumonge (Rumonge province) and Musongati (Rutana province) were selected (see Annex 1 for detailed approach).

The cases presented diversity in their geographical location, rural/urban character, types of natural hazards and economic conditions. However, if common patterns among all cases were found, some generalisations could be drawn for other Burundian communes affected by similar hazards.

Each case can be represented by diverse systems (e.g., natural, economic, social systems). Therefore, in order to decrease complexity, it was decided to analyse specific sectors rather than the entire cases (Creswell, 2013, p. 89). Focus was placed on DRR mainstreaming within two thematic units contained within the strategic axis of communal development plans (PCDCs) of all case communes, namely ‘Agriculture’ and ‘Education’. The reason for the choice was that 85-90% of the Burundian population depended on agriculture for their livelihoods and the agricultural sector was among the most impacted by disasters (BMIPTLD, 2020a). The education sector was chosen even though the linkage to DRR may appear less obvious. Yet as Burundi has a very young population (half of the population being younger than 17.3 years in 2020), education holds the potential to be an entry point for achieving more sustainable DRR practices in the future (UN, 2019).

2.3.3 Data collection

In a case study approach information should be collected from different sources and methods to allow triangulation of the data. Bias and limitations of the used methods can be balanced out, which increases the validity of the study (Maxwell, 2012, p. 236). Here the data collection methods of semi-structured interviews, document analysis, participatory observation and literature review were utilised in order to construct a comprehensive picture of the situation from different perspectives, which is in line with the stated ontological and epistemological assumptions. In addition to that, multiple researchers increase the validity of the results (Creswell, 2013, p. 251).

2.3.3.1 Literature review

Using the search engines of Lund University library (LUBsearch), GoogleScholar, Research Gate and Elsevier the scoping of literature departed from the keywords "DRR mainstreaming into development planning", "risk-based development", "risk information" and "local development planning". From there a snowballing approach was utilised. It was found that since 2000, most scientific articles and reports were authored by research institutions, UN offices, notably UNDRR, ESCAP, UNDP and development banks such as the World Bank and the Asian Development Bank. Additionally, much work has been done by aid organisations and national or multi-national development agencies such as ECHO, GIZ, SDC, IFRC and Tearfund. In this context consultancy firms also play a role as they are frequently tasked by these organisations or by national governments to conduct research or produce tools and reports on the issue. Geographically, case studies from South and Southeast Asia appeared to be more frequent in English-speaking literature.

2.3.3.2 Document analysis

After the case selection, IOM staff assisted the researchers through their established network in requesting the communes' current PCDCs. PCDCs are public documents, yet they were not accessible without personal contact to the responsible communal staff.

In the PCDCs the following sections were reviewed: (1) the commune summary, (2) sector description of agriculture, education, environment and CCA, and DRR (if available) and (3) the proposed development projects within these sectors. The analysis focused on the incorporation of risk information concerning hazards and factors increasing vulnerability or capacity. Thereafter, proposed projects were examined for DRR-related measures and the results were put in a table for a commune comparison.

2.3.3.3 Participatory observation

Participatory observations are one suggested method in case study research (Creswell, 2013, p. 166-167). This method was not initially included in the research plan. However, it was decided to be added as conversations and experiences outside the formal interview setting deepened the contextual understanding and embedding of the study. Especially relevant observations were described and interpreted in field notes, which were then analysed in the same way as the interviews.

2.3.3.4 Semi-structured interviews

Semi-structured interviews can be understood as "guided conversations" (Rubin & Rubin, 2012, p. 31) that are not rigid. The researchers prepared a set of questions, but the method allowed the flexibility to further investigate certain subjects. At the same time, it permitted the researchers to follow a certain structure to have a comparable set of questions for the different interviewees (Rubin & Rubin, 2012, p. 31; Turner, 2010, p. 755; Yin, 2003, p. 89). In this mode of interviewing, the researchers aimed to satisfy their data needs striving to achieve saturation (Creswell, 2013, p. 289), while recognising that this would only be the case when the interviewee has trust in them, which could be built by asking "friendly and non-threatening questions" (Yin, 2003, p. 90).

Selection of interview partners

Interviewees were selected by purposeful sampling. In total, 34 key informant interviews were conducted. Additionally, two interviewees independently filled out the interview guide as questionnaire since they were not available for an interview. Twenty of the interviews were held with administrative staff of the four case communes and 14 with subject experts (representatives of the National Red Cross Society and governmental, non-governmental, UN, private and research institutions) covering the topics of agriculture, education, development planning and DRR. In each communal administration, 4 to 7

people, most of whom were part of the CP, were interviewed. They held responsibilities in the following areas: Communal administration, development planning, social affairs, experts of agriculture, education, and spatial planning. Apart from three participants all interviewees were of Burundian nationality and four interviewees were female.

Interview guide

The set of questions that was used for the semi-structured interviews was conceived before the interviews in two interview guides, one for the communal administrative staff, one for the experts (see Annexes 2 and 3). The set of questions were not directly answering the research question but could rather be seen as a means to collect the parts necessary to do so (Maxwell, 2012, p. 236; Turner, 2010, p. 755). The concept of risk information and DRR and their mainstreaming into development plans may seem abstract to someone who does not work in the field of DRR. Therefore, the interview guide was formulated in a way that the questions guided towards the more specific questions at the end, attempting to facilitate the interviewee's understanding subject and assisting them in drawing conclusions about DRR in relation to their field of expertise. The building blocks of the interview guide, which each consisted of several questions, were divided into introduction including the interviewee's position and connection to DRR, occurring disasters, understanding of risk assessments and development planning. For the experts, there were additional questions about agriculture, education, and the private sector that were asked depending on the interviewees' field of expertise.

Interview procedure

The communes and the experts were contacted either by phone or email and the interviews took place at the communal administrations or at the experts' institutions. All interviews took between 30 and 90 minutes and were conducted face-to-face except for one online interview. It was intended to interview the partners individually, but one group interview was conducted with three commune staff, as this was requested. Alternatingly, one of the two researchers took the position of the interviewer, whereas the other researcher took notes. The interviews were predominantly conducted in French with some interviews in English. It is important to note that these were not the first languages for either the interviewers or interviewees, which can increase the likelihood for misunderstandings. This was tried to be mitigated by crosschecking answers for plausibility and through minor translations from Kirundi to French provided by local IOM staff. After introducing themselves and the research topic, the researchers indicated the estimated duration of the interview and reminded the interviewees that the participation was voluntary and that there was no compensation. The interviewers informed the interviewees that their answers would be treated anonymously.

After each interview, the researchers wrote a short memo describing main points and impressions from the interview, which was complemented by another entry after the transcription process. These memos were revisited for the data analysis, as they could be seen as a process of "prestructuring" and "preanalysis" (Maxwell, 2012, p. 233) of the data, that facilitated the analysis. The interview guides that were filled out in the form of a questionnaire were treated as interview transcripts as they were not shared with a representative amount of people.

2.3.4 Data Analysis and interpretation

The aim of the qualitative data analysis with the help of coding is to split the content and to "rearrange it into categories that facilitate comparison between issues in the same category and between categories" (Maxwell, 2012, p. 237). The categories and single codes were created in a preestablished coding scheme on the basis of the pre-analysis and a literature review of the topic. As suggested by NVivo by QSR (2015) codes were structured in a hierarchical manner, having a top-level node with the category

that was sub-divided in codes. The categories used were hazard, DRR element, DRR function, action, form, dimension, geography, sector, stakeholder, population, timeframe, state, and dynamic trend. The fracturing into the elements facilitated the rearranging in the analysis.

Coding was performed using NVivo software, applying the codes equally on all sources of information, the interview transcripts, the PCDCs as well as the field notes. Both researchers coded all material to avoid individual bias. Preestablished categories bear the possibility that other dynamics and themes are overlooked (Maxwell, 2012, p. 237). Hence the researchers piloted the coding scheme on several transcripts to make adjustments to the scheme, however this bias cannot be entirely eliminated.

The goal of the analysis was to identify barriers and opportunities to mainstreaming DRR into communal development planning as well as patterns among them. For this purpose, a comparison between the cases and themes was used for the analysis, which was done in the form of a table according to a "uniform framework" (Creswell, 2013, pp. 199-200).

2.4 Limitations and ethical considerations

The main limitations concern the researchers' position as being new to the Burundian context and as DRR consultants employed by IOM. As European female researchers there may be a risk of taking a Eurocentric perspective. Eurocentrism refers to adopting one's own values, norms and symbols as the only correct ones and transferring them to the research objects (Bettmann & Roslon, 2013, p. 14). A researcher, especially when new to the context requires an active reflexivity: "[…] researchers need to be active and reflective in the process of generating data rather than being neutral data collectors" (after Mason, 2002, cit. in Blaikie, 2010, p. 53). The Eurocentric bias was attempted to be mitigated by the researchers by continuously and critically reflecting upon their own position, having an active and transparent exchange with university supervisors and Burundian and international IOM colleagues about the design of the research, as well as the understandability and cultural appropriateness of the interview questions.

During the time of the research preparation and data collection the two researchers were employed by IOM as DRR consultants. This double function as researchers and employees certainly allowed access to multiple interview partners and documents, which otherwise would not have been possible. The power relation of employer – employee might play a role in all steps of the research, however all sides agreed that for the assignment of the study the researchers were solely acting in their researcher role. Further, there has been no commitment made to IOM for specific results to be achieved or methods to be used (SRA, 2003, p. 18-19). The researchers perceived that they could conduct their research independently and decided to transparently mention all involvement of IOM supervisors and colleagues throughout the study.

An ethical approach to the research requires respecting existing structures and hierarchies. In this case, this meant the anonymisation of sources, and the interviewees' option for clarifications. Before the interviews series that took place in March and April 2021, the researchers asked for permission from the National Platform for DRR, as well as the communal administrators of each case commune to interview selected stakeholders. It is important to have the consent of these key actors. However, every interviewee had the right to decide whether they would participate, as suggested by SRA (2003, p. 29).

The importance of anonymisation of the interviewees derives from the complex political situation and should allow the interviewees to speak freely and protect them from potential harm (SRA, 2003, p. 38). In the findings chapter the interviewees are therefore called, for example, "Communal expert" or "International partner", which does not reveal individual identities. Before the interviews, the

researchers asked the interviewees for permission to record the interview for use in later transcriptions. The transcription protocols were later on shared for possible clarifications with the interviewees who wished to receive their protocol.

Due to cultural and technological barriers (language, need for personal contact, limited internet access) that inhibited online interviews it was decided to conduct the research in person despite the ongoing Covid-19 pandemic. As a precaution the interviews were conducted outside or in well-ventilated spaces maintaining a physical distance between persons. The interviewees were able to choose whether facemasks should be worn or not. The wearing of masks was observed to impact trust building and communication as speech was muffled and facial expressions were less visible, creating distance between the interviewer and interviewee.

3 Literature review on mainstreaming DRR into local development planning

DRR mainstreaming into development planning is by no means a new item on the global agenda, since it was already part of the UN 1989 resolution which launched the International Decade for Natural Disaster Reduction (Chakrabarti et al., 2017, p. 9; UNDRR, 2019, p. 339). Nevertheless, only little progress had been made in most countries by the end of the *Hyogo Framework for Action* (HFA) in 2015 (UNDRR, 2019, p. 339). Succeeding the HFA, the Sendai Framework 2015-2030 stresses that sustainable development needs to be risk-informed, addressing underlying risk factors through policies, plans, programmes as well as public and private investments on all administrative levels and in all sectors of society (UNDRR, 2019, p. 339). Accordingly, the body of literature on this issue has grown in recent years although it still appears to only fill a niche in academic literature. Through a scoping of scientific and grey literature most common barriers to mainstreaming DRR into development planning are outlined and success factors highlighted.

3.1 Barriers to mainstreaming DRR into communal development planning

Within the *HFA Mid-Term Review*, Kishore (2010, p. 3) found that countries had made significant progress in terms of institutionalising and mainstreaming DRR. However, a consistent evidence base to describe the state of DRR was unavailable and DRR-CCA integrated approaches and risk management continue to be the exception rather than the norm especially in LDCs, which are most exposed to the adverse effects of climate change (Mitchell, 2010, p. 9; UNISDR et al., 2010, p. iii). Literature describes multiple barriers to mainstreaming DRR into development planning, which are mostly tied to lacking coordination and collaboration, and insufficient funding and information management.

3.1.1 The great divide between development, DRR and CCA: Lacking coordination and collaboration

It has been common practice to view disaster management as a repetitive cycle with subsequent phases. After a disruptive event there is an emergency response followed by a recovery phase and a time to set-up measures to lessen impacts and be better prepared next time a disaster strikes. Accordingly, stakeholders are often divided, focusing their activities on one of the phases (Aslam Saja et al., 2021, pp. 231, 233). Similarly, there exists a historical divide between the fields of DRR, CCA and development (Aslam Saja et al., 2021; Mitchell, 2010, p. 231; UNDRR, 2019, p. 369). This phenomenon can be observed in research, public institutions, aid organisations, and horizontally across sectors and vertically on different geographical scales as well as administrative levels (Kishore, 2010, p. 5; Mitchell, 2010, p. 2; UNDRR, 2019, p. 369). Professionals often come from different educational backgrounds which causes them to have diverging "working priorities, concepts, terminologies, tools and experiences" (Wamsler, 2006, p. 156). This further fosters the gulf between them and creates working silos (UNDRR, 2019, p. 379). This becomes evident in the different vocabulary in the three fields. Development often focuses on small-scale everyday problems that threaten life, health, and livelihoods to be met with security measures. In contrast DRR considers less frequent large-scale disasters focusing on risk and long-term prevention and preparedness measures and CCA concerns itself with reducing the impact of climate change (Wamsler, 2006, p. 156). This variety in professionals' perspectives and skills can be perceived as a strength but also causes confusion and horizontal and vertical fragmentation (Mitchell, 2010, p. 2; Wamsler, 2006, p. 154).

Furthermore, the divide is aggravated by separate institutional structures and their respective funding channels for emergency response and development (Wamsler, 2006, p. 171). Traditionally in most countries, the national Ministry of Environment concerns itself with CCA whereas DRR is usually a responsibility of the Ministry of the Interior and development planning can find itself under different agencies (Chimhowu, Hulme, & Munro, 2019, p. 82). With this division come dedicated inter-sectoral coordination groups, funding channels, and often separate entry points related to global agreements (Mitchell, 2010, p. 9; UNDRR, 2019, p. 372). Accordingly, aid organisations also have different collaborating partners at the national level. Despite interrelated objectives, there is often a lack of coordination between these departments within governments, and aid organisations. This leads to incoherent policies, "ineffective use of resources, due to administrative inefficiencies, duplication of efforts and damaging competition between different inter-sectoral coordinating mechanisms" (Mitchell, 2010, pp. 2, 9).

National legislation sets the preconditions for any progress on mainstreaming DRR and CCA. However, according to the 2019 *Global Assessment Report on DRR*, DRR is still rarely successfully integrated into legal frameworks, strategies and plans or it is formulated in an implicit or generic way, which impedes collaboration between these fields in practice (UNDRR, 2019, pp. 372, 379, 381, 386). Additionally, other important components such as DRR through spatial and land-use planning are still neglected (Kishore, 2010, pp. 10-11).

