

Analyzing the risk of Maladaptation: Implications for adaptation projects among development agencies

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Abstract

The need for climate change adaptation is widely acknowledged and adaptation projects around the world are proliferating. Despite being one of the key actors for the implementation of adaptation projects, significant knowledge gaps persist regarding the potential maladaptive outcomes of such projects for international non-governmental organizations. This study analyses practitioners' perspectives on effective adaptation, maladaptation, and existing challenges and opportunities to provide recommendations for better practice. A qualitative descriptive case study was conducted using a mixed-methods approach, including 15 semi-structured interviews, a systematic literature review, and project document analysis. The research highlights the need for a holistic understanding of successful adaptation, with justice and equity as the central focus of adaptation planning. This study also identifies key challenges in addressing the risk of maladaptation, including funding mechanisms, insufficient contextual understanding, conceptual ambiguity, inadequate adaptive learning, and poor project practice. Additionally, this paper contributes to the emerging literature on maladaptation from practitioners' perspectives and provides recommendations and guiding questions to consider potential adverse outcomes of projects. Ultimately, this research demonstrates that maladaptation could be a useful tool to transform adaptation practices among organizations and ensure sustainable and effective adaptation projects.

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Summary

In recent years, the urgency to adapt to climate change has gained significant attention, as extreme weather events have become more frequent and intense due to anthropogenic activities. Bilateral or multilateral aid is anticipated to increase for adaptation projects in vulnerable countries, which are often implemented through development agencies. Thus, it is crucial to analyze adaptation practices among these organizations and provide recommendations for improved planning and implementation. Similarly, critical adaptation literature has raised concerns about maladaptation, along with increasing evidence of adaptation failure. However, the operationalization of this concept is not implemented among the principal implementers of adaptation projects. Therefore, this study aimed to address these conceptual and practical gaps, identify potential ways to address the risk of maladaptation, and raise awareness among development practitioners regarding rethinking adaptation practices.

The research was conducted using a primarily inductive approach through a qualitative descriptive study. Primary data were collected through 15 semi-structured interviews, and secondary data were collected through a review of academic and gray literature, as well as three projects in India, Ethiopia, and Zambia. Chapter 3 introduces the key foundational concepts that guided the research, and Chapter 4 provides a comprehensive overview of mainstream adaptation practices, emerging typologies of maladaptation, and existing frameworks and guidelines. Chapter 5 briefly introduces the projects and the key components included in the case study. In Chapter 6, the findings from the interviews and document reviews are presented and discussed in comparison to academic and grey literature. The findings indicate different interrelated factors in adaptation practice, which were categorized into eight main themes: (1) understanding contextual factors; (2) justice and equity; (3) inadequate monitoring and evaluation; (4) finance structure and mechanism; (5) conceptual ambiguity; (6) adaptive learning culture; (7) shifting towards a holistic perspective; and (8) poor project practice. Chapter 7 summarizes the key findings and provides recommendations and guiding questions to reflect on.

The study found that effective adaptation is characterized by a locally led, community-based approach, with a shared understanding of justice and equity at the center of adaptation planning. Overlooking contextual factors and limited monitoring and evaluation were identified as key determinants of maladaptive outcomes. Therefore, organizations should incorporate comprehensive participatory and contextually driven analyses and co-create project tools with the intended beneficiaries of the projects. Similarly, structural issues in funding mechanisms, conceptual ambiguity, absence of a learning culture, narrow perspective, and poor project practice were identified as key challenges. It is recommended that aid agencies promote patient, predictable, and flexible funding; incorporate a learning culture into future project planning; and promote long-term flexible programming. Lastly, the study suggests that further research should explore maladaptation as a tool to reshape current adaptation practices among organizations, ensuring effective and sustainable adaptation.

Abbreviations

CCA	Climate Change Adaptation
FPCs	Farmer Producer Companies
I/NGOs	International/National Non-Governmental Organisations
IPCC	Intergovernmental Panel on Climate Change
LIAP	Luangwa Integrated Agriculture Project
MEL	Monitoring Evaluation and Learning
M&E	Monitoring and Evaluation
ToC	Theory of Change
UNDRR	United Nations Office for Disaster Risk Reduction

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1. Introduction

1.1 Background

Anthropogenically driven climate change is substantive and there is a dire need to adapt to its adverse effects. There is growing concern and consensus, from local to global level, regarding the urgency to respond to socio-ecological threats posed by climate change (Berrang-Ford et al., 2021; IPCC, 2022). For years, adaptation efforts were being downplayed as they were perceived to be contrary to climate change mitigation; however, this has changed and the rationale for undertaking adaptation are well established (Glover & Granberg, 2020). Until recently, political and scientific debates predominantly focused on mitigation; however, the failure to limit greenhouse gas emissions and address the drivers of climate change has made adaptation a global priority (Bertana et al., 2022; Inderberg et al., 2014).

In this globalized world, the economic, social, and biophysical connections between people and places are becoming more complex (Atteridge & Remling, 2018). This, in turn, leads to concerns about the distributional impact of our adaptation actions (Jones et al., 2015). While academic literature shows increasing awareness of the shift or redistribution of vulnerability (Schipper, 2020), this has not significantly shaped real-world choices by policy makers, project planners, or international funds (Atteridge & Remling, 2018). Similarly, the types of responses that strengthen the adaptive ability of socio-ecological systems are not clearly understood (Magnan et al., 2016). Even worse, there is high possibility that current initiatives might turn out to be harmful in the long term, which is referred to as ‘maladaptive outcome’ (Magnan, 2014). Despite the ongoing concern that adaptation might end up redistributing risk and vulnerability between people and places, very limited attention has been paid to its meaningful translation into practice (Eriksen et al., 2021). Once the global average temperature rises further by 1.5 degree Celsius, some adaptation efforts will be useless, while others will be detrimental (Schipper, 2022). These can undermine opportunities for adaptation in the future, creating pathways of dependencies (Swatuk et al., 2021). However, scientific discussions on adaptation scholarship so far have not been able to substantially contribute to effective planning and wider discussions on how the adaptation process should be governed (Atteridge & Remling, 2018). Given the traction on adaptation efforts, significant gaps in the knowledge and evaluation of adaptation effectiveness persist (Adger et al., 2009; Boutroue et al., 2022; Singh et al., 2022). Numerous outcomes and pathways may emerge from a wide range of adaptation efforts in practice. While it is important to emphasize adaptation outcomes, it is equally essential to understand the processes and factors influencing them (Bertana et al., 2022). This eventually produces knowledge and helps to improve adaptation efforts. Most studies on maladaptation so far have been limited to case studies in specific contexts and actions, with very little contribution to wider practice. In other words, maladaptation remains a theoretically underdeveloped concept.

Likewise, much of the adaptation research is significantly focused on establishing opportunities and barriers, and much less on implementation. To date, there has been very limited independent review of the impacts of international or bilateral-funded interventions on social

vulnerability. Nevertheless, theoretical advancement and reported empirical cases of maladaptation have laid the foundation for examining different aspects of adaptation interventions, including framing, planning, implementation, and evaluation (Chi et al., 2020; Eriksen et al., 2011, 2021). So, identifying the mechanisms through which negative effects can unfold in adaptation interventions is essential for informing future adaptation policy and actions (Jones et al., 2015). International non-governmental organizations are currently a principal implementer of adaptation projects, as climate adaptation has folded into development practice and scholarship (Webber, 2016). International climate funds, development banks, and bilateral development organizations are leading adaptation projects in various parts of the world (Atteridge & Remling, 2018). Therefore, it is important to understand practitioners' perspective on effective adaptation, existing practices to better understand what maladaptation means in practice, and the current debate on maladaptation should continue.

1.2 Purpose

This study aims to examine practitioners' perspective on adaptation and how certain actions might lead to adverse impacts, so that they could be reduced in future planning and implementation of adaptation projects among international non-governmental organizations. The overall objective of the research project is to identify ways of addressing the risk of maladaptation by providing inputs for planning and implementing adaptation projects for development agencies. And most importantly, this research aims to contribute and take the discussion further and raise concern among development practitioners to rethink adaptation practice.

1.3 Research questions

- What are the principles that characterize effective adaptation?
- What are the pre-determining factors that might lead to the negative consequences of adaptation projects?
- What are the challenges in the existing practice of planning and implementing adaptation projects for I/NGOs? How can these be addressed?

1.4 Research Limitations

First, the sample size was relatively small, which may limit the generalizability of the findings to a broad range of organizations involved in climate change adaptation. Although efforts were made to ensure a diverse and representative sample, the results should be interpreted with caution as the initial contact with potential interviewees and the projects were sourced through an NGO network who have a child-focused mandate. It should also be noted that the contexts of the projects have been influenced by the organizational mandate and is evident in some of the project emphasis. Second, the study used a limited number of project documents from which to draw information. This included project design documents, baselines and endlines for each of the three projects. This means some activities may have been conducted, but not made clear in these documents. Third, the study used three available project documents and

information; however, the research did not attempt to label project interventions as adaptive or maladaptive. Instead, the analysis focuses on analyzing current practices, existing tools, and other contents of project documents without a specific categorization. Fourth, while ‘maladaptation’ has been studied in the literature for about two decades, there is still no consensus in practice, leading to ambiguity and subjectivity in its use. This could potentially affect the interpretation of results. To address this limitation, this study used a widely accepted definition, identified existing conceptualization, and most importantly, acknowledged the interviewee’s understanding of the concept. Finally, the researcher’s academic background and interest in non-governmental organizations may have introduced bias in the research design, data collection, and analysis. These limitations should be considered when interpreting the results of this study and drawing conclusions.

2. Methodology

This study applies a qualitative descriptive case study approach, utilizing a range of data sources, including project documents, systematic scoping literature review, and semi structured interviews. Considering the complexity and limitations as mentioned above, such a mixed method approach allows the research to get more comprehensive and nuanced understanding of the topic (Yin, 2009). Following the usual characteristics of case studies (Creswell, 2013), research included different sources of primary and secondary data.

2.1 Secondary data collection

Secondary data sources encompassing both scholarly and grey literature were used in this study. SCOPUS was the main database for the peer-reviewed literature using keyword search (figure 1). In addition, other databases, such as LUBsearch and ResearchGate, were used for snowballing from the reference list and accessing some key restricted articles. This ensured, to a great extent, that papers explaining the adverse outcomes and challenges of climate change adaptation without using the keyword ‘maladaptation’ (since it is a relatively young concept) were not missed.