3.1.2 Barriers in funding

Another issue is that international donors, aid organisations, and national institutions tend to focus on short-term financing for disaster relief instead of more long-term risk-reducing measures whose impact is often less publicly visible (Aslam Saja et al., 2021, p. 234; Chakrabarti et al., 2017, p. 7; Hewitt, 2013, p. 3; Kishore, 2010, p. 4; Mitchell, 2010, p. 9). Visibility of a measure can significantly impact political will on all levels and may sway investment decisions in favour of more popular social or infrastructure projects (Aslam Saja et al., 2021, p. 234; Mitchell, 2010, p. 9). Overall, DRR has been chronically underfunded, making up only 0.4% of development assistance's budget between 1991-2010. This may be because its benefits remain invisible if it is successful (Ishiwatari & Surjan, 2019, p. 2). This is despite its cost-effectiveness, since according to the UN investing USD 6 billion yearly can generate a total risk reduction benefit of USD 360 billion by 2030 (Ishiwatari & Surjan, 2019, p. 2). Even if financing by international donors plays an important role in developing economies, national and local governments still provide the primary budget for DRR, which however remains insufficient (Ishiwatari & Surjan, 2019, p. 2; UNDRR, 2019, p. 373). Moreover, DRR is commonly not perceived as part of the development mandate of Non-Governmental Organisations (NGOs) since it is traditionally with emergency response (Wamsler, 2006, p. 155). Consequently, awareness and knowledge on how to integrate DRR is frequently lacking among professionals that are not directly associated with it (Wamsler, 2006, p. 155). Similarly, urban, and land-use planning, which are vital to a country's development, are frequently perceived as marginal topics without any explicit connection to DRR (Wamsler, 2006, p. 160). DRR is not popular; however, CCA is experiencing increased momentum having a higher political and public profile (Mitchell, 2010, p. 9). In summary, financial resources are released under different umbrellas and under different conditions, which perpetuates competition between stakeholders and hampers partnerships to achieve more coherence on the shared objectives (UNDRR, 2019, pp. 385-386).

3.1.3 Deficits in information management

The basis for any effective risk-informed strategy or plan is "adequate, accessible and understandable risk information" (UNDRR, 2019, p. 373) that needs to be available during the elaboration process of the respective document. Currently, data availability covering climate and socioeconomic data in appropriate resolution, presents a major barrier especially in African countries, consequently strategies may not be based on a preceding risk analysis or assessment (UNDRR, 2019, pp. 327, 369). An overall low level of risk awareness among decisionmakers prevents risk assessment and risk information from being made a priority for planning (UNDRR, 2019, p. 327). Additionally, lacking technical equipment such as climate monitoring stations significantly reduce data resolution, availability, and accuracy. Once the risk data has been collected, data management and information sharing are major challenges that hamper its utilisation as a basis to inform policy (UNDRR, 2019, p. 373). This is often due to the lack of sufficiently trained staff, a lack of communication between partners and the lack of a single platform to manage knowledge and information combining "scientific and local knowledge, good practices, natural and social scientific data, and risk information" (UNDRR, 2019, p. 368).

3.2 Success Factors to mainstreaming DRR into communal development planning

There are certain success factors that can enable the successful convergence of DRR and CCA and their integration into development planning. Many of these factors are general good practices for multi-stakeholder cooperation on cross-cutting issues. Overall, it appears to be beneficial when stakeholders actively seek out synergies whenever possible through for example joint risk assessment, strategies, and collaboration platforms to save money and increase efficiency and effectiveness of their actions (UNDRR, 2019, p. 369). When looking at mainstreaming DRR in a specific economy, actors from different government levels, sectors as well as non-governmental actors need to be involved and work together (UNDRR, 2019, pp. 373, 377). In some countries, public-private partnerships have also been especially successful to support local risk governance systems (UNDRR, 2019, p. 386). Successful collaboration can be facilitated through a "strong lead institution with a robust coordination mandate" (UNDRR, 2019, p. 386) on every administrative level. Working silos need to be broken down. This can be achieved through increased communication among disciplines and the participation of relevant stakeholders in project planning, implementation, and monitoring processes, which also reduces temporal barriers between project phases (UNDRR, 2019, p. 386). Concretely this can take place in the form of thematic inter-sectorial working groups or established information sharing protocols (UNDRR, 2019, pp. 368-369). At the same time there is a balance to strike between coordination of and collaboration on activities and clearly defined roles and responsibilities that are coherent with the mandate of the organisations or institutions (UNDRR, 2019, pp. 368-369). In the context of economies that rely on external financing, it is especially important to ensure project contextualisation and ownership by national stakeholders. This means that any planned initiative should be tailored to meet local needs according to the specific social, institutional, political, cultural, economic circumstances (Hagelsteen & Becker, 2013, p. 8). Additionally, the "local partner should be in charge of the development […] and be in the driving seat of the process" (Hagelsteen & Becker, 2013, p. 8), which can significantly enhance sustainability and effectiveness. This does not exclusively apply to national institutions but also refers to local communities and to the inclusion of population groups whose specific needs are often neglected, such as women and marginalised groups (UNDRR, 2019, p. 377). Additionally, using top-down (state- or partner-led) and more decentralised bottom-up (community-led) DRR and CCA approaches in a complementary way can increase success but may also increase complexity (Kishore, 2010; UNDRR, 2019, pp. 368-369, 373). Finally, strong political support on all

levels and risk-awareness of decision-makers are usually positive factors accelerating the mainstreaming process into new and existing structures and can free up resources (UNDRR, 2019, pp. 378, 380).

4 Background

This chapter will introduce Burundi and outline its geography, climate, historical, political, and economic setup as well as give an introduction of the agricultural and educational sector. Thereafter the DRR system and the communal development planning process will be described. Finally, the four case communes under study will be briefly introduced.

Figure 2: Location of Burundi (red) on African continent (Mapsland, n.d.)

Burundi is a landlocked country in Central East Africa within the Great Lakes Region (see Figure 2). It borders Rwanda to the North, Tanzania to the East, the Democratic Republic of the Congo (DRC) to the West and Lake Tanganyika to the Southwest (Nkunzimana et al., 2020, p. 2; World Bank, 2021). The country has an area of 27,834 km² and is one of the most densely populated countries in Sub-Saharan Africa with a predominantly rural population of 11.5 million (2017), which is projected to rise to about 15 million inhabitants in 2030 (Burundian Government & UNDP, 2020, p. 1; Burundian Republic, 2018a, p. 29). The population growth will most likely impact quality of life negatively resulting in increased land degradation and pressure on limited natural resources (Burundian Government & UNDP, 2020, p. 2). Burundi has two official languages: Kirundi, and French. Kirundi is most commonly spoken while Kiswahili is also prevalent in some areas (EAC, n.d.). The majority of the population is Christian at 78% while 20% belong to traditional religions and 2-3% are Muslim (Bauer & Langen, 2007, p. 91). Burundi is a low-income country and is among the LDCs with a GDP of 274 USD per capita (Worldbank, 2020). About 84% of the population is employed within the agricultural sector, which contributes about 40% of GDP. The economic growth between 2012 and 2016 was registered at 3%, mostly benefitting from the development of the service sector (Burundian Republic, 2018a, p. 36). Overall, Burundi's economy is heavily dependent on external funding and expertise provided by technical and financial partners (TFP)[1] that are often international inter-governmental, governmental, or non-governmental organizations (Thomas et al., 2011, p. 20).

In 2017 less than 10% of the Burundian population had access to electricity, concerning primarily rural areas with 2% compared to urban areas with 61.8% (Nsabimana, 2020, p. 7). In 2016, about half of the population had a mobile phone, and between 2% and 7% could access the internet with it (CIA, 2021; Kalemera et al., 2016, p. 5).

[1] The acronym TFP is used throughout the document, due to the common use of the French term PTF (*Partenaire Technique et Financier)* in Burundi. It was not possible for the researchers to distinguish the nature of assistance provided to the commune by the partner.

Burundi possesses a decentralised governance structure with 18 provinces and 119 communes (equivalent to a municipality). The communes are subdivided into smaller administrative entities named *zones*, containing *collines (English: hill)* (Burundian Government & UNDP, 2020, p. 1). The process of decentralisation is fairly recent and has been at the centre of administrative reforms starting in 2005 (Fillinger, 2013, p. 11). The purpose is to shift large parts of decision-making power to communes, which devise their own development plans, the PCDCs, covering five years at a time (Burundian Republic, 2020, p. 35).

Burundi is a constitutional republic and is currently governed by the political party CNDD-FDD (National Council for the Defence of the Democracy – Forces for the Defence of Democracy) with Evariste Ndayishimiye as president (World Bank, 2021). He took the position after the elections in 2020 following the unexpected death of his predecessor Pierre Nkurunziza (Bigirimana, 2021, p. 233). There is indication for limited civil liberties due to censorship of the internet and other media outlets, especially during times of political unrest (Kalemera et al., 2016, p. 6). Additionally, according to the *Corruption Perception Index* published by Transparency International Burundi (2021), is ranked 165 of 180 and shows a relatively high level of perceived corruption.

4.1 Political situation

Burundi has a politically tumultuous past that extends to the present, leaving the situation volatile and bearing heavily on the economic and social development of the country (Hajayandi, 2019, p. 52). The Burundian population divides itself into three ethnic groups. The largest group being Hutu (85%), second largest Tutsi (14%) and a minority belonging to the Twa people (1%) (Wilén, 2012, p. 64). These ethnic identities could already be found in some form before colonisation. However, they were independent from any political affiliation and more fluid, meaning "other identities such as clans, kinship affiliations, regional affiliations, intra-ethnic divisions, and royal cleavages were also important in defining social hierarchies" (Lemarchand, 1996, cit. in Raffoul, 2018, p. 10). Perceptions about pre-colonial times vary greatly seeing it on the one hand as an "idyllic society" (Bigirimana, 2021, p. 220) whereas others tell a narrative of one group exploiting the other in a feudal system before colonial rule. From 1896-1914 Burundi was under German rule and 1914-1962 it was part of the Belgian empire (Raffoul, 2018, p. 10; Wilén, 2012, p. 64). During the colonial times, ethnicity has become the main way of (political) distinction (Raffoul, 2018, p. 10; Wilén, 2012, p. 64). One ethnic group was favoured by the colonial powers due to supposedly superior intellect and "moral and aesthetic qualities [closer] to a Caucasian 'model'", which led to a discriminatory imbalance impacting many areas of society such as the access to education (Bigirimana, 2021, p. 221). Consequently, after Burundian independence most positions of power were given predominantly to one ethnic group (Bigirimana, 2021, pp. 237-238). In the following 50 years Burundi was marked by political strife, multiple changes in leadership and violence that resulted in a civil war 1993-2005 (CIA, 2021). Burundi's history and evolution of political and ethnic identities are inherently intertwined and complex. Narratives diverge widely among Burundians, labelling the recurring violence either as self-defence or genocide (Hajayandi, 2019). After the war, a peace agreement was brokered with international support. This agreement was broken by the latest president in 2015, who wanted to extend his term. As a consequence, TFPs reacted with a suspension or limitation of aid payments for several years (Africanews, 2021) and renewed violence broke out, leaving the political situation volatile (Bigirimana, 2021, p. 232). Bigirimana (2021, p. 238) stated that there is a "culture of the 'unsaid'" in Burundi, which means that violence may be "expressed in metaphors that may escape the attention of foreign researchers". He also talks about the act of "remembering by forgetting [which] is prevalent in history and civics textbooks where the various periods of violence that Burundi has experienced are not even mentioned" (Bigirimana, 2021, p. 238).

Rather other research found that memories about past events were mostly transmitted by family and friends (Hajayandi, 2019, p. 63). Overall, political, and ethnic discussions are sensitive and national reconciliation remains an important objective, which is made more difficult due to the diverging interpretations of Burundian history and ambiguity of the present situation (Bigirimana, 2021, pp. 238-239).

4.2 Geography and Climate

Burundi's topography is generally uneven and characterised by hills (Burundian Government & UNDP, 2020, p. 1). The country consists of five different agro-ecological regions. Its main rivers flow from east to west into Lake Tanganyika. The climate is moderately tropical with abundant rainfall, yet locally varying with changing topography (Burundian Government & UNDP, 2020, p. 2; Nkunzimana et al., 2020, p. 2). The country has two distinct seasons: the dry seasons from June to August as well as December to January and the rainy seasons from February to May as well as from September to November. In recent years, changes in rainfall patterns were observed, which are often attributed to global phenomena such as the El Niño South Oscillation (ENSO) and climate change (Burundian Government & UNDP, 2020, p. 2; Nkunzimana et al., 2020, p. 2). Climate projections indicate that the country will most likely experience an increase in frequency and intensity of hydrometeorological extremes such as delayed or torrential rains and prolonged droughts (Burundian Government & UNDP, 2020, pp. 2, 4).

The waters of Lake Tanganyika, the world's second largest freshwater body by volume, have been continuously rising, submerging neighbourhoods, washing away fields, and displacing thousands of people along its shoreline every year (Magoum, 2021; Miriti, n. d.). By May 2021, the water stood 4m above its historical average level with floods affecting more than 50,000 people in Burundi alone, which shares only 8% of coastline (DTM, 2021; Miriti, n. d.; Reliefweb, 2021). Climate change, along with widespread deforestation around the lake, contributes to the rise (Magoum, 2021; OCHA, 2021b). The 2021 lake floods were severe, yet this is neither a new phenomenon, nor the only hazard destroying properties and threatening lives (OCHA, 2021b). On a yearly basis, the Burundian people face disasters triggered by natural hazards e.g., torrential rains, violent winds, lake and river floods, intense erosion, landslides, hail, drought, earthquakes as well as other threats like epidemics and internal conflict (BMPSDM, 2019; Burundian Government & UNDP, 2020; TNH, 2014, p. 16).

4.3 Agriculture

Agriculture is of great importance for the Burundian economy and society, not only employing 84% of its people but also providing 95% of food (BMEAL, 2018, p. 11). The sector produces a variety of crops for consumption but also cash crops that can be exported, such as coffee, tea, cotton, and palm oil (Burundian Republic, 2018a, p. 18). One priority of the National Development Plan (NDP) is to fundamentally restructure the sector, moving from subsistence farming to highly productive activities such as manufacturing (Burundian Republic, 2018a, p. 10).

Despite favourable climatic conditions to produce a variety of crops, overall production is low and insufficient to ensure food security. Additionally, the decline of arable land due to soil degradation and a growing population has proven challenging for farmers. There has been a decrease from 1 ha in field size per household in 1973 to 0.5 ha in 2009 (Baumont-Keita et al., 2011, p. 2; Ndagijimana, 2021, p. 21). Consequently, remaining land is being continuously overexploited. In general, farmers do not possess heavy machinery to cultivate their land and the use of slash-and-burn practices, cultivation on steep slopes and the planting of monocultures without crop rotation are common (Baumont-Keita et al.,

2011; Cochet, 1998, p. 22). Moreover, using firewood as the most common energy source accelerates land degradation and deforestation. The agricultural sector is highly exposed to climatic hazards and could rapidly decline further if measures are not taken (BMPSDM, 2019, p. 16). Women are likely to be most impacted since they constitute the majority of farmers working the land (Baumont-Keita et al., 2011, p. 8). The National Agricultural Strategy (NAS) 2018-2027 already takes DRR into consideration in one strategic sub-axis of *Sustainable Growth of the Agricultural Sector*. A sub-axis aims to develop resilience towards climate change through CCA strategies, technologies, information dissemination and education on the issue as well as the establishment of an early warning system (BMEAL, 2018, p. 35).

Due to a lack of well-developed road infrastructure, the movement of goods and people is challenging, so rural areas are often isolated from national or regional markets, which is inhibiting progress in the agricultural sector (Baumont-Keita et al., 2011, p. 10; BMEAL, 2018, p. 31). Moreover, the volatile security situation and frequent land disputes impact agricultural production and affect the investment climate (Baumont-Keita et al., 2011, p. 10).

4.4 Education

Burundi introduced free primary education in 2005 and has seen improvements in quality and access to education with no major differences between provinces and gender (World Bank, 2021). Due to the growing Burundian population the number of students has been rising considerably at all education levels. The numbers have doubled - even quadrupled - over the past twenty years (Burundian Republic, 2018b, p. 10). Especially in urban provinces, the student-teacher ratio can be at 70 students per teacher (the fewest nation-wide being 41), which impacts education quality (Burundian Republic, 2018b, pp. 10, 16). Despite the general growth of the sector, it is facing major difficulties regarding school attendance of adolescents, lack of teacher training, reduced learning times compared to neighbouring countries, and a limited dedicated national budget (UNICEF, n.d.).

The national plan for the education sector recognises a high risk due to climatic hazards for both the schools' infrastructure as well as students' attendance (Burundian Republic, 2018b, p. 17). Suggested mitigation measures concern building hazard resilient infrastructure including conducting risk assessments before, during and after the construction of school infrastructure and improving the EWS. The National Contingency Plan further suggests the establishment of information, education, and communication tools. The DRR capacity assessment of 2013 conducted by Cadri refers to a 2013-2015 roadmap of the Ministry for Education that was elaborated for the purpose of integrating DRR in the curriculum (Cadri, 2013, p. 35). Yet concrete steps towards the implementation of these plans, are not mentioned in any document (Burundian Republic, 2018b, p. 56). Since a third of the national budget is allocated to the education sector it was especially impacted by the 2015 crisis and suspension of aid, which led to investments declining by 18% between 2015 and 2016 (Burundian Republic, 2018b, p. 8).

4.5 The development planning process

The communal development plans, also PCDCs, are aimed to be a coherent set of programmes aimed at positive changes in the life of the communes (Burundian Republic & BMCD, 2017, p. 19). The documents are elaborated by the communes according to the Practical Guide to Communal Planning in coherence with the NDP and put into practice after their verification by the Ministry (Burundian Republic, 2020, p. 35). Currently the PCDCs are in their third generation, extending over five years until approximately 2023. Ten years after their introduction, the PCDCs were criticised for lacking realism concerning financial resources, local competences, and implementation, which led to an adaptation of the guiding document (Burundian Republic & BMCD, 2017, p. 8).

The PCDC process consists of the different phases of preparation, problem diagnosis, plan elaboration, approval, and management. Firstly, during the preparation phase, local institutions decide the necessity of elaborating a new PCDC and inform the population. Then a facilitator team is constituted from communal staff followed by a collection of primary data using a SWOT-analysis (Strengths, Weaknesses, Opportunities, Threats) and a secondary data analysis during the diagnostic phase. The data collection takes place in every colline and is first synthesised on a zonal level and then for the whole commune. Afterwards, the first draft of the PCDC is written and discussed in the elaboration phase. During approval, the PCDC is handed to the national level and presented to the provincial and communal level. Subsequently, during the management phase the PCDC draft is updated and projects containing concrete measures are elaborated (Burundian Republic & BMCD, 2017, pp. 27-70). Every year an annual investment plan is devised prioritising certain projects. Each commune receives a budget to finance the PCDC, yet commonly additional funds need to be procured from either national level, communal taxes, or local organisations and TFPs (Burundian Republic & BMCD, 2017, pp. 59-60).

4.6 The DRR system in Burundi

Burundi aligns its engagement in DRR with the Sendai Framework, the Paris Agreement, the Sustainable Development Goals, and other international frameworks (BMPSDM, 2019, p. 16). The highest directives for DRR are formulated by an inter-ministerial committee that is chaired by the Vice-President (BMPSDM, 2019, p. 20). DRR falls under the responsibility of the Ministry of Public Security and Disaster Management, whereas CCA is located under the Ministry of Environment, Agriculture and Livestock (BMEAL, 2019; BMPSDM, 2019).

The DRR system follows the administrative structure of the DRR platforms on national, provincial, and communal levels, which was first put into place by the National Platform (NP) for DRR in 2007 in accordance with the Hyogo Framework for Action (BMPSDM, 2019, p. 11). The NP is composed of representatives from different ministerial departments and key DRR stakeholders in the public and non-governmental sector. The Provincial Platforms (PP) and Communal Platforms (CP) for DRR are chaired by the provincial governors and the communal administrators (equivalent to a mayor) respectively. Sectoral groups and platforms at provincial and communal level are to be set up in the same way as at national level (BMPSDM, 2019, p. 20). A National Strategy for DRR 2018-2025 and the National Contingency Plan 2020-2021 have been produced by the Burundian government (BMPSDM, 2019; Burundian Government & UNDP, 2020). At the time of the study, different international agencies had previously produced climate and disaster risk assessments, and two country-wide risk assessments were in progress (Ramboll, 2020).

4.7 The case studies

The four chosen case communes (see Figure 3) whose selection process is illustrated in sub-chapter 2.3.2 are described below. According to their PCDCs, all communes have a predominantly young population with a 25% to 41% increase in the past 11 years.

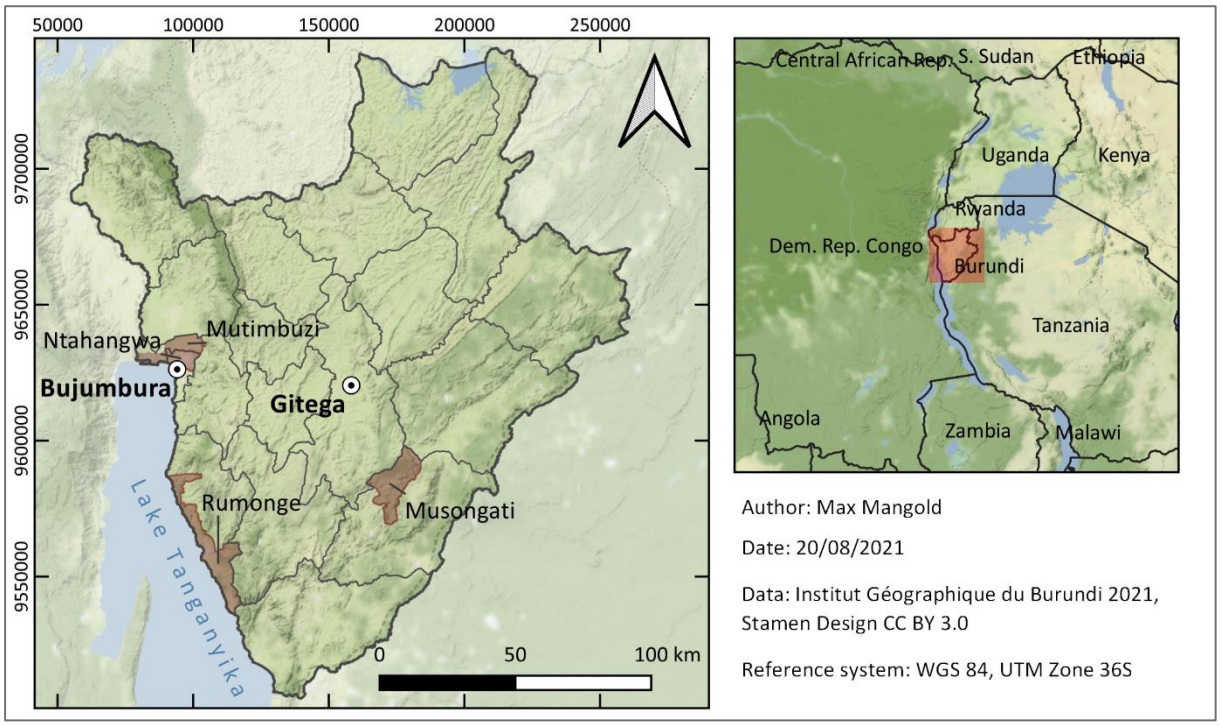

Figure 3: Location of the four case study communes in Burundi (Mangold, 2021)

4.7.1 Musongati

Musongati is one of the six communes in the south-eastern province of Rutana. According to its PCDC the rural commune with a population of 65,000 inhabitants is exposed to climatic hazards that are not further specified. More than 90% of the population live off of agriculture, and agricultural products are sold on local markets with a limited profit. Other economic activities are not well developed (BMIPTLD, 2020a).

4.7.2 Mutimbuzi

Mutimbuzi is one of the five communes of the Bujumbura Rurale province. It is located to the north-west of the economic capital and to the north of Lake Tanganyika, with the main river Rusizi coming from the north and flowing into the lake. The commune borders DRC to the west. The commune lies on a plain with occasional steep slopes. The most relevant hazards are torrential rains and river and lake floods. The commune with a population of 95,000 inhabitants predominantly relies on agriculture and livestock for its economy and was said to have a satisfying productivity due to fertile soils. Furthermore, Mutimbuzi has a small artisanal and commercial sector that is benefitting from the proximity to Bujumbura and its location near main national roads (BMIPTLD, 2020b).

4.7.3 Ntahangwa

Ntahangwa is one of the three communes of the province Bujumbura Municipality (*French: Mairie*). Bujumbura is the economic capital and was the political capital up to the decision to move the government to Gitega in 2018 (Africanews, 2018). Ntahangwa shares a coastline with Lake Tanganyika and is separated from the rest of Bujumbura by the river Ntahangwa. The primary hazards mentioned in the PCDC are torrential rains as well as lake and river floods. The densely populated commune has a population of 311,000 inhabitants. Economically Ntahangwa relies mostly on trade and crafts, having a variety of hotels, restaurants, and private companies. The commune previously consisted of six

communes that have been merged and now represent Ntahangwa's six zones. This is the reason why the current PCDC of 2019-2024 is the first of its kind for the new commune (BMIPTLD, 2020c).

4.7.4 Rumonge

Rumonge is one of five communes that belongs to the province Rumonge in the west of Burundi. It stretches over 60 km along Lake Tanganyika, where it is mostly plain but has higher altitudes towards the east. Several rivers cross the commune and flow into the Lake. River and lake floods, erosion, gullies, and droughts are the most relevant hazards mentioned in the PCDC. Rumonge has population of about 205,000 and economically relies on agriculture that produces considerable revenue through palm oil production. Additionally, it benefits from its strategic position close to Bujumbura and its trade connections to the DRC and Tanzania. Moreover, tourism plays a relevant role in almost all zones (BMIPTLD, 2020d).

5 Findings

This chapter comprises the state of risk information and DRR in the PCDCs as well as the research findings related to the barriers and opportunities to mainstreaming DRR into communal development planning in Burundi.

5.1 State of risk information and DRR in PCDCs

According to the PCDCs, each of the case communes' development plans had named the most relevant hazards in the section providing contextual information, although in a varying level of detail. In general, some causes of vulnerability were mentioned, but no profound risk assessment seemed to have been conducted beforehand. Two out of four PCDCs mentioned possible hazard impact to agriculture, whereas hazards that might threaten the education sector were not analysed in any PCDC. Within the PCDC section on environment and CCA three out of four communes presented a table on cause-impact-chains evaluating climatic trends, assets exposed, physical and socio-economic effects and options for adaptation in varying depth.

DRR-related measures could predominantly be found under the strategic axis of agriculture as well as environment and CCA within the section of planned projects. Two PCDCs had specifically included DRR in a separate axis on public security, but the planned DRR actions concerned only the establishment of the coordination mechanism CP and sensitisation efforts for communal administration staff. No apparent link between DRR and CCA was drawn in any of the PCDCs and, apart from a measure that proposed planting trees around a school as wind break and latrine constructions, no DRR related measures were found concerning the education sector. This was despite the fact that many interviewees stated frequent disturbances to school education due to disasters and highlighted the need to perform risk assessments in the future:

> *A good PCDC should be based on a risk assessment, including the education sector. For example, if you see that in commune X the schools are always destroyed by violent winds and torrential rains. […] The PCDC should provide a number of standard measures in the construction of school infrastructure, to determine that schools and classrooms will no longer be destroyed.*[2]
>
> \- International Partner[3]

In general, more advanced DRR understanding among communal experts and higher degree of DRR and CCA information inclusion into development plans appeared to be correlated. These particular communes had previously received support during the past years by a TFP specialising in CCA.

5.2 Categories of barriers and opportunities of mainstreaming DRR

The barriers and opportunities of mainstreaming DRR into development planning can be clustered into several categories: legislation, finances, information, technology, knowledge and expertise,

[2] The quotes of the interviewees in the findings chapter are written in italic letters. Direct quotations are given in quotation marks, while quotes in French were translated and paraphrased by the researchers and were therefore left without quotation marks.
[3] Equivalent to TFP

coordination between different governance levels, and underlying conditions and dynamics shaping disaster risk.

5.2.1 Legislation

The findings on legislation related barriers indicate three issues: disregard for the law, insufficient regulation, and a lack of consideration of risk in legislation. Different interviewees mentioned that there are existing legal codes for the regulation and management of water, environment, and land use. This included construction restrictions in risk zones such as buffer zones around rivers and lakes as well as prohibiting the planting of eucalyptus trees close to waterways. There was contradictory information on whether other zones of non-constructible land had been identified. According to many interviewees these buffer zones were frequently disregarded by the population and the enforcement of codes was said to be weak. For example, the buffer zone of 150m around Lake Tanganyika had often not been respected, which led to the coastal population being severely impacted by rising lake-levels (see Figure 4). Moreover, current land use planning regulations may not be sufficient. It was indicated by most interviewees that building codes on what materials to use for construction did not exist and one interviewee stated that DRR legislation in general was vague as described in the quote below: *Firstly, it is the national level that needs to provide political orientation because if the policy is not very clear in the matter [DRR] everything is chaos* (Local NGO).

Figure 4: House flooded by Lake Tanganyika (Own photo)

Several interviewees claimed that the communal law *(French: Loi communale)* as legal basis for communal development planning, did not specifically require taking disaster risk into consideration when creating PCDCs. This law grants all communes a financial autonomy to administer the budget they are provided with by the government. At the time of the interviews the three urban communes within Bujumbura municipality posed an exception since the municipality was said to determine the

communes' investments. This was in turn perceived as a barrier for their planning since they had limited control over their development expenses.

5.2.2 Finances

Funding related issues such as limited communal budgets, dependency on external support, and distribution of partner organisations appear to pose important barriers to mainstreaming. These also tie back to unmet basic needs of the population, lacking accountability, and support from higher authorities as described below.

In all cases, communal interviewees underlined that the limited budget significantly hampered the implementation of development plans leaving communes dependent on external TFP's support in terms of funding or technical expertise. Local NGOs with technical expertise did exist but were often equally dependent on external funding. The funding situation was mentioned to have become more complicated when financial aid from the European Union (EU) was suspended after 2015, making overall less funds available to the country.

In general, the Burundian economy was said to possess a low level of economic diversification as it is primarily based on agriculture. This increases economic vulnerability since this sector is most exposed to hazards. People that were displaced due to a natural hazard often lost their entire livelihood and did not have the funds to start over, which left them dependent on humanitarian assistance. Communal and international experts expressed that generally the population's basic needs were often not met. Insufficient agricultural production due to poor soils, pests or natural hazards was said to result in recurrent famines and financial losses. Additionally, basic hygiene and sanitation requirements for many households and in schools were not fulfilled. A communal expert reported that 80% of schools did not possess latrines and that if they existed, 500 students may have access to only two toilets. Moreover, basic furniture such as tables and benches were not available in sufficient quantities. Communal experts gave some credit to TFP projects that seek to address issues related to water, sanitation, hygiene such as cholera prevention.

One communal expert estimated that with its own means a commune would barely be able to finance 30% of its development projects. It was mentioned that frequently this resulted in projects remaining on paper. Comparing the cases, it could be seen that TFPs were unequally distributed among communes. Several interviewees implied this was due to the fact that the government determined in what area TFPs intervene and its priorities may differ from a perspective based on the communes most in need. Some communes had a variety of TFPs whereas others did not have any to support the implementation of their development plans. Some interviewees stated that the PCDC had been designed according to the expectation of receiving support, which in the end did not materialize and led to a low project implementation rate. Most frequently funds for larger risk-reducing infrastructure projects were said to be lacking and there was no TFP support. This issue is summarised in the quote below:

> *We have just spent more than 10 years with these gullies, there is no intervention. Each time we put them in the 5-year plan, we put them in the yearly plan, there is no follow-up. We submit them to the Ministry, but there is no follow-up.*
>
> - Communal expert

At the same time, in one commune a form of crowdsourcing was used independently of the PCDC engaging parents to finance lightning rods as a risk-reducing measure for schools.