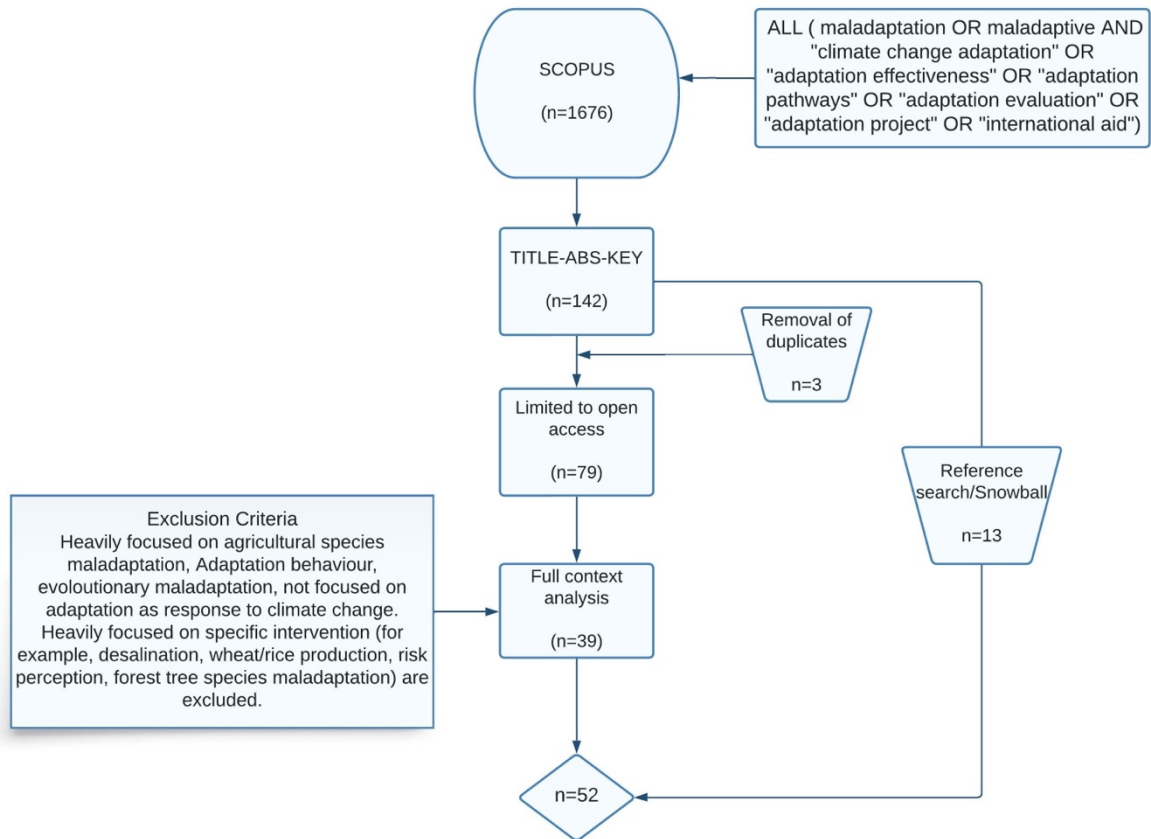


Figure 1: procedure for the literature review

Regarding the grey literatures, major climate adaptation knowledge portals such as Global Center on Adaptation (GCA) (<https://adaptationportal.gca.org>), World Resources Institute (WRI) (<https://www.wri.org>), Adaptation Research Alliance (<https://www.adaptationresearchalliance.org>) were screened for potential guidelines/frameworks. In addition, project documents and resources of major organizations working in the case area context were accessed and used to validate the existing practices and identify potential themes for analysis. While all the project documents and resources were not analysed in great depth, they were used to provide brief overview on adaptation practice among development agencies.

2.2 Primary data collection

A significant source of the data was semi structured interview with stakeholders and representative involved in various stages of project management. The sampling was based on purposive sampling and snowball sampling depending on potential participants identified through communication with interviewees and emergent knowledge gaps (Flick, 2018). The focus of the interviews was on practitioners involved in internationally funded projects with CCA component. To initiate the process, potential interviewees were identified through the researchers' connections, and invitations to participate in the research interviews were sent via

email to practitioners associated with the case studies. Initially, seven practitioners and experts were contacted. However, due to demanding schedules and poor internet connections, only three interviews were conducted. Nevertheless, in light of the limited number of responses, additional interviewees were identified through a series of conversations and follow-up correspondence with informants. Recommendation of the interviewee and communication, led to 24 experts being reached out via email. Out of 24 contacted individuals, 15 interviews were conducted to ensure as diverse sample as possible (Table 1). Likewise, sample size and data collection were adapted based on ongoing assessment of knowledge gaps through preliminary analysis of the interviews. A brief note about the research, interview purpose, timing, etc. was shared beforehand with the potential interviewees. Moreover, questions in the interview guide was also adapted as per the experience and involvement of participants at different level (Table 1). Interview invitation and interview guide is attached in the Appendices.

Table 1- Interview sampling criteria

Category	Unit	Expected outcome
Managerial level staff (donor representative)	Country or regional office	Insights on adaptation planning, financing, and other structural mechanisms Perspective on what adaptation, maladaptation means in practice
Operational level staff	Lead INGO donor, country office staff, and local implementing partner organization	Perspective on challenges and opportunities on implementation of adaptation project Insight on outcome of the projects
Academics and independent practitioners	Universities and think tank, government unit	Broader perspective and conceptualisation on adaptation pathways Inputs and suggestions for projects with low risk of maladaptive outcome

Overall, the majority of the interviewees (ten individuals) represented the operational level, including community-based NGOs and INGOs. It should be noted that although all of them were not directly involved with the case studies, their insights were valuable. Four interviewees represented academia and worked as independent researchers/consultants, while one interviewee was from a multilateral aid organization. All interviews were conducted online using platforms such as Zoom and Microsoft Teams, following the interview guide. However, there was also room to explore emerging topics based on the interviewee's experience. The interviews were recorded directly and stored using pseudonyms to ensure confidentiality.

2.3 Data Analysis

All interviews were transcribed and audited to initiate a detailed analysis of primary data in NVivo, a qualitative data analysis tool with coding query mechanism (Bazeley & Jackson, 2007). The coding was performed in two phases. First, the transcribed interview script was scrutinized line-by-line to generate the initial open codes. This was to open up the inquiry and

make a better sense of what the interviewee was trying to say. This according to (Strauss, 1987, p. 31) is to answer *what is actually happening in the data? And what is the main story in the dataset and why?* No pre-existing framework/categories were applied during the initial coding but were left open to all possible emergent themes (Charmaz, 2006). This provided 83 provisional concepts and emergent ideas. To ensure that the analysis was not restricted to these initial codes, notes and memos were maintained alongside the areas of modification and elaboration as the analysis proceeded (Strauss, 1987). In the second round, transcripts were analysed in depth to determine the relationship between different ideas and potential categories. Once there seemed to be a saturation in the data (Grbich, 2013), codes were scrutinized to identify relations, and form a cluster of codes. Provisional themes identified and deemed irrelevant for interpretation were removed from further process. Lastly, analytical memos and inspiration from the literature facilitated the systematic coding of preliminary codes and eventually led to categorized codes and sub-codes. Findings from the interviews were also supplemented by analysis of project documents, including the project proposals, evaluation reports, etc. Lastly, emergent themes were validated by the literature, interpreted, and discussed in relation to the research purpose.

3. Conceptual background

This introduces concepts informing the research, supporting the analytical framework, and providing a foundation for the discussion of the findings. This chapter aims to provide and understand the central terminology used throughout the thesis.

3.1 Vulnerability

Climate interventions have long been guided by the concept of vulnerability, although it is known to be notoriously unclear and difficult to define (Adger, 2006). Vulnerability is a central concept in climate change research with wide array of definitions and interpretations (Füssel, 2007). In the past, vulnerability was conceptualized as a function of exposure and sensitivity to certain risks (Blaikie et al., 1994). This is more common in the actor-centered approach, which largely relies on temporary events or risks that generate action in the form of preparedness or adaptation. However, the advancement in system-oriented approaches has led to a resilience framework that recognizes the dynamic complexity and nonlinear interaction of different components across scales (Câmpeanu & Fazey, 2014). More recently, efforts have been made to combine these two approaches, thereby rethinking vulnerabilities as structural properties deeply embedded within the system at multiple scales. Empirical evidence raises concerns about the systemic (re)production of differential vulnerability to climate change (Thomas & Warner, 2019). The most common framing of vulnerability in climate change literature is outcome vulnerability and contextual vulnerability (O'Brien et al., 2007). These are not just the different interpretation of word 'vulnerability' but the fundamentally different framing of the climate change problem. While outcome vulnerability is scientific framing, contextual vulnerability is human security framing (ibid). Outcome vulnerability is often perceived as a linear result of certain biophysical changes due to the impacts of climate change,

whereas contextual vulnerability is perceived to occur within contextual factors such as social, economic, and political structures (O'Brien et al., 2007). Therefore, vulnerability is not merely influenced by changing biophysical conditions, but through these dynamic interactions, resulting in compounded vulnerability (Simpson et al., 2023).

This research refers to UNDRR terminology “*The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards*” (UNDRR, 2022). Vulnerability differs across scales, community by community, and individuals and households, despite exposure being the same. Vulnerability could be produced and reproduced over time between social groups within their lived environment and this could be referred to as ‘vulnerabilization’ (Chmutina et al., 2022). It can be enacted through climate change adaptation measures at multiple scales, such as structural conditions (e.g., poverty, inequality), institutional structures/policies, cultural norms/values, and individual characteristics/behaviours. This typology helps to understand how different types of vulnerabilities are produced and reproduced in order to better adapt to environmental changes like climate change or disasters. For the purpose of this thesis, contextual vulnerability forms an important base, as adaptation projects often need to be questioned as to why certain groups of people and communities are more or less vulnerable and affected by climate threats (Taylor et al., 2022). Hence, this shifts the focus beyond climate change alone to the underlying circumstances and the multiple processes of change. The interpretation of vulnerability directly influences the types of funded projects and how they are implemented. Adaptation projects and policies addressing ‘outcome vulnerability’ often lead to technocratic solutions that naturally ignore the underlying causes of vulnerability (Nagoda, 2015; Nightingale et al., 2020). In the worst case, they might entrench the existing pattern of vulnerability and even limit their adaptive capacity for future risks.

3.2 Climate change risk

Following this line of argument, this paper applies the contextual vulnerability approach and consider climate change as one of the causes of vulnerability among others. Thus, climate change risk is a result of the inherent dynamic and complex interaction of social, environmental, political, and economic factors. Environmental change is one of the many stressors that feeds into the dynamic interaction of the human environment system and reconfigures or exaggerates the existing patterns of vulnerability (Adam et al., 2018). So, this research focus on contextual framing of climate risk, meaning acknowledging the role of social and cultural processes in underlying framing of adaptation responses (Eriksen et al., 2015). The adaptation literature, to a great extent, recognizes the cascading effects of compound climate events, where one determinant of risk affects another, which in turn affects another in a linear manner (Simpson et al., 2023). This is referred to as the domino effect (ibid). Similar to the hegemonic framing of vulnerability, climate change risk discourse seems to be predominantly influenced by the biophysical emphasis of climate science (Ojha et al., 2016). Global narratives

on the technological framing of policy issues are accepted by countries in the Global South. Often, national adaptation plan addresses the technical experts, and international donors perspectives, and hardly touches upon real experience of vulnerable communities (Ensor et al., 2019; Ojha et al., 2016). Climate policies in the developing world have always been shaped by development agencies, donors, and service providers. One of the key reason behind this is financing mechanisms and knowledge production and legitimization around western scientific world views (Tabassum, 2022). How climate risk is framed in the wider discussion has its clear implications in the type of adaptation projects and how they are implemented.

IPCC (2022, p. 4) defines climate change risk as “*the potential for adverse consequences for human or ecological systems, recognizing the diversity of values and objectives associated with such systems.*” Hazards, exposure, and vulnerability are key determinants of climate risk; however, they are subject to uncertainty in terms of magnitude and likelihood of occurrence (Blaikie et al., 1994). This thesis views climate change risk from holistic perspective to understand how the structural causes of vulnerability interact with ongoing and contextual realities of change.

3.3 Adaptation

Subjective notions of vulnerability are inherently drawn into adaptation, which is clearly observed in widely differing approaches (Klepp & Chavez-Rodriguez, 2018). Adaptation has a long and multidisciplinary history of study; hence, its meaning differs among various fields and practices (Brown, 2011; Eriksen & Brown, 2011). Given the highly contextual nature of adaptation, a widely accepted definition of effective means of adaptation is challenging. The concept of autonomous vs. planned adaptation is still reflected in the essence of incremental vs. transformative adaptation (Brown et al., 2017; Loginova & Batterbury, 2019). Incremental adaptation is usually perceived as an approach with sets of actions in response to environmental stress aimed at reducing exposure and sensitivity, or increasing coping capacity (Park et al., 2012) (Figure 2). Adaptations at this scale are reactive and short-term nature focused. In contrast, actions that are adopted on a larger scale, unique to a certain system, and those that transform places and shift locations are usually considered transformative adaptation (Kates et al., 2012). Such actions include fundamental changes in existing institutional arrangements, priorities, and norms (Park et al., 2012), expanding beyond the proximate causes of risk to its root causes, and ensuring sustainability in natural and human systems (Magnan et al., 2020). Incremental adaptation by nature addresses exposure and vulnerability, which eventually has short-term benefits for risk reduction but might turn out to be detrimental in the long run. While adaptation is usually perceived as a long-term perspective, it refers in practice to short-term coping measures, dealing with the immediate disturbances caused by external stress, such as climate change (Glover & Granberg, 2020). Along with the proliferation of adaptation literature, two major conceptualizations could be observed. One is adaptation as a response to externally imposed environmental change, and the other is adaptation as a part of socio-political processes that shape climate change and inequality (Nightingale et al., 2022).

“Adaptation involves changes in social-ecological systems in response to the actual and expected impacts of climate change in the context of interacting non-climatic changes. Adaptation strategies and actions can range from short-term coping to longer-term, deeper transformations, aim to meet more than climate change goals alone, and may or may not succeed in moderating harm or exploiting beneficial opportunities.” (Moser & Ekstrom, 2010, p. 2026). This is one of the most comprehensive definitions and implies to wider literatures calling for considering adaptation as part of pathways of change and response, and not as outcome (Wise et al., 2014). This considers dynamic interactions among multiple stakeholders and their values, goals, and knowledge to avoid maladaptation and facilitate transformative strategies (Werners et al., 2021). Adaptation is beyond the mere response to climate stimuli; it is part of an existing human-environment system and vulnerability context determined by different factors (Adam et al., 2018).

This thesis is built upon the concept of ‘situated adaptation’ which means situating *climate change within the complex, multidimensional, and transforming realities of marginalized populations* (Ensor et al., 2019; Quealy & Yates, 2021, p. 2; Sen, 2023). This approach complements the concept of adaptation pathways (Wise et al., 2014). However, it also demands the need to recognize the local contexts and conditions in which adaptation takes place (Taylor et al., 2022). Adaptation is not a one-size-fits-all solution, and hence should be tailored to specific needs and priorities of the marginalized communities. Thus, rethinking adaptation through this approach might diversify actions by situating adaptation within the everyday realities of the people and communities, and shift away from the mainstream adaptation approach which is limited to techno-managerial fixes (Juhola et al., 2022; Nightingale et al., 2020). This helps to step back and analyse how people are situated within the socio-natural context and how it co-produces differential vulnerability and benefits (Quealy & Yates, 2021). Likewise, this leads to the notion of ‘vulnerabilization’ (Chmutina et al., 2022) by revealing underlying socio-political dynamics and how people’s lives are structured around this (Quealy & Yates, 2021). While there are wider calls for paradigm shift in adaptation research and action from moving away from technocentric mindset driven by western scientific knowledge and depoliticized solutions, ‘situated’ understanding of adaptation questions: “adaptation for whom”? (Adger et al., 2005; Atteridge & Remling, 2018; Ensor et al., 2019; Forsyth & McDermott, 2022). Adaptation is therefore part of wider processes of change and response situated within everyday experiences of vulnerability and constituted through human-nonhuman relations. Comprehensive understanding of pathways of change for different groups and how they interact with each other is essential for future adaptation that is able to address both environmental and social justice related outcomes.

3.4 Maladaptation

Like adaptation, evolution of ‘maladaptation’ could be traced back to evolutionary biology, and then applied to different scholars including cultural, human, environment interface (Magnan et al., 2016). It is often used to describe unfavourable outcomes of adaptation efforts. There is no fine distinction on whether outcome could be labelled as maladaptive only in case of planned action or is it applicable to spontaneous response also (Jones et al., 2015; Mersha & van Laerhoven, 2018). Early maladaptation scholarship was quite straightforward, and the concept referred to adaptation efforts that increased vulnerability to climate change. Along with increasing interest and research, this concept has evolved elusively in its infancy. Factors complicating maladaptation, such as multiple drivers and geographical and temporal scales, are currently being discussed (Magnan et al., 2016; Strøbech & Bordon Rosa, 2020). Notwithstanding, there is still a significant difference between definitions and different opinions on how far and wide the adaptation effects should be analyzed in the future (Juhola et al., 2016).

The understanding of maladaptation through this thesis is consistent with the early conceptualization of IPCC (2001) as “*any changes in natural or human systems that inadvertently increase vulnerability to climatic stimuli; an adaptation that does not succeed in reducing vulnerability but increases it instead*” (p. 389). Although this definition does not refer to temporal and spatial scale issues, it has attracted the attention of academics and practitioners. Recent IPCC report with quite a focus on ‘addressing maladaptation’ shows that the concept is now in the mainstream adaptation literature, yet, little or no consensus on what it means in practice (IPCC, 2022). Simply, maladaptation refers to an action or decision taken by people, organizations, and governments which may have unintended negative consequences for their ability to adapt successfully over time. Maladaptation can occur when decisions are made without considering long-term impacts on ecosystems and communities; it often results from short-sightedness or lack of knowledge about potential risks associated with certain actions. In some cases, maladaptation arises due to external factors, such as economic pressure or political interests that override environmental considerations. To better illustrate what maladaptation looks like, one of the most commonly reported form is infrastructural maladaptation (Schipper, 2020). For example, sea walls built to protect people from rising sea level have made people more exposed by preventing stormwater drainage, and also shifting vulnerability to elsewhere along the coast (Piggott-McKellar et al., 2020). Other examples include large scale irrigation projects where many small holder farmers could not afford and sell or rent their croplands, agriculture intensification strategies leading to water pollution, increased greenhouse gas emissions, soil degradation, livelihood diversification strategies such as charcoal production resulting in increased deforestation, etc. (IPCC, 2022). The discourse on maladaptation goes beyond the current conception of adaptation which predominantly understands vulnerability to be driven by climate change rather than socio-economic stressors (Inderberg et al., 2014). So, this thesis considers ‘maladaptation’ as a tool to initiate critical reflection and discussion on externalities of adaptation decisions (Adger et al., 2005), and to holistically understand “*what is being adapted to, Who implements, and How adaptation occurs?*” (Asare-Nuamah et al., 2021, p. 2).

3.5 I/NGOs role in climate adaptation

Effective governance to reduce vulnerability to climate change now engages a range of actors including governments, civil society, and the private sector. Bilateral funds and large-scale multilateral funding schemes funded by the developed countries are the major gateway for adaptation actions and are often implemented by local governments and NGOs. Historically, international actors have instrumental influence over developing countries through foreign aid (Dolšak & Prakash, 2018). Despite the decades of effort and investment, government and aid agencies still fail to effectively reduce the vulnerability of the marginalized (Tiwari, 2015). However, during this discourse, our understanding of vulnerability changed significantly, at least in the literature. But this has not been translated into practice among organizations. Project interventions are predominantly shaped by technocratic and depoliticized perspectives, which can also be traced back to the natural and climate science disciplines of adaptation (Brink et al., 2023). In fact, international donors want to stay away from the deep discussions and do not explicitly tackle the context specific political and power dynamics. In most cases, this is undesirable for them. Instead, they prefer to opt for and promote technocratic, apolitical, and outcome-oriented approaches, which tend to be legitimized through the process of so-called community participation (Buggy & McNamara, 2016; Nagoda & Nightingale, 2017). This is a safer way for the organizations to pursue quick and measurable results (ibid). This might not lead to adverse impacts in all cases but undermines the long-term ability of the respective government to address the real and vulnerability needs of its citizens. This legitimizes expert-driven climate change knowledge, and projects led by I/NGOs directly or indirectly prioritize this mindset at the expense of contextual needs, realities, and local knowledge (Tabassum, 2022; Ziervogel et al., 2022). In other words, organizations driven by donor mindset, are interested in producing quick and visible results within a limited time frame, without much capacity or instrument to design radical shifts in social and power relations within CCA at the centre of the projects (Nagoda & Nightingale, 2017). Along with the growing attention to locally led adaptation and climate justice agendas, aid organisations have a greater role to play (Westoby et al., 2020). There is growing investment to building voice and agency and supporting active engagement of community. This thesis acknowledges their role in bridging the gap between international climate funds, national executing entities, local partners, and community people.

4. Literature review

This chapter aims to provide brief overview on how key concepts of the research (adaptation and maladaptation typologies) are framed in the wider literatures. This helps to develop a general understanding of the concepts and presents this thesis' interpretation of these concepts, as these are often ambitiously defined and used. Likewise, this chapter also identifies and summaries the key frameworks and guidelines on conceptualising maladaptation and draws key insights and provides the building blocks to understand the research standpoint.

4.1 Adaptation framing

Recent critiques of adaptation policies and their outcomes have led to a shift in adaptation framing. This is evident in the literature that, when adaptation is framed as an environmental problem response, it invites technocratic and managerial solutions (Eriksen et al., 2015; Glover & Granberg, 2020). Such measures are often highly risky in terms of maladaptive outcomes. So, prevailing technocratic vision is subjected to critiques among adaptation scholars, which has revealed the underlying socio-political and economic implications (Inderberg et al., 2014). Adaptation actions without considering the social power relations and the socio-structural constraints widens the vulnerability gap rather than reducing it (Browne & Razafiarimanana, 2022; Fünfgeld & Schmid, 2020). Adaptation does not operate in silos, but rather occur in the context of socio-economic, cultural, and other changes brought about by globalization. These are non-climatic factors leading to adaptation, and it is difficult to clearly distinguish between climate change adaptation decisions and actions in response to non-climatic factors (Adger et al., 2005). Therefore, attributing action to climate change is not a simple process. One of the most common framing or principles of effective adaptation is ‘transformation framing,’ meaning “*adaptation process should fundamentally change human thinking and practices in the face of climate change and overtly challenges the power structures that generate vulnerability*” (Singh et al., 2022, p. 656). Transformation framing is generally based on the assumption that fundamental changes are feasible and essential (Schipper, 2020). Therefore, the adaptation process should truly challenge existing power structures that generate vulnerability in the first place (Kates et al., 2012) (Figure 2). Meanwhile, transformation in relation to climate change has been a hot topic for discussion based on the understanding that climate change poses risks that are beyond the ability of human environment system through business as usual approach, in other words, incremental adaptation (Uitto & Batra, 2022). Just adaptation is clearly insufficient for the society to manage complex climate risks.