Moreover, experts from private companies expressed that there was no incentive to become engaged as TFP in a commune's PCDC, even though they considered CCA, environmental protection and natural resource management during their business processes:

> *For example, to have small ruminants, you use the organic manure to make compost […] [that] you put on the field or always cover the land. Even during the dry season, you plant something […] between the palm trees […], which is there permanently and that you can cut afterwards for the biomass, so you leave it on the ground. That way, there is less risk of erosion.*
>
> - Private sector

However, the overlap between DRR and business continuity was confirmed, and some DRR-related measures had been supported through a corporate-social responsibility scheme. There was a general openness to look for common interests or investment opportunities with a mutual benefit with communes. At times private sector interviewees from larger national companies were not familiar with the PCDCs or how to access them.

An international partner underlined the importance of the PCDC format to acquire TFPs. If the plans were easily accessible, *"attractive and innovative [and a] well-presented [document] with sound information"* they could be better promoted to potential TFP, also from the private sector. In general, the communal experts also appreciated the PCDCs and the autonomy it provides the communes with, many of them referring to them as *bible of the commune* however they mostly could not imagine how to attract TFPs from the private sector.

5.2.3 Information

Most interview partners agreed that there was a need for risk information to be the basis for risk-informed development planning: *Because if you don't assess [the disaster risk], you can't prevent because you are working in a vacuum without data, without information. In any case, you have no basis for prevention* (Local NGO). Although several barriers were mentioned concerning information availability and information exchange, opportunities were also found.

5.2.3.1 Information availability

On the one hand, interviewees claimed that deficiencies in risk information were due to non-existing information, inaccurate or irrelevant information or that its quality was unverified or insufficient. Further it was based on historic events only, not considering climate change projections or other future trends.

In addition, basic data e.g., about the economy, were said to be insufficiently available, as summarised in the quote below: *It is this statistical weakness that is almost universal across the country* (National government expert).

On the other hand, other interviewees said stakeholders such as the NP, occasionally commune administration staff, the Burundian Red Cross (BRC), researchers, TFPs and private companies, were already collecting (risk) information. The information mostly concerned disaster damages and at times data on hazards, exposure, and sector-specific vulnerabilities. Some international TFPs previously created risk maps for focus areas in the country including climate projections. Many interviewees stated that there had not been any uniform risk assessment in the country. However, at the time of the interviews, one TFP was conducting two risk assessments covering the whole country: a probabilistic quantitative multi-hazard risk assessment on national level and a commune-based qualitative participatory vulnerability and risk assessment.

5.2.3.2 Information exchange

Another barrier mentioned was that information was often not exchanged. A lack of coordination and information management was indicated by many interviewees, as they did not know what information existed, what had been produced, where it was to be found or whom to ask for it.

Based on the interviews there were several reasons found behind the lack of information exchange. Communal experts stated that data was collected and stored on paper, which complicated the exchange. Similarly, according to some academics relevant research papers were mostly not digitised. Some international experts said they also observed an unwillingness to share information among institutions (public and TFPs) that viewed the information as their property meant to only serve their purposes. Another example was given where academics attempted to sell university information to TFPs for their personal gain instead of doing so in the name of the university. Two international experts also suspected the government to be unwilling to share because it could portray the country as weak with international partners. They related this to the fact that Burundi had not yet reported their disaster impact on the Sendai Framework:

> *"[One of the main barriers of using risk information is the] willingness to share information. […] Especially information related to weakness, so it's basically saying you're not prepared, you don't have strong buildings you don't care for the life or your people. You're not doing anything to address the issues, so it's a bit political also."*
>
> - International partner

As stated by the interviewee the government may leave funding opportunities unexploited by withholding information: *"Information is power. So as soon as you have information you report, you become visible like Rwanda, they report very regularly [...] they attract lots of funding because they show that [they are] engaged, responsible"* (International partner).

Another issue indicated was the overall resistance to exchanging data due to mistrust among Burundians possibly rooted in the events of the civil war, as illustrated by the following quote: *I think people here are still a bit suspicious of each other also from the history that happened. So yes, there's not much exchange* (Private sector).

On the positive side, experts from the national and international level mentioned several initiatives for better information exchange. For instance, the NP regularly shared climatological information with communes via email. The NP was said to organise exchange meetings with different stakeholders on the humanitarian situation, including religious organisations which play an important role in Burundian society. At the time of the interviews an online information sharing portal was planned to be established by a TFP to make the results of the nation-wide risk assessment widely accessible.

5.2.4 Technology

According to several interviewees Burundi did not have the technical tools to perform a profound, probabilistic risk assessment. Most interviewees stated the lack of technology hindered a wide access to risk-related information. Communes did not have computers and at times no electricity and the population often did not have the means to receive information such as a smartphone, radio, or TV.

Interviewees stated that either early warning systems did not exist, or they were not functioning. The Geographical Institute (IGEBU) was not able to do long-term climate modelling and there were not enough meteorological stations for data collection: *"There are only 8 meteorological stations for the*

whole country. So, if the wind didn't pass by the meteorological station, it was not recorded. So, we have no data. Basic data is not available" (International partner).

Many interviewees indicated IGEBU to be the institution that prepared seasonal forecasts and disseminated them in collaboration with local NGOs. It was described as an asset and said to possess the mandate and institutional structure to produce and process risk information even though important technological capacities and expertise were said to be missing. According to some interviewees this was already being addressed as IGEBU received extensive international support.

5.2.5 Knowledge and Expertise

Further barriers could be observed concerning the creation and maintenance of knowledge repositories and lack of expertise on how to mainstream DRR into strategic documents and PCDCs on different levels.

5.2.5.1 DRR in education

Interviewees stated that DRR was not integrated into the nation's school curriculum, which had been determined by the Ministry of Education. Additionally, it was said to be difficult for teachers to access knowledge as there were no books available on DRR, especially in Kirundi. The lack of DRR mainstreaming into the curriculum was widely recognised among interviewees to be a serious shortcoming. It was described as a missed opportunity to teach children from an early age about risk and benefit from the snowball effect, meaning that children would help raise risk awareness within the families. A national government expert stated that there had been attempts with TFP support to integrate DRR into the curriculum, but they had not been successful. The interviewee remarked that external support was necessary since government employees lacked the expertise on how to mainstream DRR into the education sector.

5.2.5.2 Good practices in risk sensitisation

Even though the potential to use schools had not yet been exploited to raise risk awareness among the population, several stakeholders were mentioned that were said to have sensitisation experience on the topics of environmental protection and risk reducing measures:

- The BRC had frequently conducted sensitisation activities either directly with the population or via the communal administration. The BRC was said to have a large pool of volunteers represented down to the lowest administrative level and also to own certain sensitisation tools to alert population, e.g., vehicles and megaphones.
- Local NGOs were said to share seasonal forecasts with farmers and transmit feedback received from the local level to the national level. Others were engaged in advocacy work for DRR related issues towards decision makers. Additionally, offers by NGOs to advise farmer associations on budgeting, their professional representation and climate adapted agricultural techniques were mentioned, for example through a public educational institute.
- Communal agricultural monitoring staff were said to have an important role sensitising and guiding the population on agricultural matters.
- Private companies who work with farmers described training measures on sustainable agricultural practices and budgeting, health, and nutrition.
- Media, including TV, radio and WhatsApp were mentioned as main means to reach many people.

- Religious institutions were said to be an asset as they had the opportunity to reach many people simultaneously.

Interviewees mentioned that 'proximity guidance' (*French: encadrement de proximité*) is especially effective. This referred to the ability of key people or groups living in the same colline, (e.g., agricultural monitors, model households) to be people of trust and able to effectively provide guidance to their community. Similarly, targeting specific groups such as women or parents was seen as useful for creating a multiplication effect. For example, parents were engaged in retrofitting schools, which raised their awareness to check their own dwellings. Women were described as doing most of the agricultural labour in Burundi and were therefore seen as an important group for sensitisation measures as emphasised in the quote:

> *The female farmers […] are the most numerous. In the Burundian population [...] women make up more than 80% of farmers. […] So, the agricultural matter is really […] held by women. As we say, women are the pillar of development in our country.*
>
> - Local NGO

Many interviewees described sensitisation to be best conveyed by demonstrations, simulations, or exchanges of experience. Demonstrations were for example done by model households. They were meant to be a good example to their neighbourhood by displaying the beneficial use of certain agricultural practices highlighted in the quote:

> *If we take the model household, it's really proximity [guidance], because the household will raise awareness among their neighbours. [...] So local guidance can use local resources for this awareness-raising […], [like] agricultural monitors in the field.*
>
> - International partner

Other means for demonstration were model fields, which showed that crop rotation is an effective tool to maintain soil fertility. In general, it was said to be an effective way to show that farmers could benefit from increased productivity and lowered cost when considering DRR. Further, simulation exercises were said to be useful for raising the population's risk awareness long-term. Two interviewees mentioned exchange visits between communes to discuss their DRR systems to have advanced both communes' understanding.

5.2.5.3 Existing expertise

On multiple administrative levels required expertise appeared to be lacking. For example, several interviewees stated that elected representatives tasked with the PCDC elaboration and implementation lacked the necessary competence due to an inadequate level of education. Moreover, interviewees referred to practices that can be associated with nepotism or corruption to gain access to key positions as summarised in the following quote:

> *The people who are appointed in the position of the communal councils, who are elaborating [the PCDC] are [sometimes] less educated people. […] They didn't even go to school […]. They are also people who have given corruption to the party to get on the list: 'We put you on the list [...]. If you want to be […] [high up] you have to give more money.' […] They don't look at the competence, they don't look at the level of education, that's it. And we end up with about fifteen people for vision development who have no vision. […] Who can't analyse, who can't even read a document.*

- Anonymised

An interviewee claimed well-educated Burundians did not prefer to work on lower administrative levels due to a diminutive salary. To remedy this, it was said by another interviewee that the new communal law allowed staff on higher administrative levels to keep their pay to incentivize them to consider working in a commune. According to participatory observations experts in the positions of CTAS and CTD (technical advisors) were commonly more risk-aware and were said to possess a university degree.

National and communal staff in public administration described a situation of widespread lack of expertise in using risk information or mainstreaming DRR into development planning. Information was said to be too scientific and not easily interpreted. Nevertheless, there were multiple tools and partners mentioned, which could be a resource. The fact that some of the interviewees took part in the entire PCDC elaboration process as well as communal contingency plan, might be beneficial and create a closer link between development and preparedness.

Furthermore, several TFPs were said to possess expertise in CCA since they had been engaged in Burundi in this matter for many years. This could be of value to the DRR sector since most interviewees agreed that CCA and DRR were inseparably linked. In contrast to DRR, which is only briefly mentioned in the National Development Plan under security and defence, CCA has an independent chapter dedicated to it. In the past, some TFPs specifically supported mainstreaming CCA into PCDCs for example using the methodology for climate proofing, which might be adaptable to be used for DRR as suggested by an interviewee. Collaboration between communes and TFPs was suggested as an opportunity for knowledge transfer for both PCDC elaboration and project implementation. However, if the entire PCDC was elaborated by a consultant, which had been the case in multiple communes. This was implied to take away ownership.

5.2.5.4 Lack of skill and infrastructure maintenance

Interviewees criticised one-time trainings for their lack of sustainability since the gained DRR/CCA knowledge and skills were quickly lost if not regularly applied. Similarly, project measures implemented by TFPs eroded without maintenance or were actively deconstructed by the people searching for building materials. Additionally, several interviewees stated that staff turnovers in administrations and international organisations without appropriate handover procedures were a barrier and cause for the loss of institutional memory: *When a government changes, we always change responsibility and accountability. And we always start at zero* (Local researcher).

5.2.6 Coordination between different governance levels

Coordination issues were highlighted as another barrier by the interviewees, specifically concerning a lack of horizontal and vertical communication across administrative boundaries and levels as well as non-functioning coordination platforms. For instance, communes regularly faced problems coordinating amongst each other on DRR-relevant issues within the same catchment areas which spread across multiple provinces. As an example, there were cases when downstream communes suffered from flooding which could only be mitigated upstream. Moreover, DRR coordination platforms such as the CP were not always in place or are dysfunctional and in need of reactivation. Further, many interviewees described a disconnect and a lack of communication between national and communal levels as a barrier, which applied to public administrative structures as well as to TFPs as summarised by the quote below:

> *"We see that there is a disconnection between the national level and the field, which is also the issue with the national platform and provincial platform and communal platform. […] So, whatever we do at national level should help you [in the field], but*

also you need to take it up, because sometimes [...] we are so disconnected from the field that we just maybe elaborate strategies [...] that are not relevant at all to the country."

- International partner

This barrier was partly said to be overcome through the intermediate provincial level and the use of focal points from TFPs and local NGOs on different levels that would coordinate amongst each other and facilitate vertical information flow.

5.2.7 Underlying conditions and dynamics shaping disaster risk

The interviewees described multiple conditions and processes that shape Burundi's vulnerability towards hazards and decrease its capacity to mainstream DRR in development planning. The identified barriers concerned demographic pressure, lack of risk-awareness, a disaster response focus, and certain attitudes, beliefs, norms, and power dynamics.

5.2.7.1 Demographic pressure

Rapid population growth was highlighted by many interviewees as another factor contributing to increased disaster risk as it increases exposure and vulnerability. Demographic pressure was related to aggravating scarcity of certain resources, for example, arable land as stated by an interviewee: *The population is increasing, but the land is not* (Communal expert). A local researcher explained that the persistent belief within Burundian culture that *if one has a lot of children, one is wealthy* may contribute to the trend.

Additionally, population growth was also said to be a driver for deforestation and migration. For example, that: *Before 1980, all the slopes were still covered. And since the Burundian population has doubled, this can be called the environmental crisis of Burundi* (Local researcher).

Interviewees stated that existing public infrastructures such as sewage systems, schools, health, and sanitation facilities had already surpassed their capacity to accommodate the rising population numbers. An international partner explained how a rapidly growing population puts pressure on the environment:

People have to feed themselves; they need to build houses and roads and the more people there are the more nature is exploited. We need firewood, so we clear the mountains. So, population growth puts terrible pressure on nature. All the elements of nature were normally there to allow a certain balance. So as soon as these elements of nature are disturbed, it means that the balance is no longer there. So, controlling population growth is the first thing we should do if we really want to prevent risks.

- International partner

Several interviewees however, also highlighted the potential of a growing population that would provide a large workforce. It was mentioned that Burundi had a tradition of regular communal work, which often engaged young adults in maintenance activities that at times benefitted DRR.

5.2.7.2 Lacking risk-awareness

Most interviewees emphasized that there was a general lack of risk awareness on all administrative levels on different aspects, which poses a significant barrier.

The general population was said to lack knowledge and awareness of cause-effect relationships between hazards and disaster impacts. The following anecdote was told during a participatory observation

illustrating the role of superstition in explaining hazards: Two parties were disputing about a contested piece of land. This conflict was to be mediated by a local tribunal. Before the court date a landslide severely damaged the piece of land, which was said to be caused by sorcery to stop the one party from winning the dispute.