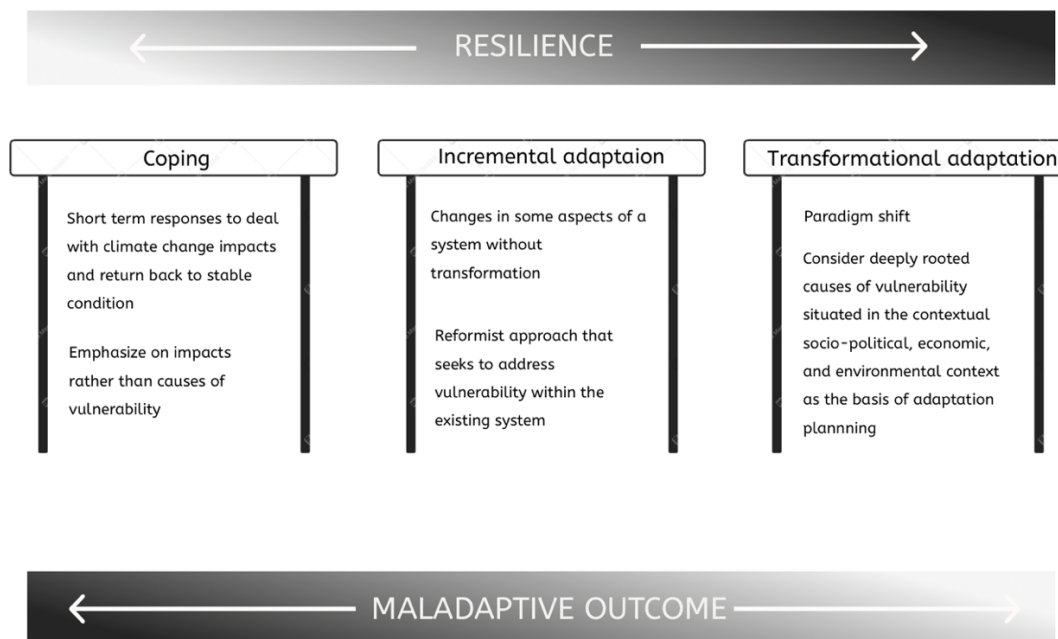


Figure 2: Illustration inspired and adapted from literatures (Bassett & Fogelman, 2013; Moser & Ekstrom, 2010; Pelling et al., 2015)

Mainstream adaptation practices, which are predominantly coping and incremental, focus on the biophysical impacts of climate change and measures to cope with the adverse impacts. The conceptualization of such adaptation approaches (figure 2) is not always distinct and requires an understanding of different priorities. In addition, any adaptation action that is labelled coping or incremental might lead to transformational action (Wilson et al., 2020). It is evident that adaptation is quite a slippery concept, as it is broadly interpreted, which means different things to different people. However, impact-led conceptualizations are significant in practice, which view adaptation as an adjustment. And non-governmental organizations are not an exception to this. The adaptation projects implemented by I/NGOs mainly focus on responding to the immediate impacts of climate variability and helping communities to cope with extreme events. Similarly, in the academic literatures, Bassett & Fogelman (2013) reported that 70% of the articles perceive climate impacts as the major source of vulnerability whereas only 3% consider deeper roots for vulnerability and call for transformative adaptation. In recent years, there has been wider acceptance that risk should be located within societal and biophysical hazard interactions, which successively promote transformational adaptation (Quealy & Yates, 2021). Most evidently, heavily technocratic inclination of adaptation literature and practice is being critiqued through the political nature of adaptation (Dolšak & Prakash, 2018; Glover & Granberg, 2020; Tabassum, 2022).

4.2 Maladaptation and its typologies

In climate and development literature, maladaptation is a relatively recent term that has gained widespread attention among academics and practitioners. The earliest introduction of maladaptation in the climate adaptation sphere mentioned that “*Maladaptation can result in negative effects that are as serious as the climate-induced effects being avoided* (Scheraga & Grambsch, 1998, p. 87). Unsuccessful adaptation does not necessarily have to be maladaptive unless it results in adverse effects (Barnett & O’Neill, 2010). The key link is vulnerability, which refers to an increase in the vulnerability of a system or people. As argued by (Lama et al., 2017), labelling certain actions as adaptive or maladaptive is highly normative, value laden, time and context dependent. Boutroue et al., (2022) further stressed that “*(mal)adaptation is as much a political process as a scientific endeavour*” (p.893). This is because it is contested within socially situated actors and their values (Fünfgeld & Schmid, 2020), which cannot be constructed using scientific knowledge alone. There is consensus in the literature that proposing an adaptive action as maladaptive or transformative is not straightforward and demands holistic and long-term pathway understanding (Brink et al., 2023; Work et al., 2019). Any intended action and its success or failure might change over time as the values to prevent something change with the continuous interaction of the human environment system and its components (Ayanlade et al., 2023).

Although there is consensus that adaptations to climate variability might escalate ingrained vulnerability or even introduce new sources of vulnerability (Torabi et al., 2018), conceptual ambiguity remains in defining such an outcome. In addition, the majority of the conceptualization (Table 2) provides room for a certain degree of subjectivity and vague interpretation, leaving the questions of Who? How? Why? and other questions regarding adaptation actions and outcomes.

Table 2: Key definitions of maladaptation in the literature, inspired and adapted from (Chi et al., 2021, p. 11)

Literature source	Maladaptation defined
(IPCC, 2022, p. 6)	<i>“any actions that may lead to increased risk of adverse climate related outcomes, including via increased greenhouse gas emissions, increased or shifted vulnerability to climate change, more inequitable outcomes, or diminished welfare, now or in the future”</i>
(Glover & Granberg, 2021, p. 69)	<i>“adaptation actions, plans, policies and processes intended to avoid or mitigate vulnerability to climate change that has, or is predicted to have, negative impacts on individuals, communities and/or systems”</i>
(Ma et al., 2021, p. 4)	<i>“actions that may alleviate short-term and individual impacts, but would deter the building of long-term sustainability and go against public adaptation.”</i>
(Juhola et al., 2016, p. 139)	<i>“result of an intentional adaptation policy or measure directly increasing vulnerability for the targeted and/or external actor(s), and/or eroding preconditions for sustainable development by indirectly increasing society’s vulnerability”</i>
(Barnett et al., 2013, p. 226; Barnett & O’Neill, 2010, p. 211)	<i>“action taken ostensibly to avoid or reduce vulnerability to climate change that impacts adversely on, or increases the vulnerability of other systems, sectors or social groups”</i>
(Magnan, 2014, p. 3)	<i>“process that results in increased vulnerability to climate variability and change, directly or indirectly, and/or significantly undermines capacities or opportunities for present and future adaptation”</i>
(OECD, 2009, p. 53)	<i>“business-as-usual development which, by overlooking climate change impacts, inadvertently increases exposure and/or vulnerability to climate change”</i>
(Global Center on Adaptation, 2022, p. 239)	<i>“when an intervention to adapt to climate change makes people more vulnerable”</i>
(Mycoo, 2014, p. 137)	<i>“intervention in one location or sector may increase the vulnerability of another location or sector, or</i>

	<i>increase the vulnerability of the target group to future climate change”</i>
(UNFCCC, 2007, p. 32)	<i>“adaptation measures that do not succeed in reducing vulnerability but increase it instead”</i>
(Yaro et al., 2015, p. 3)	<i>“negative changes and practices resorted to by households and individuals in reaction to climate stressors that are inimical to their welfare or that of the community as a whole”</i>
(Fenton et al., 2017, p. 193)	<i>“maladaptation occurs if exposure of sensitivity to natural hazards and stress is inadvertently increased or adaptive capacity reduced”</i>

Although it is an ambiguously defined concept, in the broad notion, maladaptation is largely perceived as the counter-narrative of what adaptation aims to accomplish. Based on (Schipper, 2020) conceptualisation that maladaptation must be understood as a phenomenon along the continuum from success to failure, (Glover & Granberg, 2021) emphasize that maladaptation is a complex, contested, and difficult concept. What makes this complex phenomenon is the wide differences in factors, such as framing, assessment criteria, nuances, and values (Glover & Granberg, 2021; Magnan, 2014). The concept of maladaptation informs and prompts essential critiques of adaptation. *“What are the results of adaptation, including its unintended consequences? How do we evaluate these outcomes?”* (Glover & Granberg, 2021, p. 70).

4.3 Existing frameworks and tools on understanding maladaptation

One of the earliest frameworks for conceptualizing maladaptation was by (Barnett & O’Neill, 2010) which identified five distinct pathways; increasing in greenhouse gas emission, increasing vulnerability of groups most at risk, high socio-economic or environmental cost, reducing incentive to adapt, and path dependency. Advancing on this, (Magnan, 2014) adopted Pathways Framework with the principle of avoiding maladaptation. This includes ensuring that adaptation promotes socio-economically equitable interventions, cost-effective initiatives, flexibility, develops incentives to adapt, and does not lead to increased greenhouse gas emissions (Barnett & O’Neill, 2010; Magnan, 2014). This understanding has progressed along with increasing evidence of adaptation actions leading to unintended outcomes (Guodaar et al., 2020; Piggott-McKellar et al., 2020). Advancing on the maladaptation literature (Jones et al., 2015) tried to define three distinct types of adaptation outcomes; successful adaptation, failed adaptation, and maladaptation. Like many conceptualizations of maladaptation, these outcomes are highly value-laden, normative in nature, and vary according to individual interpretations (Boutroué et al., 2022). Nonetheless, this provides a basis for researchers and practitioners to relate to potential pathways. They define successful adaptation strategy as *“one with either significant or limited positive effects across collective climate risk, distribution of risk over time, and no negative impacts on well-being”* (Jones et al., 2015, p. 10) (Figure 3). Similarly, an adaptation strategy could be considered to fail when *“it has negligible impact (neither positive nor negative) on reducing climate risk now and/or in the future”* (p.10). This

leads to defining maladaptation as a strategy that has a negative impact on the climate risk of well-being. Contributing to the burgeoning literature (Juhola et al., 2016) identified three typologies of maladaptation; rebounding vulnerability, shifting vulnerability, eroding sustainable development. In contrast to the previous framework, they argued that ‘spontaneous adaptation action’ should not be included in the analysis of maladaptation, as adaptation is often a by-product in such cases. This addressed the existing dilemma of drawing system boundaries and operationalizing the concept of maladaptation. This would strengthen the conceptualization, but this is still an ongoing discussion on how autonomous adaptation, for example, spontaneous action taken by a household, could lead to adverse impacts at the community level (Mersha & van Laerhoven, 2018; Mycoo, 2014; Rahman & Hickey, 2019).

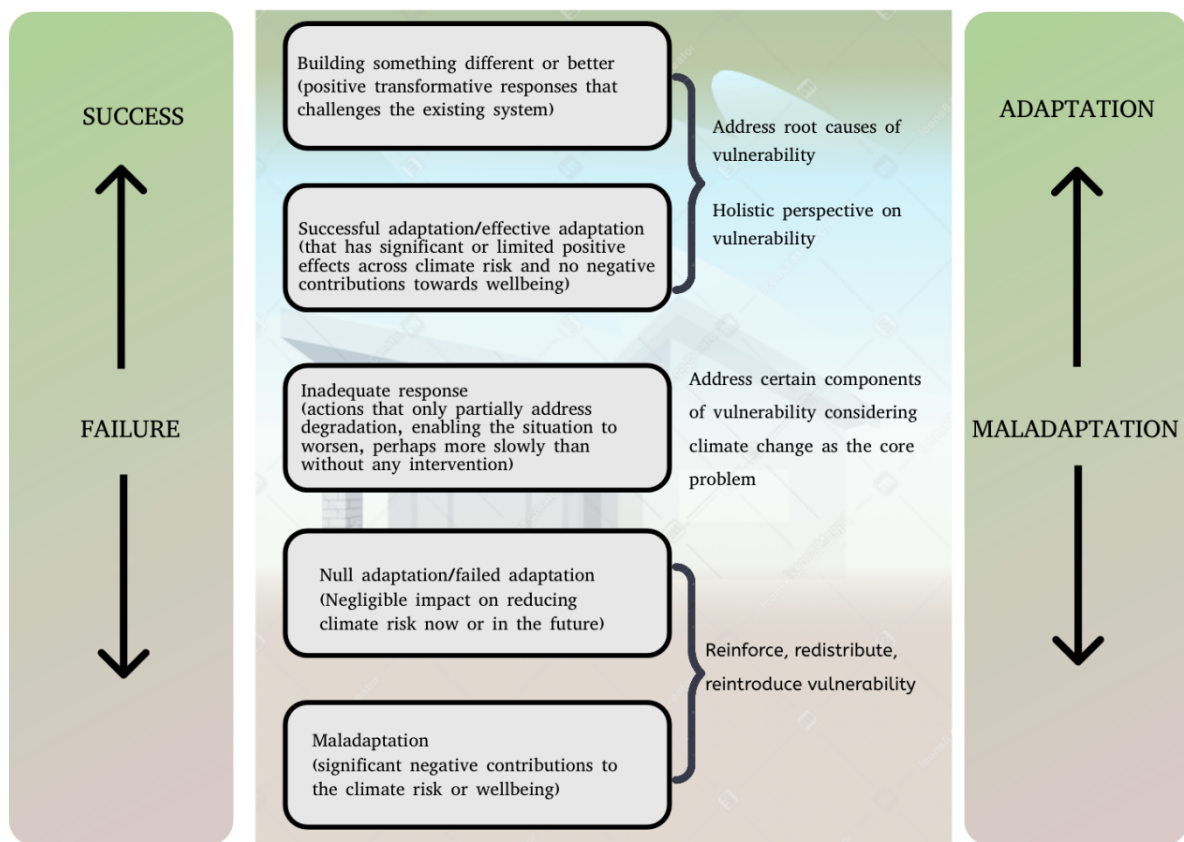


Figure 3: Illustration inspired and adapted from (Jones et al., 2015; Juhola et al., 2016; Mills-Novoa, 2023)

Although these classifications (figure 3) may have some practical ambiguity, they offer a comprehensive understanding and foundation for examining the interconnectedness between them. Simpson et al. (2023) analysed 45 different types of responses across 39 countries and found that 41% showed maladaptive characteristics. There is limited evidence showing that adaptation response reducing risk, instead, inappropriate responses leading to increased vulnerability (Atteridge & Remling, 2018). Despite the growing concern in academia and international forums, this has not been translated in practice, especially among the projects designed and implemented by INGOs. This is partly due to the lack of frameworks and guiding tools for practitioners to help communities respond to the immediate impacts of climate change

variability while ensuring long-term sustainability and benefits of their actions. Existing frameworks do not really help development practitioners to facilitate the design of more effective and sustainable projects with a low risk of maladaptive outcomes (Hallegatte et al., 2020; Stockholm Environment Institute, 2021). One of the common and central aspects of the ongoing discussion is ‘vulnerability’ (Figure 3). Three patterns of influence on vulnerability determine pathways from adaptive to maladaptive outcomes; reinforcing existing vulnerability, redistributing vulnerability, and introducing new sources of vulnerability (Eriksen et al., 2021). Reinforcement of existing vulnerability occurs when adaptation goals and priorities are set by relatively privileged groups, as this results in an inequitable distribution of benefits and resources in favour of limited elite groups (Eriksen et al., 2021). This phenomenon is referred to as ‘elite capture’, and has been a long-standing problem in development (ibid). Such a situation ultimately reinforces existing power relations and marginalisation, which are the drivers of differential vulnerability and inequality in the first place (Thomas et al., 2019). Owusu-Daaku (2018) introduced the concept of (mal)adaptation opportunism to refer to situations in which adaptation projects are driven by certain economic interests rather than intended objectives. Likewise redistributing vulnerability over a broader spatial area or among other groups is often reported in infrastructural and technical interventions, for instance, hydroelectric dam, flood embankments, coastal infrastructures, and agro-technologies (Eriksen et al., 2021). Lastly, introduction of new risks and sources of vulnerability results from adaptation measures that emphasize short-term concerns and inadvertently creating long-term risk. This involves the trade-offs between short-term coping and reducing future risk, thereby resulting in unsustainable initiatives that create negative path dependencies in the long term (Eriksen et al., 2021).

5. Case study descriptions

These case studies are projects drawn from NGOs and their community-based partners operating in Zambia, India, and Ethiopia. The projects were typically two- or three-year-long projects implemented between 2016 and 2023. It should be noted that they are situated within a broader programme of community development, responding to local area development plans (those of government, and as identified through participatory planning processes involving the community). These projects form the basis for questioning the international NGO donor, the country level NGOs, local partner organizations and other stakeholders involved in their implementation on the concept of maladaptation.

5.1 Right-based project with an agricultural component, Ethiopia

This was a two-year project that focused on multi-level coordination involving the contribution of children, mitigating, and preventing the immediate and downstream effects of climate change and environmental degradation in five kebeles in Ethiopia. The overall project had five objectives, with two focused on children specifically (school safety and child protection) and three more aligned with the subject of this thesis: Increased food security in vulnerable households through improved and diversified income opportunities; Strengthened household

resilience to prepare for and cope with disasters by improved and diversified agricultural production; and environmental stewardship and strengthening service providers linking the climate change and child protection nexus.

5.2 Gender empowerment project supporting climate smart agriculture and economic development in India

This project included supporting women in remote parts of rural India to establish a climate informed, economically viable, democratic, and self-governing business enterprise, with the support of Civil Society Organisations. The project supported the creation of women farmer groups and farmer producer companies, leading to improved productivity, better market selling prices and access to information and communication. Climate smart agriculture was promoted and linkages to markets were formed, as well as connecting the women farmers with agriculture investments and programs.

5.3 An integrated agricultural project with a larger water component, Zambia

The goal of this project was to promote sustainable economic development and food security at household level in an area of rural Zambia that was plagued by drought, floods and wild animal incursion. Six main components were identified to achieve the outcomes of the project; crop diversification and agroforestry, dam rehabilitation and irrigation (rain water run-off catchments, hydro-powered pumping from the river and boreholes), fish and livestock farming, solar powered electric fencing to deter animal invasion, climate change and disaster risk reduction preparedness training to farmers, and agricultural marketing training. Three main outcomes were:

- sufficient water is available to irrigate crops and trees
- people raise livestock and fish, and grow diversified crops, fruit, and agroforestry trees
- crops and trees are protected from animals

6. Results and Discussion

Data analysis process as described in section 2.3 yielded 8 overall themes comprising 4-5 sub themes under each. This chapter will simultaneously present and discuss those findings in relation to overall purpose and research questions. Considering the limited number of interviews, this chapter also refers to emergent aspects through triangulation. This section also interprets the research findings in relation to conceptual background and review of established literature as discussed in section 4. The figure below provides quick summary for what it means to reduce the risk of maladaptation in future adaptation projects among development organizations and followed by in depth analysis of key factors identified by this research.

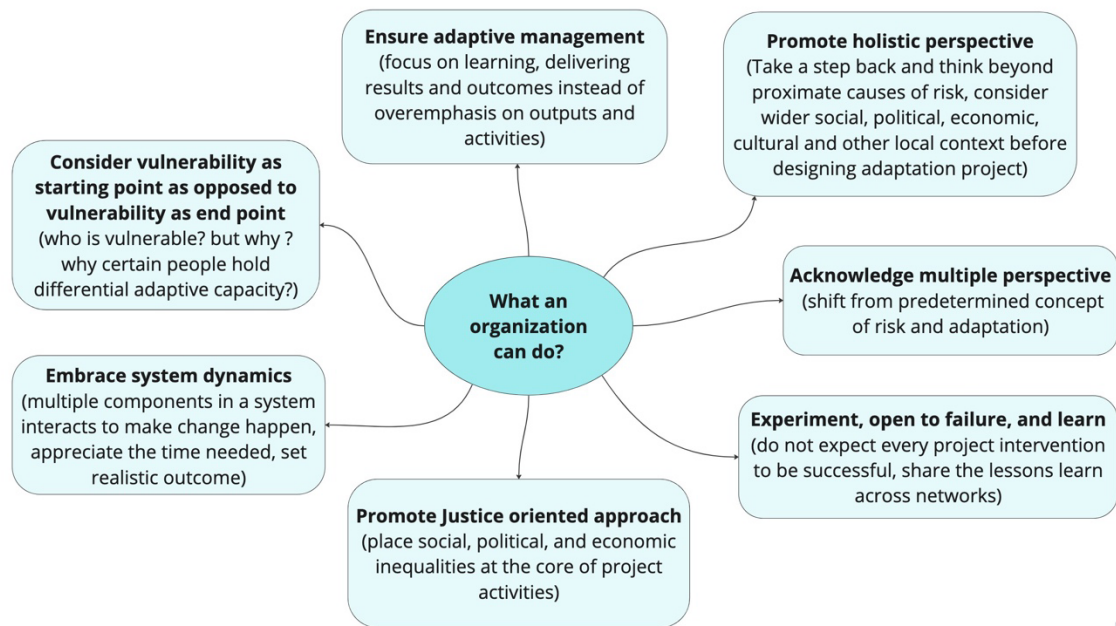


Figure 4: Insights for future planning and implementation of adaptation projects based on interviews and guiding principles of locally led adaptation

6.1 Understanding context

Contextual understanding during the design and implementation phases of the project was found to be the key factor influencing the success or failure of any project. The majority of the interviewees highlighted the potential impacts that might arise when a project fails to acknowledge such context specific factors, interviewee 8 stating that “*projects operating at local scale should understand the contextual dynamics in enough detail to be able to understand how that is adversely affecting the community (Interviewee 8, donor representative).*” Such contextual factors include behavioural and cultural aspects, differential vulnerability, ground reality, poverty and competing needs, and power dynamics. Empirical evidence in the growing body of adaptation literature demonstrates how internationally funded interventions often overlook such factors and socio-political relations and processes (Eriksen et al., 2021; Gaworek-Michalczenia et al., 2022; Nunn et al., 2020). This is not only with contextual vulnerability, but also with differential needs and capacity, as interviewee consistently highlighted the importance of “participatory need assessment.” An inadequate understanding of these contextual aspects has direct implications for addressing the drivers of vulnerability, which is a key characteristic of effective adaptation (Singh et al., 2022). To ensure that adaptation interventions are effective and do not increase the vulnerability of those they seek to help, it is important to consider the social divisions that exist in society and how they shape climate change adaptation (Pritchard & Thielemans, 2014). This includes understanding how gender, race, age, (dis)ability or class can determine who is vulnerable to climate change and who has a greater ability to adapt. Some informants also reported that cultural beliefs, norms, knowledge and attitudes play a vital role in successful implementation of adaptation options but unfortunately most organizations do not pay much attention to this. One interviewee shared their experience, stating that “*it was not easy to convince some*

communities who value cattle as a measure of wealth and respect, and switch to keeping small animals that are initially looked upon as those for poor families (Interviewee 6, livelihood and adaptation expert).” This implies livelihood diversification strategies, which are often a significant component of adaptation projects (Antwi-Agyei et al., 2018). So, projects must be sensitive to more than just presenting practical solutions. Interviewee working in similar contexts also indicated that investment in adaptation projects focused on the livelihood and agriculture sector has yielded benefits, but these agricultural techniques and practices have not always continued and scaled up to other communities. This result supports previous research that has referred to such vulnerability linked to the *productivity-vulnerability paradox* (Quealy & Yates, 2021, p. 4). This means that many smallholder farmers supported through internationally funded projects are made more vulnerable due to the modernized agricultural practices and techniques used to increase productivity. Although increased agricultural productivity has short-term benefits, it may make smallholder farmers more vulnerable by trapping them in an unsustainable debt cycle, eroding collective norms, and even ecological failure in some cases (Quealy & Yates, 2021). The case study projects (Section 5) also shows similar patterns of livelihood support measures, and it is possible that the paradox might deepen the uneven distribution of risks and benefits. For example, projects (5.2, 5.3) promote shifting from traditional to high-value commercialized crops as a means of livelihood diversification but do not reflect on the volatile price, market dynamics and access, increased investment, competition, etc. Therefore, farmers who benefit from such interventions are the ones who are already well resourced. The literature suggests that such measures do not necessarily lead to resilient livelihoods in all contexts and, hence, need further research (Acharya et al., 2021). This was also evident in the interviews, where interviewees consistently mentioned the unsustainable promotion of cash crops, resulting in limited or no impact on the economic benefit of the farmers in the long-term.