Another mentioned example on the lack of awareness was that houses were constructed in an anarchical manner and in risk zones, ignoring any existing restrictions such as buffer zones. One interviewee claimed that this was also the case for intellectuals that were seen to build in a landslide zone having received mortgage approval from the bank. Moreover, people were reluctant to leave risk zones or use mitigation measures, prioritising the economic benefit over the danger, which is the case for fishermen living on the lake shore or farmers that oppose agroforestry saying it will reduce their cultivable space.

Figure 5: Agriculture on steep slopes (Own photo)

Additionally, a number of risk-increasing practices were listed, such as: wide-spread deforestation and slash-and-burn practices for field clearing that expose the ground to erosion, causing severe losses and impoverishment of soil. Similarly, monoculture farming and the lack of crop-rotation contributed to the loss of soil fertility. Moreover, farms were operated in high-risk areas such as on steep slopes (see Figure 5) or in buffer zones. Riverbanks and protective infrastructures were said to be susceptible to erosion due to the extraction of stones as construction materials from rivers and dams. Then the practice of digging irrigation canals directly from rivers to fields was said to increase flooding risk. These customs were also referred to as a lack of a *risk culture* as expressed in the quote below:

> *They say in the PCDC, we're going to build schools, we're going to build roads without thinking about DRR, [...] that's the element that's important here, it's the lack of risk culture. So, they say, there's no budget, there's no money, but they have a budget to build schools without thinking about DRR.*
>
> \- National government expert

Another aspect is that public decisionmakers and administrational staff across levels and sectors are often unaware of the importance of DRR mainstreaming or do not perceive it to be their responsibility

or relevant for their activities. Especially, sectors other than security, CCA, and environmental protection, do not necessarily perceive themselves in need of more risk information. Similarly, among international partner organisations or the private sector there is inconsistency about the understanding of DRR and the perception of relevance to own activities or their own responsibility. Frequently, related concepts such as environmental protection, natural resource management or CCA and mitigation were used by interviewees but not seen to be related to DRR.

5.2.7.3 Disaster response focus

Interviewees confirmed that DRR is not prioritised, and governmental structures are more geared towards emergency response than toward prevention, mitigation, preparedness, and long-term reduction of vulnerabilities in recovery. Yet, national response capacities are limited as national fire services are mostly inoperative. On the other side, the volunteer pool of the BRC was praised as a valuable resource to alert and respond to emergencies. Communal experts stated that much of the commune's budget was spent on disaster response, so at times other projects had to be interrupted: *If there is a possibility to prevent disasters, there are also more means to do the development* (Communal expert).

Interviewees said that humanitarian organisations were also too focused on emergency response, treating symptoms instead of targeting underlying causes to keep disasters from repeating themselves. In this context interviewees listed multiple issues concerning TFPs such as a lack of coordination between them, working in silos without considering the bigger picture, duplication of efforts, non-harmonised approaches, the use of different theoretical concepts and languages leading to confusion and fragmentation of actors. Moreover, the private sector was seen as naturally excluded, since the humanitarian system was designed to have their entry point with public structures. Nevertheless, current projects at the time of the interviews in Burundi included some private actors in an advisory board and capacity development initiatives. Another point that was highlighted is that international partner organisations were causing a brain drain since they, at times, offered higher salaries than governmental organisations making it more attractive to well-educated Burundians to work there. These hiring practices also have an ethnic component, which was observed in different conversations outside the interview setting, when it was mentioned that a certain ethnic group was predominant in international partner organisations, whereas the other group in public administrations. Moreover, participatory observations indicated that a superior expertise was often attributed to people with white skin colour, which were said to have more influence or gain better access to certain decision-makers.

5.2.7.4 Attitudes, norms, and power

Interviews and observations pinpointed barriers to mainstreaming DRR that are rooted in certain attitudes, beliefs, norms, and power dynamics that are likely related to the colonial and conflict history of the country. For TFPs it may be difficult to fully understand their working context and consider these factors in their programming.

In some interviews a passive attitude could be observed among communal experts perceiving themselves without agency and having to wait for a TFP to finance the implementation of PCDC projects. Similarly, several interviewees implied they were powerless towards disasters since it *was not possible to stop the rain from falling* (Communal expert). Furthermore, an international partner saw a lacking tradition of long-term planning as problematic. A communal expert expressed a general difficulty to plan ahead stating: *We live from day to day, we manage in the moment, without forecasting.*

Moreover, one communal expert reported that the intervention by international partners had caused controversy by unintentionally providing incentives to break the law e.g., offering financial compensation to those moving away from a risk zone, which in fact encouraged other people to settle

there. Additionally, some TFPs did not refer themselves to the PCDC for their development programmes or prded advice given by the commune as illustrated by the quote below:

> *I said: [...] You're going to flood people. They told me: 'Look, sir, we've got our work cut out for us.' So that's part of our flooding problem. [...] There are also other works that were done, but which could not be continued. [...] But according to what they say, the project phase ended just before they could find the finances to finish the project. [...] There are also those, perhaps, who are there just to use the financing of the European Union and others without taking into account the impact and the sustainability of the project [...]. There are times when the commune gives their opinion: 'Listen, this is what needs to be done'. But they are no longer there and say: 'We have our funding for our project, and we take the lead'. Because if people are flooded, they're gone and it's [...] [the commune's] job to manage that.*
>
> - Communal expert

Some interviewees referred to underlying issues disturbing the democratic process. For example, limited freedom to express opposing views with the possibility of prosecution and people being prioritised for certain positions in administrations according to their political affiliation. In this context the important influence of provincial and national politics on local decisions was underlined. Equally, global politics and donor priorities were said to have an influence on what investments were being prioritised. Moreover, the issue of corruption was brought up by one international expert, saying that much of the incoming finances in the country were being siphoned off by few people instead of benefitting larger society. Additionally, it was mentioned that women quotas in public bodies were undermined as explained below:

> *We put in a woman, for example, because we have to put in a woman, but we're looking for a stupid woman who isn't really going to be controversial, so we put in a woman to balance the gender. [...] Normally, the national constitution says [...] at least 30% must be women in the institutions. Even if it's a council, it's a state institution at the local level. [...] If there are female departures during the course of a mandate [...] We replace [them] with men. The number or percentage of staff is gradually decreasing. We are not strict about this. We've had experience since 2005, 2010, 2015 where we remain with 10, 15% women.*
>
> - Anonymised

A government expert during a participatory observation raised another issue that most likely had impactful consequences on shared values and attitudes among Burundians. In a discussion they were referring to an African country being *civilised* instead of *colonised* by a colonial power. This was then explained in relation to their university studies in Burundi where their teaching was based on books written during the colonial period where *whites* were claimed to be superior, and *blacks* described as a *primitive race that had to be civilised*. They then stated that there had been no critical examination of this content with students at the time. Furthermore, multiple discussions were witnessed by the researchers on which colonial power did a 'better job colonising' according to the infrastructures and systems that Burundians perceived to still be benefitting or suffering from.

6 Discussion

The findings chapter reveals that there are several institutional barriers, which need to be understood from a variety of dimensions (see Figure 6). Particularly, public-private-partnerships (PPP) present a missed opportunity in financing, and a continuous tension persists between legislation and enforcement. The mentioned institutional barriers can be found on different governance levels, are often intertwined, and at times reinforce each other or reveal new opportunities to integrate DRR into development plans. Finally, understanding these barriers requires an analysis of the underlying power dynamics among communes, external partners, and the government.

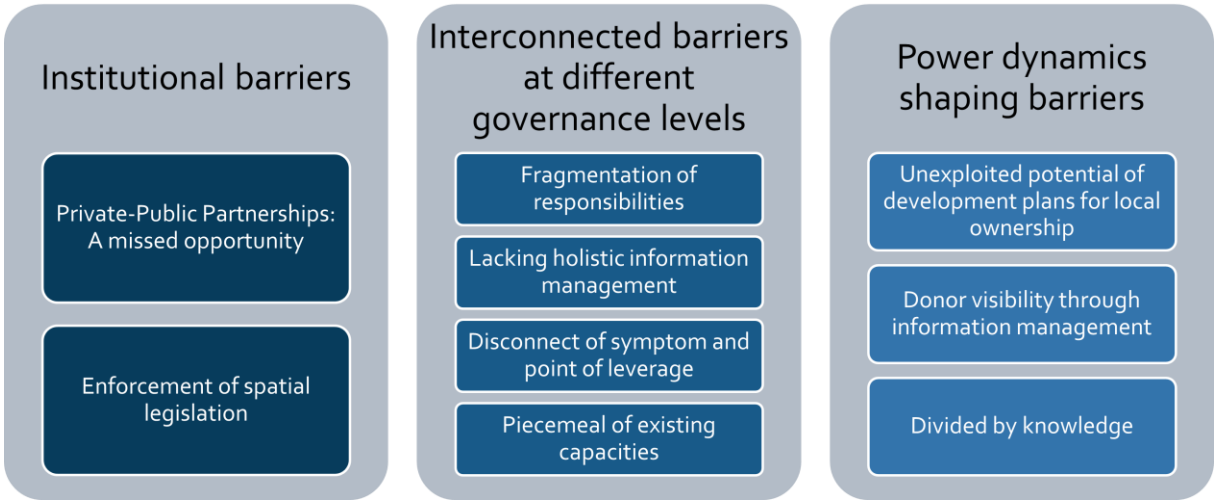

Figure 6: Overview of discussion points

6.1 Institutional barriers

6.1.1 Private-Public Partnerships: A missed opportunity

Despite the limitation that only two private companies could be interviewed literature and interviews suggest that the nascent inclusion of the private sector into DRR and development planning presents a missed opportunity for more sustainable business continuity practices and technical or financial support to communal development (UNDRR, 2019, p. 386). In general, potential for PPP in the international aid system remains underutilised and is hampered by numerous bureaucratic barriers (HLP, 2016, p. 12). However, according to UNDRR's *Global Assessment Report* (2019, pp. 352-353), some companies went "beyond social responsibility considerations recognizing DRR as a means to ensure competitiveness and business continuity in the event of a disaster" (UNDRR, 2019, pp. 352-353).

Interviewed companies did not see themselves to be directly involved in DRR, rather considering it to be the public sector's responsibility. Nevertheless, companies promoted some measures that could be seen as DRR but were not labelled as such. Additionally, awareness on commune side appeared limited how to find a common ground between public and business interests. However, the primary issue seemed to be how to market the PCDCs to relevant companies incentivising them to contribute with funding or expertise towards PCDC elaboration and implementation. Efforts were made by TFPs at the time to include some private companies into advisory or DRR capacity development initiatives. This could potentially be an entry point to further illustrate the stakes the private sector has in DRR and how to create win-win situations, widening the use of existing capacities.

6.1.2 Enforcement of spatial legislation

The Sendai Framework underlined risk-informed land use and urban planning as essential to avoid the "creation of new [risks] and to reduce existing disaster risk, and losses to lives and livelihoods, economic assets and damage to critical infrastructure" (Narang Suri et al., 2020, p. 10). It also emphasises the importance to 'build back better' and reduce existing vulnerabilities during disaster recovery. This was however, not mentioned as a possible opportunity by any of the interviewees. Regarding existing spatial planning practices, it is important that appropriate regulatory frameworks are in place that include DRR, but these are ineffective without proper enforcement. The findings showed that in Burundi's cities 'anarchical construction' and dwellings in risk zones are common, which exposes the population to hazards and limits access to basic services. This might stem from an absence of regular controls by the commune to enforce regulations requiring, for example, imposing fines or demolishing buildings. This also begs the question whether enforcement is more effective when penalising 'wrong' building practices or rewarding desired ones. During the study it was suggested that incentivising with financial rewards can have contradicting effects and attract more people into risk zones.

Besides lacking human and financial resources, it may be difficult to enforce spatial policies as the population concerned is often poor and lacks alternatives or means for relocation. It is suspected that either risk awareness is low or people in risk zones consider trade-offs and choose potential economic benefit over reducing their exposure to danger. Rigorous enforcement also has the potential to spark conflict, which could quickly reignite strife in a volatile post-conflict context as Burundi. Narang Suri et al. (2020, p. 70) state that planning had for long not been fit to build resilience and needed to be understood in context. Meaning that "traditional, strict, master-planning, with its rigid [...] rules and standards, has often undermined the principles of social and spatial justice instead of furthering them. Planning standards (and non-compliance with these) have regularly been used to evict those who fail to fit into policymakers' gleaming visions of worldclass cities, further weakening rather than building their resilience" (Narang Suri et al., 2020, p. 70). Regulation of settlements is highly complex, which demands a context-specific systems-approach involving a variety of stakeholders including the affected population, and considering DRR throughout the planning cycle, legislation, and financing (Narang Suri et al., 2020, p. 71). At the same time, one should not lose sight of the planning purpose of justice in social and spatial terms (Narang Suri et al., 2020, p. 71). The study is limited by its reliance on the accounts of interviewees and did not have the examination of legislation or enforcement mechanisms at its core.

6.2 Interconnected barriers at different governance levels

6.2.1 Fragmentation of responsibilities

The findings show that barriers ought to be seen in the context of a complex multi-stakeholder environment, where coordination is needed to achieve a common goal, dissolve working silos and overcome institutional fragmentation. This coordination needs to take place not only across vertical hierarchical levels but also horizontally between stakeholders and sectors and temporally between different planning stages (Wamsler, 2006, p. 169).

Consistent with the barriers described in literature, Burundi also shows signs of institutional fragmentation between DRR, CCA, and development as they are allocated under different ministries, which would lead to work in silos, duplication, and an overall ineffectiveness in the use of available resources (Chimhowu et al., 2019; Mitchell, 2010; Wamsler, 2006). Nevertheless, multiple coordination mechanisms and platforms have been created to facilitate better exchange on cross-cutting issues such

as DRR, e.g., the NP, including sectorial groups, and the DRR Working group among international partners. International TFPs had also recently started mapping their DRR activities determining 'Who does what where' in the country. The established risk governance structures on the communal, provincial, and national levels were said to ease progress in DRR, while moving from platform creation to operationalisation was slow-moving and difficult at times. To achieve permanently functioning platforms, it may be beneficial to focus particularly on maintaining the members' DRR knowledge and skills through regular meetings and activities.

6.2.2 Lacking holistic information management

According to the findings, information-related issues pose a major barrier that stretches over administrative levels, different sectors, and planning processes. A myriad of pieces arose, which do not fit into a coherent picture. Successful DRR mainstreaming requires adequate risk information (UNDRR, 2019, p. 373). Rather than only focusing on data quality, risk information also needs to be available, shared, accessible, disseminated, interpreted, and used appropriately. This implies high complexity concerning the information management barrier, especially when considered on the mentioned horizontal, vertical and temporal scales (Hewitt, 2013; UNDRR, 2019).

For example, TFPs have been engaged in Burundi for decades and different risk maps and assessments had been produced that could not be integrated due to the use of different map projections, methodologies, and definitions. Moreover, assembling and integrating already collected data still appears to be in its infancy and therefore specifically targeted by a DRR project in progress. The researchers experienced difficulties finding and accessing key documents such as the Practical Guide to Communal Planning, the PCDCs of specific communes as well as previous research related to mainstreaming CCA into development planning in Burundi. This illustrates that a harmonisation of approaches, standardisation of methods and definitions, and the centralisation of data also play a vital role besides appropriate funding, expertise, and technical equipment. Commune interviewees frequently stated that the solution to their information management issues laid in technical solutions such as computers and mapping programmes. However, regarding the complexity of the issues, it appears that there may be a primary need to establish structures and processes such as standardised filing, information and knowledge management systems that are adapted to the current context of paper-based data collection. These structures would need to be put in place within a commune but created in a way to enable cross-level exchange. If risk information is centralised on an open shared platform as currently developed by a TFP's initiative, technical and intellectual access as well as data maintenance will also need to be considered to ensure a lasting impact. The findings also showed a temporal disconnect, as information was not necessarily carried over to different project phases after their completion. To inform communal development planning and actively maintain risk information, the results of the participatory vulnerability and risk assessments produced at the time of the study in each commune could be of use. An update of these risk assessments before the next PCDC process could save time, resources and also be beneficial to raise risk awareness among communal stakeholders. This could be a low-cost measure as long as high-resolution risk information is not accessible in every commune of the country.

When Altay and Labonte (2014 pp. S52-S53) analysed impediments to information flows within humanitarian response they used the lens of understanding this setting as a complex system that evolves dynamically and where cause-effect relationships are often not linear, due to high interconnectivity between elements and the system environment. The system of analysis is defined with its components, boundaries, and interactions. This approach may also be beneficial to investigate and resolve institutional barriers such as the one concerning information management. Conceptualising it as a complex system can allow a more holistic viewpoint, considering information collection, quality,

availability, exchange et cetera, in relation to its influence from other barriers and underlying power imbalances across vertical, horizontal, and temporal scales.

6.2.3 Disconnect of symptom and point of leverage

Another important finding which advocates for a system-based approach is the difficulty to resolve certain barriers which may have their origin in one area or level but materialise in another. This demands an increased effort to coordinate between levels or create new coordination bodies. This barrier may be addressed through a lens of polycentric governance systems. These describe a governance system in which interaction between authorities from overlapping jurisdictions is used to negotiate certain rules for public purposes. Collective problems should hereby be approached using "existing system of public authorities, or they may establish a new governance unit" (McGinnis, 2011, p. 1). In other words, within federally organised systems different government levels and institutions have to coordinate beyond their jurisdiction horizontally and vertically to solve cross-cutting problems.

According to McGinnis (2011), these polycentric systems are inherently complex and come with their advantages and drawbacks. Their institutional diversity can be an asset whereas a "clear sense of the responsibilities and accountability of public officials" (McGinnis, 2011, p. 0) might be lacking. This could be exacerbated in Burundi due to a recent shift in roles and responsibilities: decentralisation reforms shifted more decision-making power towards communes and the UN DRR lead in the country had changed to another agency. Concretely, if communication within these systems is insufficient, problems arise, such as the mentioned problem of coordination among communes in the same catchment area. Here consequences could be mitigated through horizontal coordination across provincial boundaries in the same catchment, requiring arrangements to "fill the cracks that tend to open up along the borders" of the formal administrative system (McGinnis, 2011, p. 6). In this example, cross-boundary units may be suitable such as catchment committee (McGinnis, 2011). However, the creation of a new structure would increase transaction costs regarding the design, establishment, and maintenance of this new unit (McGinnis, 2011, p. 7).

There are limits to mainstreaming DRR through local development planning since school curriculums are determined at national level. This exemplifies the importance of vertical coordination to leverage DRR in education as a means to sensitise many people and possibly trigger generational change. Integrating DRR into curricula may require more than political will and expertise. It may present a problem of far greater complexity since, e.g., large teacher training initiatives would be necessary. A first step could be an exchange with countries with similar disaster exposure that have taken steps to advance their mainstreaming of DRR into education, as attempts to date seemed unsuccessful in Burundi.

For other locally restricted issues however, according to McGinnis (2011), it is important to keep the polycentric system functional to let the communes keep their problem-solving capacity, so that the communes fulfil their role in a decentralised federal system.

6.2.4 Piecemeal of existing capacities

Existing DRR capacities had already been mapped by Cadri in 2013, yet the analysis primarily focused on the national level (Cadri, 2013). The study showed that multiple capacities existed within different stakeholders and levels e.g., concerning means and competencies in data collection, sensitisation, disaster mitigation, and preparedness for response. Nevertheless, these capacities frequently appeared not to be recognised or utilised by communes and DRR actors. Hagelsteen & Becker's (2013) paper emphasizes the importance of making use of existing and contextualised capacities to achieve

sustainable change. One example is that within Burundian communes the tradition of 'communal work' exists, when community members come together once a week, for example to maintain public roads. This tradition of working together for the common good has potential to be leveraged for the implementation of low-cost mitigation measures that mostly require manual labour. Moreover, different NGOs and UN agencies use focal points on lower administrative levels to ease communication and coordination. These could fulfil multiple purposes if appropriately trained in DRR. Extensive expertise for sustainable agriculture practices could also be found within the private sector.
The findings showed that it was often not known among stakeholders which capacities existed or what skills or resources could be considered an asset for DRR. The study indicates that it may be beneficial to map capacities within existing formal and informal structures at provincial and communal level. Some capacities, such as communal work, are engrained into Burundian traditions and can present low-cost opportunities to strengthen DRR by 'bringing together the existing pieces'. Even though this process of mapping existing capacities may be tedious and time-consuming it could significantly improve efficiency, effectiveness, and the sustainability of the Burundian DRR system.

6.3 Power dynamics shaping barriers

The findings imply that there are power dynamics that underly, shape and reinforce most immediate barriers. There are multiple ways in which power influences DRR, particularly in conflict-affected contexts (Peters, 2019, p. 17). These power dynamics appear in donor-recipient relationships, concern the ability to attract funding through information management and determine whose knowledge is recognised and reproduced.

6.3.1 Unexploited potential of PCDCs for local ownership

The findings illustrated that the communes often depend on TFPs to finance their development plans since their budget does not cover most of the PCDC elaboration and project costs. Yet these partners were said to be unevenly distributed among communes. This might be related to certain localities being more accessible than others, PCDC projects not being aligned with the TFPs' mandate or TFPs simply being unaware of the PCDCs' existence or importance. These circumstances may result in the distortion of actual commune needs, as there is an incentive to tailor plans to fit the TFPs interests to attract their support. Furthermore, PCDCs possibly become toothless and irrelevant because urgent commune needs remain unaddressed. However, sustainable development requires strong local ownership of the development process (Thomas et al., 2011, pp. 23-24). The PCDC as the 'bible of the commune' are the guiding document for decision-making, which provides a vision to overcome any restraints and allocates funds for the development of each sector. This underlines the importance of this plan as an entry point for most TFP interventions to overcome tensions between donor-led and locally-led development. This issue may have to be addressed twofold. On the TFP side, firstly, it could be beneficial to increase efforts to refer themselves to the PCDCs and coordinate nationally and locally for a more equal coverage of the country according to the most urgent needs. Secondly, funding structures should be reviewed, so more unearmarked predictable and flexible financing is possible as promised by the Grand Bargain, which would allow better long-term planning of communes (Metcalfe-Hough et al., 2021, pp. 96, 100; Thomas et al., 2011, p. 18). On the communes' side it would be beneficial to increase the accessibility of the plans so they are better known among potential TFPs, can easily be found, and designed in a way that key information can easily be extracted. Overall, this could enhance the communes' ownership over their own development processes and help to better exploit the potential the PCDC holds as a decision-making tool. Nevertheless, to generalise to the entire country, it would be an asset to receive more insight into TFPs' criteria and decision-making process to select geographic areas and projects for intervention.

6.3.2 Donor visibility through information management

In donor-recipient relationships an unequal distribution of power becomes apparent, meaning that TFPs can determine the conditions under which aid will be provided. The Burundian economy relies heavily on external funding and expertise, so international aid plays an important role in "accelerating growth, development and poverty reduction" (Thomas et al., 2011, p. 20). Nevertheless, there are also negative consequences that may impact the "mobilisation of domestic resources […] [undercutting a] countr[y's] ability to chart [its] [...] own development strategies, which is what is needed if development is to really take root" (Thomas et al., 2011, pp. 16, 17).

The findings suggest that to date Burundi had not been reporting on the Sendai Framework, which may significantly reduce its visibility to international donors making investments less likely (Grydehøj & Kelman, 2020, p. 90). Burundi is at times even referred to as "aid orphan" in contrast to its neighbour Rwanda, the "aid darling" (Marysse, Ansoms, & Cassimon, 2007, p. 11). UNDRR confirmed that Rwanda has improved its risk information management and mainstreamed DRR across sectors and into development plans (UNDRR, 2018; 2019, pp. 327-328). According to Thomas et al. (2011, p. 28) the country's successful reporting has raised confidence in its "capability in spending aid money effectively, making spending transparent and accountable [which] has led many donors to increase their budget support". Although Rwanda still depends on international aid, it significantly reduced its dependency on it (Thomas et al., 2011, p. 19). In Burundi's case this could mean that addressing information-related barriers is of the utmost importance and could have far-reaching consequences for the country's funding for development. Nevertheless, it needs to be noted that there is also a political component in donor's historic preferential treatment of Rwanda (Marysse et al., 2007, p. 32). Further research may explore the correlation of advances in information management and the volume of investments in LDCs.

6.3.3 Divided by knowledge

Not only do international aid organisations control funding but they also have an influential role when exercising power through their hiring practices. This may interact with colonial artifacts embedded in Burundian culture possibly reinforcing existing inequalities and creating frictions. Historically, colonial powers favoured one ethnic group and discriminated against the other, leading to discrepancies in education levels between groups (Bigirimana, 2021, p. 221; Takeuchi, 2013, pp. 43-44). This aspect can shape a population's vulnerabilities and capacities in terms of who receives knowledge and what narrative is being told about the past (Jansen, 2019, p. 13). Against this context, aid organisations may aggravate tensions by predominantly recruiting from one ethnic group (Lemay-Hebert et al., 2020, p. 621). Moreover, recruiting well-educated Burundians at higher salaries than locally common may shift expertise, power, and agency away from public structures and cause an "internal brain drain" (Lemay-Hebert et al., 2020, p. 621). These power dynamics play an important role in development planning and create a complex dilemma in the context of Burundi's history of ethnic conflict. Furthermore, it may be difficult for organisations to consider the dimension of ethnicity and conflict in their practices and programming since these issues are commonly not publicly discussed, and most international staff do not speak the local language (Bigirimana, 2021, p. 219). On the other side, language can be barrier for Burundians with lower educational level to access positions in international partner organisations, where French and English are most spoken. This ties to the general limitation of people that only speak Kirundi to access a wide range of information through the internet and books if the content is in a foreign language and additionally content is known to often be blocked, censored or the needed technology is unavailable (Kalemera et al., 2016, p. 1).

Moreover, the colonial legacy which may still be found within the Burundian education system as suggested by the findings, could affect people's behaviours. At times some communal staff were observed to display attitudes of fatalism, inactivity, or the perception of powerlessness in reducing disaster risk and expressed the need for international partners' help. Schools and universities are places of knowledge production and distribution, and curricula determine what is being taught. Jansen (2019, p. 13) claims that "knowledge is never neutral. Who produces knowledge, what knowledge is produced and what knowledge is 'left out' matter and shape minds". Moreover "knowledge draws authority from power, which in turn legitimates itself through the authority of knowledge" (Jansen, 2019, p. 14). Therefore, it has been argued that curricula in former colonial territories may still contain knowledge that draws its authority from the West, which could propagate ideas of inequality between ethnicities or races that shape people's perception of their agency and capacities (Mbembe, 2015, p. 9). Socio-economic power and knowledge production are linked and need to both be decolonised (Jansen, 2019, p. 14; Mignolo, 2007, p. 451). Nevertheless, examining colonial influence on the research question is highly complex and beyond the scope of the study. Therefore, the importance of the influence of Burundi's conflict and colonial legacy can only be highlighted. Regarding this it could be recommended to strive for propagating DRR knowledge materials in Kirundi and to explore the option of training TFP staff in considering aspects of power imbalances and the ethnic conflict history in project programming.

7 Conclusion

The research question aimed to identify barriers and opportunities to mainstreaming DRR into communal development planning in Burundi. Based on a qualitative study of four especially disaster affected communes, it can be concluded that there are predominantly institutional barriers that impede risk-informed development. They can be clustered into the categories of legislation, finances, information, technology, knowledge and expertise, as well as underlying socio-political conditions and dynamics increasing vulnerabilities to disasters.

A qualitative approach applying mixed methods consisting of key informant interviews, document analysis, participatory observation, and a literature review provided reliable results through the triangulation of different sources. The direct barriers to DRR mainstreaming found in scientific literature contained the institutional and practitioner divide between DRR, CCA and development as well as insufficient funding and information management. These were confirmed within this case study. Additional barriers could be identified, particularly concerning complexity and underlying power dynamics, which were then analysed together with the barriers identified in literature.

The analysis found that barrier categories are closely interlinked and influence each other in a complex network. To resolve them, it is generally necessary to understand that barriers appear horizontally, vertically, and temporally within a governance system, causing disrupted communication, work in parallel silos or planning phases which do not inform each other. Some institutional barriers create fairly immediate effects, such as lacking risk information or mitigation measures whereas others are more subtle and difficult to grasp. These underlying circumstances and dynamics such as unmet basic needs, lacking risk awareness, aid dependency and unequal power distribution intrinsically erode Burundi's capacity to mainstream DRR. Many opportunities to improve mainstreaming or use existing capacities could be highlighted. However, these are scattered between different sectors, actors and levels and are not always seen to be connected to DRR.

This study aimed to provide a comprehensive overview of the institutional barriers and opportunities that can be found when mainstreaming DRR into communal development planning in LDCs. This could enrich research being conducted in other countries that share similar traits as Burundi. The research may serve for any further projects that seek to strengthen DRR integration academically or practically into local long-term strategic planning. It indicates what may need to be considered to achieve a sustainable and independent DRR system by local authorities to reduce the risk of recurring impactful disasters. Since one of the main goals of the Sendai Framework is the understanding of risk and its integration into national and local development, this study contributes to this objective, especially concerning LDCs.

To better understand the implications of the findings on the administrative system, future research should take a system-based approach, which may be best suited to analyse the complexity and dependencies between the barriers. Furthermore, the following recommendations should be considered to advance mainstreaming DRR into communal development planning in Burundi and comparable cases:

Recommendations

Increasing (communal) development funding and expertise	• Train communal staff on how to promote PCDC projects to private investors illustrating mutual benefits when investing in communal development.
	• Raise private companies' awareness of DRR benefits to ensure competitiveness and business continuity to incentivise investments.
	• Increase public and international organisations' efforts to include private companies in discussion and coordination forums when planning for DRR.
	• Encourage TFPs to refer to PCDCs when planning projects.
	• Train TFPs' staff in considering aspects of power imbalances and ethnic conflict in project programming.
	• Increase flexible, non-earmarked funding offered by TFPs to communes.
	• Ensure equitable and needs-based geographic distribution of TFPs.
Improving integration of DRR in existing processes and structures	• Include a risk assessment as part of the formal PCDC elaboration process. For example, update the existing participatory vulnerability and risk assessments for each commune before the development of the new PCDC.
	• Review and adapt the climate proofing methodology (GIZ, 2010) to include DRR aspects.
	• Maintain provincial and communal DRR platform members' knowledge and skills. For example, through regular meetings, networking, and experience exchanges between DRR platforms.
	• Continue coordination efforts to integrate DRR, CCA and (urban) development within the government and TFPs through working groups and joint strategies.
	• Establish cross-boundary exchange forums with clearly established roles and responsibilities to coordinate activities within a water catchment area for example.
	• Identify and understand existing DRR-related capacities within formal and informal structures at provincial and communal levels such as NGO and UN focal points. Focal points on lower administrative levels are used to facilitate coordination between levels. These positions could fulfil multiple purposes if appropriately trained in DRR.
	• Identify DRR mainstreaming opportunities in spatial and urban planning legislation and ensure sustainable enforcement.
	• Review the established roadmap by the Ministry of Education on mainstreaming DRR into the national curriculum (2013-2015). Identify successful strategies from other similar countries.

Improving multi-level risk information management	• Continue efforts to create a centralised risk information sharing platform where data is collected, whose utility and viability were assessed.
	  ○ Include public documents such as all PCDCs, the Practical Guide to Communal Planning and country-specific reports and studies on DRR.
	  ○ Design a maintenance plan for the platform and information.
	  ○ Develop a plan to facilitate public access and awareness of the portal.