Additionally, such strategies are not always adopted by communities beyond the project target area. This is most likely because the project interventions are not tailored towards cultural elements and supporting behavioural learning. The case study projects also revealed similar findings and suggested that organizations should be careful in dealing with the behavioural and cultural aspects of the communities they work with. For instance, the women empowerment project in India had indicators such as ‘transference of land ownership from male family member or husbands to female.’ This has benefits and incentives in terms of different government schemes and subsidies specifically aimed at female farmers. However, specifying this as an outcome is not sufficient. It must be supported by actions that address the deeply embedded social and cultural beliefs attached to this, which might require generations to change. Projects must consider that change of this magnitude takes time and in the confines of a two- or three-year project, progress is likely to be small. Timely and patient financing is needed to achieve such results. Another interviewee emphasized that I/NGOs “*very often use the same kind of approach that they view somewhere else*, (Interviewee 1, adaptation researcher)” but the main priority should be contextual needs and priorities. In addition to the factors mentioned above, context-specific climate information is key. Projects should be well informed of the current and future climate variability, geographical nature of the environment,

adaptive capacities of local ecosystems, and so on. However, this varies from project to project, depending on nature.

Another key determining factor is the poverty and competing needs of communities. The analysis shows that these factors are often mentioned in the project documents but do not explicitly discuss their implications for project interventions and their outcomes. For instance, interviewee involved with project in Ethiopia stated that “*although communities embrace the project interventions, we find that people still go to bush to cut trees for charcoal production (Interviewee 5, community-based NGO practitioner)*” because they need food for their families, and they need to pay their children’s school fees. This is where sometimes organizations come up with projects targeting immediate needs but may unintentionally prohibit the future adaptive capacity of individuals and communities, as the projects do not fully provide the solutions or may not have the funds to do so within the limited timeframe. Likewise, power and politics constitute another essential factor for understanding the context. The literature suggests that power relations are drivers of differential vulnerability patterns, as this influences unequal access to resources and decision making (Thomas et al., 2019). Thus, in the long-term, it enhances or hinders the adaptive capacity. If such structures and relations that led to the marginalization of individuals and communities are overlooked in ongoing CCA projects, it runs the risk of reproducing development, which contributes to vulnerability in the first place. It is important for practitioners and organizations to ensure that they are not lending themselves to inherent power dynamics, yet working closely with people trusted in the communities. This is challenging for the organizations. Advancing on how challenging it is to address these problems, one interviewee mentioned “*it’s precisely because of their lack of power that they are the most vulnerable and marginalized. And so, they’re not going to show up to those project interventions or meetings. So how do you then try to engage and find out what exactly is necessary for them (Interviewee 1, independent researcher)?*” This statement shows the complexity, but the key thing is to be aware of the underlying power distribution and its influence while making decisions on adaptation actions (Adger et al., 2005; Dolšak & Prakash, 2018).

Although certain funding guidelines incorporate power analysis and principles such as ‘do no harm’, a limited number of interviewees (researchers and donor representatives) mentioned its implications for projects. As suggested by one interviewee, “*such consultations and analysis might be one of the buzzwords; ticking the boxes, and number of workshops.*” However, community-based organizations play a vital role in ensuring that everyone is involved in collaborative and fair ways, as they negotiate power dynamics. Since the projects rely on existing structures and institutions for implementation, they simply follow established power relations that have historically marginalized certain people or groups. Therefore, projects should consider that interventions do not reinforce these inherent relations. This need should be made more visible in project documents to ensure that it remains acknowledged. This is evident in the literature which indicates that pre-existing power structures act on all climate change adaptation programs, excluding the marginalized people (Nagoda & Nightingale, 2017; Nightingale, 2017), eventually reinforcing existing inequality (Eriksen et al., 2021) and leading to maladaptive outcome. Projects ultimately help promote the interest of certain elites and

maintain their social status because of their pre-existing networks with politicians and easy access to local government and non-government authorities. Thus, most of the time, people benefiting from project interventions are the same people from within the limited networks (Nagoda & Nightingale, 2017). Some interviewees also accepted the fact that existing power relations prohibit the decision-making influence of marginalized people, but they feel limited within the trap of mandate, tools, or guidance to analyze and change the causes of exclusion in their work.

6.2 Equity and Justice

The majority of the interviewees indicated that justice and equity should be at the center of adaptation planning, project design, implementation, and evaluation (Figure 4). This means that considering how a certain person's adaptation may be accomplished at the cost of others increased vulnerability. As mentioned in the projects documents, the main goal of INGOs is to support the most deprived, excluded, and vulnerable. A common response was “*we are concerned with marginalized and disadvantaged communities.*” Most interviewees embraced the ‘justice and equity perspective’, with one interviewee explicitly stating that “*we can see the tilting of benefits towards people who are capacitated already, whereas people that do not, tend to be overlooked in multiple ways.*” This could also be related to the underlying issues of power and politics, as discussed in (section 6.1). When inequality and injustice patterns such as colonialism and racism are not explicitly recognized by a project, they limit the opportunity to resolve the root causes of vulnerability (Juhola et al., 2022). This renders entrenched structural disparities through which individuals and communities are marginalized (Fünfgeld & Schmid, 2020). The findings suggest that effective adaptation must start with an understanding of the distribution of risk, and adaptation projects cannot adopt a risk-blind approach. Therefore, every project stakeholder should continuously reflect on why certain individuals and groups of people face a greater likelihood of being exposed to and impacted by climate risk in a disproportionate manner (Thomas et al., 2019). Although the topic of socio-political analysis was not central to many of the interviewees, a few expressed the need for a strong political economy analysis while designing an adaptation project. It helps practitioners to be aware of conflicts and dynamics associated and ensure that certain groups are not negatively and disproportionately affected by the project intervention. Different forms of inequalities make it difficult for certain groups of people to navigate around social hierarchies and power dynamics and eventually have profound impacts on their exposure, sensitivity, and adaptive capacity. For instance, interventions such as in Zambia project, focusing on water resource management must consider distribution and access to water. Projects should explicitly identify the most in-need of the intervention and pre-sensitize the community as to why this group were chosen. This helps avoid conflict and ensure that projects interventions are not reinforcing vulnerabilities by reflecting on who benefits from the intervention. For example, people who have large low-lying land benefit more from water irrigation schemes, and people with high landholdings in accessible places benefit from the historical system of oppression.

One way of avoiding this is to ensure that there is meaningful engagement from the community. As some interviewees expressed their concerns “*there is a difference between inclusion and meaningful participation*”. Research has shown that the participation of marginalized people in project interventions is often just for the sake of participation (Nagoda & Nightingale, 2017). This is to report on the number of participants and show on paper that the project has better community participation. However, the voices, concerns, and aspirations of the marginalized are not considered in planning, decision making, implementation, and management. Thus, practitioners should reflect on whether the participation of certain groups or communities is meaningful. The examination of projects documents indicated that all projects view certain groups of people, such as children, youth, and women, as homogenous entities and engage them in project interventions. However, they are not explicit about how they are connected to other actors and systems. Effective community engagement involves all stages of the process: identifying issues, designing responses, implementing actions, and evaluating results (Simon et al., 2020). This is important because it helps to ensure that the process is both scientifically sound and socially robust (Tye & Suarez, 2021). Involving community groups in the process also helps to promote accountability among experts and policymakers and helps overcome the deficiencies of top-down decision-making. One imperative yet neglected aspect in the research and practice dialogue of adaptation is the epistemic injustice (Tabassum, 2022) questioning, what the projects aim to achieve through so-called participation? (Forsyth & McDermott, 2022). It appears that the notion of the community being used hides social divisions. Viewing adaptation process through ‘justice and equity’ lens requires “*deep co-production*” around *what is considered climate risk and who is impacted?* (Forsyth & McDermott, 2022, p. 2). Moreover, this leads to transformational adaptation, which goes beyond implementing solutions for the predefined concepts of risk and vulnerable groups. Therefore, adaptation planning should be beyond the passive response to external threats and focus on changing social relations and historical injustices (Fünfgeld & Schmid, 2020). Who decides on the adaptation to take and who wins and who loses from it? should be consistently reflected (Nightingale et al., 2022) (Table 3).

6.3 Inadequate monitoring and evaluation

The review of projects documents suggests that the existing practice of monitoring and evaluation frameworks are not sufficiently equipped to assess the positive or negative effects of adaptation interventions on vulnerability. The current mechanism primarily focuses on project efficiency, which emphasizes how well the projects are implemented, rather than on their effectiveness and equity. M&E frameworks are highly focused on outputs, (for example, services delivered, number of beneficiaries reached, etc.) with little or no attention paid to long-term outcomes in the resilience or non-beneficiary population. MEL frameworks and instruments should be sufficiently flexible to allow programs to be constantly reviewed and adapted (Coger et al., 2021), especially for resilience building programs, which by nature are working with uncertainties and responding to emergent contexts and changes (Villanueva et al., 2018). They should not be static and should be tailored to project implementation as it progresses through its lifecycle. Technically, M&E frameworks do not always fit the climate

context, implying that long-term climate risk is not necessarily accounted for. Likewise, the evaluation of how and to what extent adaptation actions affect socio-political relations, resilience, development and adaptation gaps/needs are key limitations in existing practice (Bours et al., 2014). Simply put, M&E frameworks do not always interrogate negative or unwanted outcomes of adaptation projects and are typically formatted to report effective management of planned activities. The uniform set of indicators for all groups in the M&E framework contrasts with the differentiated priorities, risks, and impacts among different groups. Therefore, there is a dire need to shift towards realist evaluation, which acknowledges that contextual factors play a vital role in project outcomes and that *no intervention works everywhere, or for everyone* (Villanueva et al., 2018). This helps draw lessons on what works, where, how, why, and for whom. According to the community-based NGOs interviewees, projects are often evaluated by external consultants and perceived as a formality for accountability to donors. Such evaluation instruments often use measurable outputs so that funders can track the return on their investments. This is also essential to maintain the integrity of the climate finance mechanism (Green Climate Fund, 2021); however, it may lead to misleading conclusions, as project outputs do not necessarily result in impacts. Likewise, the output-oriented assessment of projects overemphasizes the manifesting impact simplistic framework and metrics such as the number of beneficiaries reached. Researchers argue that such success versus failure is overly simplistic in measuring adaptation outcomes (Canales et al., 2023; Mills-Novoa, 2023). This leads to projects with interventions that target a large number of beneficiaries yet have very little meaningful impact. It is essential to shift away from traditional tools and frameworks focused on performance assessment in order to generate evidence for learning (Taylor et al., 2022). Thus, such an ‘evaluative monitoring’ approach helps understand how and why change is happening (Villanueva et al., 2018). As reported by one interviewee, “*evaluations that are done within the project timeframe, do not identify the real impact of these interventions (Interviewee 12, community-based NGO).*” Current M&E tools are not equipped with time and resources in a way they would monitor the project as they unfold. Most importantly, the review of M&E frameworks suggest that, these rarely acknowledge that these systems are dynamic and so these tools are not adaptive to the dynamic context in which projects are operating in (GIZ, 2014; Nick Brooks, 2014).