	• Develop information sharing protocols within communal administrations assessing who needs what information for what purpose and which data is already being collected.
	• Develop standardised filing, information and knowledge management systems in communal administrations that accommodate both paper-based and digital data collection and storage.
	• Increase TFP support to the government in reporting progress on the Sendai Framework.
	• Produce and distribute DRR knowledge materials in Kirundi for schools, the public, media outlets and research institutions.

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9 ANNEX

- Annex 1: Selection approach for the four case studies
- Annex 2: Interview guide for communal experts
- Annex 3: Interview guide for national level and partner organisation experts

Annex 1: Selection approach for the four case studies

The following approach has been used to determine the case communes of Mutimbuzi (Bujumbura (BJM) rural), Ntahangwa (BJM Municipality), Musongati (Rutana), Rumonge (Rumonge):

After consulting with IOM colleagues on suitable approaches, the following data has been collected and put it into a table containing all provinces and communes:

- Number of people affected by natural hazards by province 2018-2020 (in 4 thresholds – in absolute values): https://displacement.iom.int/system/tdf/reports/Natural_disasters_dashboard_2018_2019_dec2020.pdf?file=1&type=node&id=10565)
- Number of displaced people by province of origin in 2020 for the months of Feb (March was not available), June, September, December (in 4 thresholds – in absolute values: e.g., https://dtm.iom.int/reports/burundi-%E2%80%94-internal-displacement-dashboard-february-2020
- Number of displaced persons in relative values, calculated with numbers of the month of December and the total population number. This was done to verify, whether the absolute values were roughly equivalent to the relative values, meaning that most affected provinces were identified by both absolute and relative terms: http://www.statoids.com/ubi.html
- So-called 'hotspot areas', which the focus for the IOM DRR project: Email Consortium: Targeting areas for detailed mapping (08/02/21)
- Existence of Communal Platforms: Document 'Communal Platforms - Updated list of Communal Platforms for Risk Prevention and Disaster Management' received by IOM on 29/01/2021
- Commune progress in DRR / Risk Information, sources:
    - IOM: Communal Platforms
    - GIZ: Participatory methodological workshop to start the multi-hazard mapping of Burundi
    - GIZ: Integrated Vulnerability Analysis in Burundi Vol 2
    - PURI: Elaboration of Disaster Risk Mapping and simulation exercises in five communes of Bujumbura Mairie and Bujumbura rural - Final report
- Multi-hazard map of natural hazards, communes more than 57% of the Estimated Average Hazard Index: Annex 3_Carte Preliminaire des zones a risques.jpg, received by IOM 09/02/2021
- Accessibility for the researchers in terms of safety: Road map safety instructions, Updated June 2019-1.jpg, received by IOM OSS on 08/02/2021

The selection process was as follows:

1. A list of all communes was made, excluding those with limited access for safety reasons
2. Excluding the communes without a communal platform since an existing platform was interpreted as a minimum of DRR institutionalisation and an increased chance of advancing DRR sustainably
3. Provinces were excluded with fewer than 5,000 people affected (in absolute terms) by natural disasters during the years 2018-2020
4. Provinces were excluded with fewer than 8,000 people displaced from their province of origin in the last year (February, June, September, December 2020)

5. Consulting the consultants' (employed by IOM) "Preliminary Risk Areas" map and selected communes with an index of over 57% (the 3 highest categories)
6. Excluding provinces with less than 8,000 displaced in six months resulting in communes in 4 provinces (BJM Mairie, BJM rural, Cibitoke, Rumonge)
7. Then consultants' hazard compilation table was consulted along with the hotspots selection to see which communes in these provinces had the highest number of people affected by the main natural hazards. These were the communes of Mutimbuzi (BJM rural), Ntahangwa (BJM Mairie, hotspot), Rugombo (Cibitoke, hotspot), Rumonge (Rumonge).
8. After confirmation with IOM, the communes were contacted. It was not possible to reach Rugombo (Cibitoke). As a substitute it was decided based on expert consultations with IOM colleagues to additionally include the province of Rutana. Rutana is among the most disaster affected provinces and adds another geographical location further away from Lake Tanganyika. The commune of Musongati was then decided to be included as being among the most affected in the communes in the province of Rutana.

Annex 2: Interview guide for communal experts

Date // *Date*		Heure // *Time*		Lieu // *Place*	
Personne interviewée // *Interviewee*		Commune / Organisation / Secteur // *Commune / Organisation / Sector*		Fonction // *Function*	
Téléphone // *Phone number*		Adresse e-mail // *Email*		Interviewé par // *Interviewed by*	

Note : Ce guide d'entretien a pour but de soutenir la collecte de données avec la méthode des entretiens semi-structurés. Il peut être utilisé en tout ou en partie et les questions ne doivent pas être posées dans un ordre précis. Les questions peuvent être adaptées en fonction de la conversation respective.

***Note**: This interview guide is intended to support data collection using a semi-structured interview method. It can be used in whole or in parts and the questions do not have to be asked in a specific order. The questions can be adapted to the respective circumstances.*

Objectif : Cette série d'entretiens vise à donner un aperçu de l'état de l'intégration de la réduction des risques de catastrophes (RRC) dans les processus de planification communale au Burundi. Pour ce faire, l'intégration systématique des informations sur les risques obtenus à partir de différentes évaluations des risques dans la planification du développement est étudiée en mettant l'accent sur les secteurs de l'agriculture et de l'éducation. En outre, les causes communes, les effets du manque d'intégration ainsi que les obstacles et les solutions à l'intégration des informations sur les risques doivent être étudiés.

***Objective**: This interviews series aims to provide an overview of the status of the integration of disaster risk reduction (DRR) into communal planning processes in Burundi. To this end, the systematic integration of risk information obtained from different risk assessments into development planning is explored with a focus on the agriculture and education sectors. In addition, common causes, and the effects of the lack of integration as well as obstacles and solutions to the integration of risk information investigated.*

Introduction / *Introduction*
• Merci pour votre disponibilité // *Thank you for your availability* • L'enquêteur se présente // *The interviewer introduces themself* • La durée sera de 30 à 60 minutes // *The duration will be 30 to 60 minutes* • Bref rappel du contexte et de l'objectif de l'entretien : Mémoire sur l'intégration de la réduction des risques de catastrophes dans la planification du développement communal au Burundi, dans le cadre d'un projet national de réduction des risques de catastrophes de l'OIM. // *Brief background and purpose of interview: Master Thesis on integrating disaster risk reduction into communal development planning in Burundi, supporting IOM's nation-wide disaster risk reduction project.* • Rappel que la participation est volontaire et il n'y a pas de compensation // *Reminder that the participation is voluntary and there is no compensation* • *Votre nom ne sera pas mentionné dans le mémoire* // *Your name will not be mentioned in the thesis* • Demander la permission pour l'enregistrement d'entretien. L'audio ne sera utilisé que par les deux consultantes chercheuses pour l'analyse et ne sera pas partagé. // *Ask permission for the interview to be recorded. The audio will only be used by the two research consultants for analysis and will not be shared.* • Nous allons créer des protocoles d'entretien à partir de cela. Ensuite, nous analyserons les réponses. // *We will create interview protocols from this. Then we will analyse the responses.* • Structure de l'entretien en blocs thématiques : Informations générales, catastrophes, évaluation de risque, Plan Communal du Développement Communautaire (PCDC). Si une question n'est pas pertinente pour vous, il ne faut pas la répondre. // *Structure of the interview in thematic blocks: general information, disasters, risk assessments, Communal Development Plan (PCDC). If a question is not relevant to you, you do not have to answer it.*

Sujet général // ***General topic***	**Questions** // ***Questions***
Généralités // ***General information***	1. Pourriez-vous décrire votre rôle dans votre commune/ organisation/ secteur // *Please describe your role in your commune / organisation / sector* 2. Pourriez-vous décrire les principales activités de votre organisation/ secteur // *Please describe the main activities of your organisation / sector* 3. Quel est votre rôle en ce qui concerne la gestion des risques de catastrophes ? // *What is your role in disaster risk management?* 4. Avez-vous participé à l'élaboration de Plan Communal du Développement Communautaire (PCDC) ou du Plan Annuel d'Investissement (PAI)? // *Have you participated in the development of the Communal Community Development Plan (PCDC) or the Annual Investment Plan (PAI)?*
Catastrophes // ***Disasters***	5. Quels sont les aléas/ risques/ catastrophes qui menacent votre commune/ organisation/ secteur ? o Quelle est la fréquence de ces catastrophes ? o À quel moment de l'année ces catastrophes se produisent ? // *What hazards/ risks/ disasters threaten your commune/ organisation/ sector?* o *How often do these disasters occur?* o *At what time of the year do these disasters occur?* 6. Qui ou quoi est plus affecté? (Par rapport au Secteur ou aux personnes) // *Who or what is most affected? (In relation to the Sector or group of people)* 7. Quelles sont les conséquences négatives dans votre commune/ organisation/ secteur causées par des catastrophes ? // *What are the negative consequences in your commune / organisation / sector caused by disasters?*

	8. Selon vous, qu'est-ce qu'on peut faire pour réduire les dommages et le nombre de personnes touchées par les catastrophes ? // *What do you think could be done to reduce the damage and the number of people affected by disasters?*
Évaluation des risques // ***Risk assessments***	9. Qu'est ce qui est une 'évaluation de risque' pour vous ? // *What is a 'risk assessment' to you?* 10. Selon vous, pourquoi on évalue les risques ? // *Why do you think risks are assessed?* 11. Recevez-vous des informations d'une telle évaluation ? (Rappel : Informations de risque peuvent être par exemple carte de risque, prévisions climatiques, aléas prédominants, groupes vulnérables ...) o Elles viennent d'où ? // *Do you receive information from such an assessment? (Reminder: Risk information could be e.g., risk maps, climate forecasts, predominant hazards, vulnerable groups...)* o *Where do they come from?* 12. Selon vous, comment les informations de risque pourriez-vous aider dans votre travail ? // *How do you think risk information could help you in your work?*
PCDC	13. Connaissez-vous le PCDC et savez-vous à quoi il sert ? *(Si réponse est non, continue avec 18)* // *Are you familiar with the PCDC and what it is used for? (If no, continue with 18)* 14. Pensez-vous que le PCDC peut contribuer à réduire les conséquences négatives des catastrophes pour votre commune/ organisation/ secteur ?

(Plan Communal de Développement Communautaire) // ***(Communal Development Plan)*** **PAI** **(Plan Communal d'Investissement Annuel)** // ***(Communal Annual Investment Plan)***	// *Do you think that the PCDC can contribute to reducing the negative consequences of disasters for your commune/ organisation/ sector?* 15. Selon vous, est-ce qu'on utilise l'information sur les risques des catastrophes dans l'élaboration de PCDC/ PAI / les axes stratégiques de PCDC? // *In your opinion, is disaster risk information being used in the development of the PCDC / PAI / the strategic axes of the PCDC?* 16. Quelle était la raison pour l'intégration de l'axe stratégique 4 (Environnement, Changement Climatique) dans le nouveau PCDC? // *What was the rationale for integrating Strategic Axis 4 (Environment, Climate Change) into the new PCDC?* 17. Au cours de la dernière période du PCDC d'après votre estimation, combien de pour cent des objectifs ont été atteints ? o environ 25%, 50% ■ Quelles ont été les difficultés pour les mettre en œuvre ? (Si réponse de 17. est entre environ 25-50%, répondez ici) // *In the last PCDC period, how many percent of the objectives were achieved, according to your estimate?* o *about 25%, 50%* ▪ *What were the difficulties in implementing them?* *(If answer of 17. is between 25-50%, answer here)* o environ 75%, 100% ■ Quels étaient les facteurs de succès pour les mettre en œuvre ? (Si réponse de 17. est entre environ 75-100%, répondez ici) o *About 75%, 100%* ▪ *What were the success factors for implementing them?*

	(If answer of 17. is between 75-100%, answer here) 18. Qui concrètement pourrait être un partenaire pour le financement des projets du PCDC ? (National, acteurs privés) // *Who concretely could be a partner in financing PCDC projects? (National, private actors)*
Aménagement du Territoire // ***Land Use Planning***	19. Est-ce qu'il y a des zones où les constructions sont interdites à cause du risque de catastrophes ? // *Are there any areas where construction is prohibited because of the disaster risk?* 20. Est-ce qu'il y a des réglementations qui définissent comment la construction doit être faite ? // *Are there any regulations that define how the construction should be done?* 21. Si oui, comment sont-ils mis en œuvre ? Sont-ils efficaces en réduisant le risque de catastrophe ? // *If so, how are they implemented? Are they effective in reducing disaster risk?*
	Les informations sur les risques peuvent être très utiles pour aider à se préparer ou à prévenir les conséquences négatives d'une catastrophe. Mais il peut y avoir des problèmes, de sorte que les informations recueillies ne sont pas suffisamment pertinentes ou qu'il est difficile de les accéder ou de les utiliser. // *Risk information can be very useful in helping to prepare for or prevent the negative consequences of a disaster. But there may be problems, so that the information collected is not sufficiently relevant or is difficult to access or use.*
Solutions // ***Solutions***	22. À votre avis, qu'est-ce qu'on peut faire pour améliorer la collecte et l'utilisation des informations des risques au Burundi ? Par exemple en termes de : o cadre légal o personnel o connaissances et entraînement o finances o format, accès, pertinence de l'information des risques

	// *In your opinion, what can be done to improve the collection and use of risk information in Burundi?* *for example, in terms of:* o *legal framework* o *personnel* o *knowledge and training* o *finances* o *format, access, relevance of risk information*
Fin de l'entretien // ***End of the interview***	23. En quelques mots : Quelles sont les principaux avantages d'inclure le RRC dans les secteurs de l'agriculture et de l'éducation de la planification du développement ? // *In a few words: What are the main benefits of including DRR in the agriculture and education sectors of development planning?*
	● Merci pour votre participation // *Thank you for your participation* ● Nous allons créer des protocoles d'entretien à partir de cela. Si vous souhaitez que nous vous envoyions le résumé, veuillez contacter notre adresse électronique dans les deux prochains jours. // *We will create interview protocols from this. If you would like us to send you the transcript, please contact our email address within the next two days.* ● Donner nos informations de contacte // *Give our contact information*

Annex 3: Interview guide for national level and partner organisation experts

Date // *Date*		Heure // *Time*		Lieu // *Place*	
Personne interviewée // *Interviewee*		Commune / Organisation / Secteur // *Commune / Organisation / Sector*		Fonction // *Function*	
Téléphone // *Phone number*		Adresse e-mail // *Email*		Interviewé par // *Interviewed by*	

Note : Ce guide d'entretien a pour but de soutenir la collecte de données avec la méthode des entretiens semi-structurés. Il peut être utilisé en tout ou en partie et les questions ne doivent pas être posées dans un ordre précis. Les questions peuvent être adaptées en fonction de la conversation respective.

***Note**: This interview guide is intended to support data collection using a semi-structured interview method. It can be used in whole or in parts and the questions do not have to be asked in a specific order. The questions can be adapted to the respective circumstances.*

Objectif : Cette série d'entretiens vise à donner un aperçu de l'état de l'intégration de la réduction des risques de catastrophes (RRC) dans les processus de planification communale au Burundi. Pour ce faire, l'intégration systématique des informations sur les risques obtenus à partir de différentes évaluations des risques dans la planification du développement est étudiée en mettant l'accent sur les secteurs de l'agriculture et de l'éducation. En outre, les causes communes, les effets du manque d'intégration ainsi que les obstacles et les solutions à l'intégration des informations sur les risques doivent être étudiés.

***Objective**: This interviews series aims to provide an overview of the status of the integration of disaster risk reduction (DRR) into communal planning processes in Burundi. To this end, the systematic integration of risk information obtained from different risk assessments into development planning is explored with a focus on the agriculture and education sectors. In addition, common causes, and the effects of the lack of integration as well as obstacles and solutions to the integration of risk information investigated.*

Sujet general // ***General topic***	**Questions** // ***Questions***
Généralités // ***General information***	1. Pourriez-vous décrire votre rôle dans votre institution/ organisation // *Please describe your role in your institution / organisation* 2. Pourriez-vous décrire les principales activités de votre institution/ organisation au Burundi // *Please describe the main activities of your institution / organisation in Burundi* 3. Quel est votre rôle en ce qui concerne la Réduction des Risques de Catastrophes (RRC) ? // *What is your role in disaster risk reduction?* 4. Est-ce que vous êtes engagé dans une des communes de Mutimbuzi, Ntahangwa, Rumonge ou Musongati (en matière de RRC) ? // *Are you engaged in any of the communes of Mutimbuzi, Ntahangwa, Rumonge or Musongati (in DRR)?* 5. Connaissez-vous les PCDCs et savez-vous à quoi ils servent ? // *Do you know what PCDCs are and what they are used for?*
Catastrophes // ***Disasters***	6. La Réduction des Risques des Catastrophes, qu'est-ce que ça veut dire ? // *What does Disaster Risk Reduction mean?* 7. Selon vous, qui est responsable pour la Réduction des Risques des Catastrophes (au Burundi) ? // *Who do you think is responsible for Disaster Risk Reduction (in Burundi)?* 8. Quels sont les principaux aléas avec lesquels vous travaillez ? // *What are the main hazards you are working with?* 9. Quels sont les liens entre les risques des catastrophes et la sécurité alimentaire au Burundi ? // *What are the links between disaster risk and food security in Burundi?* 10. D'après vous quels sont les impacts principaux des catastrophes… o sur l'agriculture?

	o sur l'éducation? // *What do you think are the main impacts of disasters...* o *on agriculture?* o *on education?* 11. Concernant la prévention, l'atténuation (mitigation), la préparation à la réponse et la réponse, quelles activités sont priorisées au Burundi ? // *With regard to prevention, mitigation, preparedness for response and response, what activities are prioritised in Burundi?* 12. Quels sont les facteurs de réussite pour adopter une attitude plus proactive face aux catastrophes ? C'est-à-dire se concentrer sur la réduction des vulnérabilités et l'augmentation des capacités pour prévenir et atténuer les catastrophes. // *What are the success factors for adopting a more proactive approach to disasters? This means focusing on reducing vulnerabilities and increasing capacities to prevent and mitigate disasters.* 13. Connaissez-vous le Cadre de Sendai ? // *Do you know the Sendai Framework for Action?* 14. Quels actions pratiques/efforts sont menées pour la mise en œuvre de Cadre Sendai au Burundi ? // *What practical actions/efforts are being undertaken for the implementation of the Sendai Framework in Burundi?* 15. Quelles sont les difficultés pour la mise en œuvre du Cadre Sendai au Burundi ? // *What are the challenges for the implementation of the Sendai Framework in Burundi?* 16. Comment voyez-vous la relation entre la Réduction de Risque de Catastrophes (RRC) et l'Adaptation au Changement Climatique (ACC)? o Pratiquement comment liez-vous la RRC et l'ACC dans vos projets au Burundi ? // *How do you see the relationship between Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA)?* o *In practice, how do you link DRR and CCA in your projects in Burundi?* 17. Quels sont les mécanismes ou outils pour éviter la duplication entre les acteurs de la RRC au Burundi ? // *What are the mechanisms or tools to avoid duplication between DRR actors in Burundi?*

	18. Comment voyez-vous la relation entre la RRC et la croissance démographique ? // *How do you see the relationship between DRR and population growth?*
Évaluation des risques // ***Risk assessments***	19. Qu'est ce qui est une 'évaluation de risque' pour vous ? // *What is a 'risk assessment' to you?* 20. Selon vous, pourquoi on évalue les risques ? // *Why do you think risks are assessed?* 21. Comment est-ce que les informations de risques peuvent être catégorisées ? // *How can risk information be categorised?* 22. Quelles sont les activités principales à l'évaluation de risque au Burundi maintenant ? (Prévisionniste, avant la catastrophe se produit) o Quels sont leurs buts ? // *What are the main risk assessment activities in Burundi at the moment? (Anticipatory, before the disaster occurs)* o *What are their goals?* 23. Est-ce que vous recevez des informations de risque, qui vous pouvez utiliser pour votre planification du long terme (pour plusieurs années) ? o Lesquelles ? Elles viennent d'où ? o Est-ce que ces informations sont disponibles pour les administrations communales ? // *Do you receive risk information, which you can use for your long-term planning (for several years)?* o *Which ones? Where do they come from?* o *Is this information available to the local authorities?*

	24. Quels sont les obstacles à la collecte et à l'utilisation des informations sur les risques au Burundi en termes de STAPLEE ? o Social (Culturel) o Technique o Administratif o Politique o Légal o Economique o Environnemental // *What are the barriers to collecting and using risk information in Burundi in terms of STAPLEE?* o *Social (Cultural)* o *Technical* o *Administrative* o *Political* o *Legal* o *Economic* o *Environmental* 25. Concernant les efforts de RRC déployés par les organisations extérieures au Burundi, quels sont les principaux facteurs à prendre en compte pour avoir un impact positif durable ? // *With regard to DRR efforts by external organisations in Burundi, what are the main factors that need to be taken into account in order to have a sustainable positive impact?*
Agriculture // ***Agriculture***	26. Quels sont les impacts spécifiques des catastrophes sur l'agriculture au Burundi ? Par exemple par rapport à/au : o sol o productivité des champs

	o irrigation et drainage des champs o transport o stockage // *What are the specific impacts of disasters on agriculture in Burundi? For example, in relation to* o *soil* o *field productivity* o *irrigation and field drainage* o *transport* o *storage* 27. Quelles sont les cultures agricoles les plus affectées par les catastrophes ? // *Which agricultural crops are most affected by disasters?* 28. Selon vous quelles sont les pratiques agricoles qui augmentent les risques des catastrophes ? // *What agricultural practices do you think increase the risk of disasters?* 29. Selon vous, quelles pratiques/ techniques agricoles peuvent prévenir ou diminuer ces impacts ? o Quelles parties prenantes peuvent avoir une influence positive pour réaliser ou vulgariser ces pratiques ? // *In your opinion, what agricultural practices/techniques can prevent or reduce these impacts?* o *Which stakeholders can have a positive influence on achieving or popularising these practices?* 30. Selon vous, quels sont les défis pour réaliser ou vulgariser ces pratiques ? // *What do you see as challenges in familiarising people with these practices and implementing them?* 31. Quelle est la signification des Plans Communaux de développement communautaire (PCDC) pour le secteur de l'agriculture ? // *What is the relevance of the Communal Development Plans (PCDCs) to the agriculture sector?*

Éducation // ***Education***	32. Quels sont les impacts spécifiques des catastrophes sur l'éducation ? Par exemple par rapport à: o accès des écoles et infrastructures scolaires o déroulement des cours o santé/nutrition des enfants // *What are the specific impacts of disasters on education? For example, in relation to:* o *access to schools and school infrastructure* o *conduct of classes* o *health/nutrition of children* 33. Selon vous, comment est-ce que l'éducation peut contribuer à diminuer les impacts de catastrophes ? (Par exemple : sensibilisation sur les amplificateurs de risques, connaissances sur réponses, mesures d'atténuation) // *In your opinion, how can education contribute to reducing the impacts of disasters (e.g., sensitisation about risk amplifiers, knowledge of response or mitigation measures)?* 34. Est-ce qu'il a déjà des éléments dans le programme scolaire qui concerne la réduction des risques ? // *Are there already elements in the school curriculum that deal with disaster risk reduction?* 35. Quel est l'importance des Plan Communaux de développement communautaire (PCDC) pour le secteur de l'éducation ? // *What is the relevance of the Communal Development Plans (PCDCs) to the education sector?* 36. Est-ce que vous faites des évaluations de risques de catastrophes pour le secteur de l'éducation ? // *Do you conduct disaster risk assessments for the education sector?* 37. Comment est-ce qu'on peut utiliser les informations des évaluations des risques pour la planification du secteur de l'éducation ? // *How can information from risk assessments be used for the planning of the education sector?*
Secteur privé	38. Quels sont les impacts spécifiques des catastrophes sur votre organisation ? Par exemple par rapport à/au :

// Private sector	○ production agricole (productivité, irrigation et drainage des champ) ○ transport ○ obtention ○ stockage ○ revenue ○ clients, partenaires ○ l'assurance ○ … // *What are the specific impacts of disasters on your organisation? For example, in relation to* ○ *agricultural production (productivity, irrigation, and field drainage)* ○ *transport* ○ *procurement* ○ *storage* ○ *revenue* ○ *customers, partners* ○ *insurance* ○ *…* 39. Comment voyez-vous la durabilité des activités de l'entreprise face au changement climatique ? // *How do you see the sustainability of the company's activities with regard to climate change?* 40. Vous utilisez quels outils pour la gestion de la continuité des activités d'entreprise (Anglais : Business continuity) ? // *Which tools do you use for business continuity management?* 41. Voyez-vous un lien entre la gestion de la continuité des activités d'entreprise et la RRC ? // *Do you see a link between business continuity management and DRR?* 42. Est-ce qu'il y a des informations sur les risques des catastrophes qui peuvent vous aider dans votre planification ? // *Is there any information on disaster risk that can help you in your planning?* 43. Comment voyez-vous la connexion entre la RRC, la productivité et la pérennité/ développement durable de l'agriculture ?

// *How do you see the connection between DRR, productivity and sustainability of agriculture?*

44. Est-ce que vous avez une stratégie/ budget pour la Responsabilité Sociétale des Entreprises (RSE) ? (Anglais : Corporate Social Responsibility)
    - Quelles activités et projets sont soutenus ?

// *Do you have a strategy/budget for Corporate Social Responsibility (CSR)?*

- *What activities and projects are supported?*

45. Avez-vous été un partenaire technique ou financier des PCDCs d'une commune dans le passé ?
    - Si oui,
        1. De quelle manière ?
        2. Quelles étaient vos expériences comme partenaire de PCDC ?
        3. Quels sont les avantages de faire partie d'un PCDC ?
        4. Est-ce que vous voulez être à nouveau engagé dans un PCDC ?
    - Si non,
        1. Voyez-vous un intérêt de s'engager dans un PCDC ?
        2. Anticipez-vous de vous engager dans des PCDCs dans l'avenir ? De quelle manière ? (Financier/technique ?)

// *Have you been a technical or financial partner of a commune's PCDCs in the past?*

- *If yes,*
    1. *In what way?*
    2. *What were your experiences as a PCDC partner?*
    3. *What are the benefits of being part of a PCDC?*
    4. *Would you like to again be involved in a PCDC?*
- *If no,*
    1. *Do you see any benefits of becoming involved in a PCDC?*
    2. *Do you anticipate being involved in PCDCs in the future? In what way? (Financially/technically?)*

PCDC / Planification du Développement // ***Development Planning***	46. Comment pensez- vous que le PCDC peut contribuer à réduire les catastrophes dans les secteurs d'une commune ? // *How do you think a PCDC can contribute to reduce the risk of disasters in the sectors of a commune?* 47. Est-ce qu'une évaluation des risques fait partie de processus de l'élaboration de PCDC ? ○ Si non, est-ce qu'on utilise l'information sur les risques des catastrophes dans l'élaboration de PCDC ? D'où viennent-elles ? // *Is a risk assessment part of the PCDC elaboration process?* ○ *If not, is disaster risk information used in the elaboration of the PCDCs? Where does it come from?* 48. Pourriez-vous décrire le processus de l'élaboration des PCDCs ? // *Could you describe the elaboration process of the PCDCs?* 49. Le PCDC est basé sur quelles données ? // *What data is the PCDC based on?* 50. Qui détermine les axes stratégiques d'un PCDC ? // *Who determines the strategic axes of a PCDC?* 51. Qu'est-ce que la liaison entre le PCDC et le Plan Annuel d'Investissement (PAI) ? // *What is the link between the PCDC and the Annual Investment Plan (PAI)?* 52. Quelles sont les difficultés d'intégrer la RRC dans les PCDCs ? // *What are the challenges of integrating DRR into PCDCs?* 53. Quelles ont été les difficultés pour la mise en œuvre des PCDCs ? // *What were the difficulties in implementing the PCDCs?* 54. Quels étaient les facteurs de succès pour la mise en œuvre des PCDCs ? // *What were the success factors for the implementation of PCDCs?* 55. Pourriez-vous imaginer des partenaires techniques et financiers (PTF) nationaux ou locaux qui peuvent être engagés dans le mis-en-oeuvre des PCDCs ? // *Can you think of any national or local technical and financial partners (TFPs) that can be involved in the implementation of PCDCs?*

	56. Quel est le processus pour un PTF pour s'engager dans une commune ? // *What is the process for a TFP to get involved in a commune*? 57. Est-ce qu'il y a une cartographie des PTFs centralisés qui enregistre quels PTFs sont engagés dans quelles communes ? // *Is there a mapping that records which TFPs are engaged in which communes?* 58. Selon vous, qu'est-ce qu'on peut faire pour mieux recruter des PTFs ? // *In your opinion, what can be done to better attract TFPs?* 59. Est-ce que vous anticipez d'être un partenaire technique ou financier d'un PCDC dans le futur ? 60. // Do you anticipate being a technical or financial partner of a PCDC in the future? Qu'est-ce qu'il faut faire pour mieux intégrer la RRC dans la planification communale ? Par exemple en termes de : o cadre légal o personnel o connaissances et entraînement o finances o format, accès, pertinence de l'information des risques // What needs to be done to better integrate DRR into communal planning? For example, in terms of : o legal framework o personnel o knowledge and training o finances o format, access, relevance of risk information
	Les informations sur les risques peuvent être très utiles pour aider à se préparer ou à prévenir les conséquences négatives d'une catastrophe. Mais il peut y avoir des problèmes, de sorte que les informations recueillies ne sont pas suffisamment pertinentes ou qu'il est difficile de les accéder ou de les utiliser.

	// *Risk information can be very useful in helping to prepare for or prevent the negative consequences of a disaster. But there may be problems, so that the information collected is not sufficiently relevant or is difficult to access or use.*
Solutions // ***Solutions***	24. À votre avis, qu'est-ce qu'on peut faire pour améliorer la collecte et l'utilisation des informations des risques au Burundi ? Par exemple en termes de : o cadre légal o personnel o connaissances et entraînement o finances o format, accès, pertinence de l'information des risques // *In your opinion, what can be done to improve the collection and use of risk information in Burundi?* *for example, in terms of:* o *legal framework* o *personnel* o *knowledge and training* o *finances* *format, access, relevance of risk information*
Fin de l'entretien // ***End of the interview***	61. En quelques mots : Quels sont les avantages principaux de considérer la RRC de manière transversale dans la planification de développement / de l'agriculture / de l'éducation de tous les secteurs / de l'entreprise au Burundi ? // *In a few words: What are the main benefits of considering DRR in a cross-cutting way in development / agricultural / educational planning of all sectors / of a company in Burundi?*
	• Merci pour votre participation // *Thank you for your participation*

	• Nous allons créer des protocoles d'entretien à partir de cela. Si vous souhaitez que nous vous envoyions le résumé, veuillez contacter notre adresse électronique dans les deux prochains jours. // *We will create interview protocols from this. If you would like us to send you the transcript, please contact our email address within the next two days.* • Donner nos information de contacte • // *Give our contact information*