Despite these challenges, practitioners at all levels agree that “*there is a need for co-creation of M&E tools, with the users on board, the people who get to use the resources and benefits of the project.*” The community should decide what should be monitored, collected, and analyzed, which eventually leads to adaptive management processes and a better learning culture (further discussed in [section 6.6](#)) (Coger et al., 2022). Similarly, interviewee associated with case study projects expressed their concerns regarding the post-evaluation process, and the main problem is that it is not being built into the project design. While this does not necessarily lead to maladaptive outcomes, it is one of the key characteristics of an effective project. Therefore, long-term program thinking, monitoring and evaluation are necessary for effective adaptation projects. Thus, organizations should rethink rigid tools with a narrow focus on output and indicators, and maladaptation could be an entry point for further discussion.

Previous findings have shown that existing tools in M&E and their applications for effective planning, monitoring, and evaluation of climate change adaptation projects suffer from social desirability bias and acquiescence bias (Wojewska et al., 2021). During the surveys, KIIs, and FGDs, respondents to the M&E assignments are likely to overemphasize the positive views on the project, hoping to be in a favourable light. Similarly, they tend to agree with the questions rather than provide honest opinions. Resilience programming is all about working with uncertainties, embracing them, and being adaptive to the emergent dynamics as the program evolves through its lifecycle (Woodhill & Millican, 2023). Hence, rigid M&E frameworks must be tailored and responsive to the context in which the project is being implemented. Notwithstanding the aforementioned benefits of the MEL system, it is essential to recognize that it requires continuous reflection to serve the dual purpose of accountability and learning (Table 3). As a result, project teams and practitioners must be aware of and explicit about this from the outset.

6.4 Funding structure and mechanisms

The analysis shows that along with the wider call for locally led adaptation principles, structural issues with finance mechanisms are gaining attention. A significant majority of the interviewees highlighted the need for localized funding based on contextual needs and priorities. While this was mentioned as a criterion for a successful adaptation project, in reality, it is always difficult for INGOs and local partners to access finance through these bureaucratic regulations and requirements. According to one interviewee, *“it is too complex for community-based organizations to live up to these requirements and access to funds (Interviewee 9, community-based NGO).”* As a result of which, despite the huge investment in climate adaptation, it is rarely reaching the grassroots level in a way that allows the end users to make decision based on their need and understanding.

Although climate finance should prioritize the needs and priorities of those who are most affected by climate change (Holland et al., 2022), Browne & Razafiarimanana (2022) discovered that adaptation finance disproportionately favoured households that were already capacitated to adapt, rather than those in need of aid (6.2). Political connection with authorities holding power was found to be the main factor which unpacks the need for advanced approach to power and inequality in internationally financed adaptation (6.1). If projects continue to shift and redistribute vulnerability, it will eventually lead to greater risk and vulnerabilities for those who are already marginalized (ibid). In addition, neglecting the potential of maladaptive outcome, projects might make the situation worse. Thus, the inflexible and insufficient tools identified previously are in part a consequence of the funding structure and mechanisms in place. One interviewee expressed *“it is quite frustrating because we have to do it again and again, as we are stuck in this system that requires us to do this in order to secure funding (Interviewee 15, INGO representative).”* Advancing on this, another independent practitioner emphasized that *“we should ask ourselves Who and What are we actually funding rather than this aid priority.”* Structural issues in the development sector, such as bureaucratic or systemic limitations on financing and reporting, often constrain projects to narrow conceptions and

short-term outcomes. One local partner representative stated that “*when we put simple and realistic outcomes, they are not funded as this is very common for the donors*”. This reflects the previous discussion on overemphasizing positive outcomes, where practical and achievable goals may be undervalued. Another interviewee shared a similar perspective, mentioning that INGOs frequently overemphasize positive outcomes, rather than acknowledging errors and mistakes.

International adaptation finance often overlooks the dynamic nature of vulnerability and aggregates it at the country or community level. Multilateral and bilateral funders must acknowledge the entrenched inequalities and informal political dynamics that exist within the local context to avoid reinforcing or exacerbating existing inequalities through adaptation interventions. One interviewee highlighted the need for better coordination between different funds to achieve effective results and to understand the potential adverse outcomes before scaling up projects. However, there are fundamental issues within the development practice, and as one interviewee noted, “*there is not much that an NGO or INGO can do*” to address these issues. One of such conceptual issue in the structure is ‘additionality’ (European Parliament, 2012). Critical adaptation scholars argue that principles like additionality can be challenging, particularly when development and DRR actors have co-opted adaptation (Inderberg et al., 2014). Some interviewees noted that this has resulted in adaptation projects addressing only surface level impacts, rather than addressing the underlying drivers of vulnerability. One interviewee commented that “*organizations are using just a single budget line or half an outcome around climate change and saying they are doing climate change adaptation (Interviewee 10, INGO representative).*” Eriksen et al. (2021) also found a similar trend, which they referred to as ‘*retrofitting development as adaptation*’. However, the results indicate that existing funding structures and mechanisms are also perpetuating this trend. The current funding mechanisms in the development sector are focused on competitive, project-based approaches that neglect the need for contextual and need-based vulnerability and capacity assessments. Comprehensive assessments are typically time-consuming and resource-intensive, and organizations often do not see incentives to conduct them. Similarly, poor monitoring and post-evaluation practices are pervasive in the sector, as discussed in section 6.3.

Funding mechanisms have a crucial role to play in addressing these issues. With the notion of ‘mainstreaming’ as expressed by many practitioners, it is clear that the existing climate funds are simply funding development activities with certain climate aspects in it. Organizations continue to engage in such practices to secure funds and comply with finance criteria. There is empirical evidence and critical scholars have been raising the concern of ‘rebranding’ (Bertana et al., 2022; Eriksen et al., 2021; Schipper et al., 2020). Although it may not always lead to maladaptive pathways, it has clear implications in unequitable distribution of risk and benefits which is against the principle of effective adaptation. Effective adaptation requires patient, predictable, flexible, and easily accessible funding (Soanes et al., 2021). There was a strong consensus among interviewees regarding the need for localized financing, which aligns with innovative finance models such as The Devolved Climate Finance (IIED, 2021). The bureaucratic funding model, which relies on short-term project-based financing, traps projects

within unsustainable decision making structures (Coger et al., 2022). Current practice does not consider much nor provide adequate time to experiment, learn, and value failure.

6.5 Conceptual ambiguity

Despite the very marginal distinction between adaptation and development, aid agencies continue to separate them, and practitioners have expressed diverse opinions on the extent to which development should be a part of adaptation. As one interviewee proposed, *“there is not a huge difference between development and adaptation as the agendas have strong links, it is just the way that adaptation implemented in the ground is very different (Interviewee 1, researcher).”* Such an artificial distinction between development and adaptation has implications for how organizations adjust their strategies and projects to account for climate change concerns and secure funding (Bertana et al., 2022). Despite being an elusive concept, interviewee acknowledge that maladaptation has pushed practitioners towards realizing that these very positive adaptations also need to be examined holistically, for instance, changing the scale at which we are looking at issues. The critical adaptation literature also suggests that not every action reduces vulnerability (Atteridge & Remling, 2018; Eriksen et al., 2011). Similarly, the results show a significant difference in understanding what constitutes adaptation across a range of practitioners involved in the planning and implementation process. This is due to the temporal and spatial dimensions and the complexities associated with them. As noted by one interviewee, *“we have a very poor sense of what a successful adaptation looks like, is it supposed to be successful in five years or is it supposed to be successful forever.”* However, these subjective aspects of (mal)adaptation are unavoidable and should not be dismissed. It is essential to bring multiple perspectives to the table and appreciate them accordingly. This means reframing and evaluating effectiveness situating them in terms of what happens in the everyday realities of the people a project works with. Considering the changing societal landscape, it is unfair to expect that an action or response against a particular risk at a particular time will always be effective (Dilling et al., 2015). Instead, the emphasis should be on adaptation as a dynamic and iterative process.

Given the definitional ambiguity of what constitutes adaptation, it is also difficult to depict adaptation actions from development measures (Singh et al., 2022). As a result, there is ongoing debate about the extent to which development should be a part of adaptation or vice versa, and how best to integrate them (Bertana et al., 2022). However, this trend shows that climate change and its consequences have shifted the focus internationally funded projects. Most projects labelled as adaptation are actually development measures, and organizations adjust their existing guidelines or project descriptions (Bertana et al., 2022). This ‘retrofitting of adaptation’ as Eriksen et al. (2021) terms it, is a contributing factors for pathways towards maladaptation. Although there could be various reasons for this, securing funding is key (section 6.4), and the funding stream demands to continue doing so. As expressed by some interviewees, there is always a sense of fear with the local NGOs that the donors could withdraw funding or affect future funding, if something did not go right instead of experimenting and learning. Besides, another problem identified is the way in which concepts

travel across the chain of stakeholders involved, from donors to a community-based organization. Organizations often take concepts and translate them along, which can result in a different meaning when it comes to the ground.

6.6 Culture of learning

The results show that one of the major drawbacks of adaptation practice is the failure to learn and adapt accordingly to make projects effective. Knowledge sharing is a key principle for successful adaptation; sharing information about what worked, what did not work, why it did not work, and how to improve in the future. It is equally important to learn from malpractice or failure because they can help future projects. The interviews revealed a strong emphasis on learning among the participants, with many expressing transparencies and promoting adaptive learning. For example, one interviewee said, “*we need an honest overview or collection of failures so that we can analyze and learn from them (Interview 14, climate finance expert).*” In contrast, a few participants held an opposing view and scepticism about its practical feasibility, citing “*donors understand when the failures are due to external factors beyond the project scope and control, but when it comes to failures due to organizational issues, donors would not be happy to articulate that (Interviewee 15, INGO representative).*” However, participants acknowledged that adaptation is the biggest learning cycle, and it is crucial to incorporate this learning into future project planning and design. Thus, there should be a feeding system where real-time information can be accessed so that other development agencies can find useful information before planning for investment in the area where other organizations have already worked. Therefore, learning should be performed within and across organizations. However, in current practice, much information and learning are held within a particular organization or limited network. Often, the project implementing partner collects and reports learning to the leading partner and donors along the chain, but they are unaware of how it is used in practice, as expressed by one partner NGO representative, “*we never know if our learning has been translated in practice or not*”. So, learning and best practices are just one of many project documents and reporting formats that have no significance in planning more effective projects.

While projects proposals, guidelines, and frameworks simultaneously mention monitoring, evaluation, and learning, the learning process tends to be forgotten. A significant focus is on single-loop learning, which evaluates how well the planned activities are being implemented, rather than double loop learning which encompasses action learning interactions (Eriksen et al., 2021; Werners et al., 2021; Wojewska et al., 2021). One way to promote such a learning culture is to have the right cohort of organizations, trust, and partnerships. Having one table where the donor and implementer would sit together, discuss how far we have gone and what changes need to be done rather than imposing them with rigid logframes with sets of indicators to be reported at a certain time. This is different from the so called ‘stakeholder meeting’ or ‘learning workshops’ in the current practice; it should go far beyond and be much more transparent and honest (Soanes et al., 2021; Taylor et al., 2022). For this, mutual understanding, trust, and collective effort are required (Custer et al., 2022; Gajjar et al., 2022). It requires organizations that are not afraid to fail, donors to accept and admire that organizations are not

perfect and challenging themselves to deal with complex issues, and lastly, local honest partners who think beyond pleasing donors. One interviewee calls this a “*new way of working, collaborative approach of development partners, governments and INGOs which is not about competition and what visible impact a particular NGO has brought in a particular geographic area.*”

6.7 Shift from shallow understanding towards holistic perspective

Across the interviews, there was a notable demand for holistic, long-term strategic thinking and programming perspectives. In contrast, current practice seems to be limited within the project scope, and projects rarely consider the drivers of vulnerability. Interviewees’ understanding of climate change adaptation clearly shows that it is predominantly coping and incremental (Figure 2), unfolding significantly through short-term technical interventions without recognizing how climate change impacts on people are deeply rooted within the system they are in. This is evident in the interview response and projects (5.2 and 5.3) emphasis on advanced irrigation systems, distribution of drought resistant seeds to support economic growth, rainwater harvesting techniques, boreholes and water collection ponds, etc. Apparently, all projects suggest that there is often a focus on biophysical interventions without considering system dynamics. Scientific literature also argues that such project interventions are driven by the concept of outcome vulnerability, in other words, the scientific framing of CCA (Nagoda, 2015). This does not necessarily mean that such an approach is wrong or maladaptive, yet they have proven to be ineffective in reducing vulnerability in the long term. Nagoda (2015) found that households with better adaptive capacity often mentioned limitations, such as drought, lack of technical support, irrigation and manure, as the causes of vulnerability. Whereas food insecure and poor households from the same community referred to social causes such as exclusion from decision-making process, limited access to land, water, and other resources, access to political networks and education.

Very few interviewees, especially independent researchers, reflected and questioned “*are we actually addressing the problems that communities are facing or just addressing the impacts of climate change.*” There needs to be resourcing and thinking about building capacity within the community projects work with rather than leaving and taking away expertise once the project is completed. Interviewees expressed a preference for long-term programming, which is not always practiced. While it is not feasible for a single project to solve every issue, collective action and collaborative approaches are crucial to building multiple projects that support one another. In line with this argument, one interviewee shared that “*sometimes NGOs design projects with a lot of components and rarely address each in-depth*”. So, having a holistic perspective does not mean including every issue in a project; rather taking a step back and viewing the challenge the project aims to address from multiple perspectives.

These findings are consistent with those reported by Bertana et al., (2022), that technological approaches and solutions dominate adaptation projects significantly. This views climate

change as a problem that can be addressed by technical scientific knowledge which confines its understanding and scope. Adaptation from this perspective is inferred as a means of protecting people and property from external threats, mainly climate-related events. Such a narrow conception leads to irreversible adaptation actions with a high risk of maladaptive outcomes (Barnett & O'Neill, 2010; Hallegatte, 2009). This tends to ignore the fact that all adaptation projects operate within, and are influenced by, social, political, cultural, and economic relations (Eriksen et al., 2015). This ultimately ignores the ontologies of climate change and the co-emergence of society and nature by presenting climate change as an external threat to both natural and human systems (Nightingale et al., 2020). The ontological perspective of the communities that the project target, should be at the centre of adaptation project design and implementation rather than solely focusing on technocratic claims of adaptation knowledge (Mills-Novoa, 2023). Technocratic and apolitical approaches to adaptation exclude the most marginalized from the processes that are intended for them and ultimately contribute to maintaining the status quo (Nagoda & Nightingale, 2017; Nightingale et al., 2022). Even if they are included as part of the formality, they do not have a meaningful influence on what decisions and policies are made. Case study projects are no exception to this, and they primarily propose technocratic and apolitical interventions targeting economic growth via increased agricultural productivity and better market opportunities, instead of measures to address the causes of inequality and vulnerability deeply rooted in society. Similarly, adaptation projects should not consider communities as homogenous entities and should consider the nuances in social hierarchies, decision-making processes, and social dynamics (Buggy & McNamara, 2016). Scholars also demand to reinterpret the sense of 'community' in community-based climate change adaptation. The community is beyond a mere place where projects are implemented (Buggy & McNamara, 2016). It should be conceptualized beyond the geographical boundary, and the underlying context should not be overlooked ([section 6.1](#)). Simply, "community" is often romanticized and assumed to be harmonious. Consequently, internationally funded projects tend to ignore the inherently complex, diverse, and multifaceted nature of the community.

As is evident in the literature, adaptation efforts should be rooted in a broader framing derived from an epistemologically plural approach to context and drivers (Ensor et al., 2019). This means understanding the experiences of communities through multiple lenses, such as climate risk management, social dynamics, economic changes and political contexts. Additionally, it is important to ask questions about the significant changes people's lives are experiencing due to climate change rather than just focusing on biophysical impacts alone. Finally, while planning projects, organizations need to draw upon different disciplines that can provide insights into viable solutions beyond those anticipated by specialist knowledge alone. To implement adaptation effectively, organizations should first understand what adaptation is, what/who is being adapted to, who implements adaptation, how adaptation occurs, and its outcomes (Asare-Nuamah et al., 2021). One of the approaches suggested by a key expert is to ensure that adaptive management is built within project design and to look at adaptation within a complex adaptive system (Figure 4). While it may seem too academic and idealistic, approaching with the idea that our systems are inherently dynamic and complex will challenge existing adaptation practices in many ways. One interviewee further emphasized that

“adaptation and adaptation management are lost”, there is not much monitoring of how certain adaptation interventions are tied to people’s well-being outcome. This again comes back to the framing of climate risk and how it is understood with a narrow focus. Maladaptation could be a great tool to help us recognize the need to change our understanding of risk. For instance, one interviewee suggested that *“if adaptation practitioners or organizations step back from the narrow metrics such as amount of crop protected from adaptation interventions to people’s wellbeing as an outcome, we will be able to identify several different interventions far broader than what is currently being considered.”*

6.8 Project problems

The majority of the interviewees expressed their concern about the complexity of adaptation, especially in terms of the potential impacts the projects could have. It is not always possible to foresee adaptation outcomes as several indirect factors could influence this. Given the uncertainty, practitioners frequently referred to a common concern of flexible programming, with one participant summarizing it as *“flexibility ensures that the program can respond to unforeseen challenges or things that have not been considered”*. Emphasizing this, one of the local NGO representatives shared that, depending on the donors, sometimes it takes up more than 9-10 months to make some revisions to the project timelines. Therefore, flexible programming provides local actors the freedom to embrace trial and error and allows them to respond to dynamic and emergent risk factors. When programs have built-in mechanisms for adaptive management, implementing NGOs can accommodate change based on their learning of what works and what does not (Villanueva et al., 2018). For instance, project plans, TOCs, and indicators could be adapted as the local context demands. Despite good intentions and acknowledging the importance of community-level participation, project management, and planning ends up being predominantly top-down, leveraging the risk of maladaptive outcomes. Although current practice might seem participatory because of the consultation events that are often organized in different phases of projects, these events actually go through pre-existing governance institutions and power relations, thus excluding marginalized individuals. In other words, so-called “community-based participation” or “participatory processes” exclude the marginalized due to their inherent power relations, and ultimately generate projects with a high risk of exacerbating inequalities (section 6.1). Participation is not just ‘stakeholder engagement’, it is going beyond this and exploring differential interests, values, and knowledge production and contestation. It is moving away from the decision-making process where marginalized people do not have the opportunity to define problems and solutions. Effective adaptation entails challenging development paradigms that marginalize certain populations.

It is evident from the interviews that there is widespread consensus on the need for long-term programs. The short-term nature of projects is one of the reasons why much focus is on project outputs. In the words of an interviewee, *“NGOs are happy to see the number of beneficiaries reached, number of people participated in the training, but what happens after that (Interviewee 5, community-based NGO).”* In a short-term duration project, much M&E time is spent on administrative aspects, data collection, reporting, and less or no attention is paid to

the real impact of the project. Even if certain NGOs want to do, for instance post-project evaluation, there is no incentive because this is not built in, or the donors never want it. This is not a new finding in development studies and short-term projects have always been critiqued in terms of sustainable outcomes (Hagelsteen & Becker, 2019). Furthermore, some interviewees reported that governments often do not take ownership of these internationally funded projects, stating that “*government line ministries are supposed to own these projects and make follow ups in monitoring..... unfortunately, this is not the case (Interviewee 11, INGO representative).*” Projects proposal analysis revealed that the lack of ownership can be attributed to inadequate coordination during the project’s preliminary design phase. Ownership needs to be developed throughout the project, as simply expecting governments to take over interventions that they never wanted is not a viable solution. The key question to be asked is, was the project intervention based on the needs of the communities? was it demanded by the local government? For example, the establishment of Farmer Producer Companies (FPCs) and their socioeconomic empowerment was one of the key project interventions of the women empowerment project in India (5.2). However, despite being facilitated by NGOs, it was quite challenging for the FPCs to be recognized by the government as eligible for financial support and grant for schemes, as shared by one community-based interviewee. This highlights the need for more coordinated and collaborative work during the project planning. Similarly, sustainability or exit strategy of the projects often do not function well because they do not acknowledge the long-term challenges faced by communities. A key fundamental question here is who should be responsible for sustaining the outcomes of the adaptation projects. Projects proposals demonstrates that the current sustainability mechanisms of the projects rely heavily on households, communities, local institutions, and governments with low capacity and their competing needs. Similarly, this does not acknowledge the future climate change impacts and shifting needs of communities on the frontline (Mills-Novoa, 2023). Such a reliance on local actors with limited resources and capacity needs to be replaced with concrete and funded sustainability mechanisms (Mills-Novoa, 2023). In any case, it is not only the project donor’s and implementor’s responsibility to ensure a sustainable outcome. Local actors indeed play a key role to create systems, structures, and policies. To achieve this, project sustainability mechanism in the first place should be designed in coordination with the frontline communities and individuals. In addition, donors need to explore the possibility of ex-post evaluation and ensure the provision of resources, funds, and technical support from the onset of projects.

7. Conclusion and Recommendations

As the climate finance mechanisms mature and climate change impacts become more frequent and intense, the scale and number of adaptation projects are expected to grow over the next decade. Vulnerable nations continue to depend upon intergovernmental funding and international non-governmental organizations for adaptation projects. Therefore, it is essential to understand the outcomes and underlying processes of such projects. Meanwhile, significant advancement in climate change discourse and critique of adaptation, has opened the maladaptation debate. This thesis aimed to explore practitioners’ perspective on identifying and addressing the potential risk of maladaptation, guided by three key research questions:

(i) What are the principles that characterize effective adaptation?

The results showed that the practitioners' understanding of effective adaptation is essentially in accordance with the principles of locally-led adaptation (Soanes et al., 2021). Community based approach was found to be the key factor characterizing effective adaptation. However, despite the efforts and focus on community involvement, internationally funded projects often end up being predominantly top-down due to structural issues, such as requirements and standards, which prevent full-fledged community-led initiatives¹. Although the participatory approach is widely recognized in theory, the realities of the aid landscapes and development practices present significant barriers and hinder the creation of enabling conditions for its implementation (section 6.7 and 6.8). In addition, there is a significant difference in understanding of what successful adaptation entails, among the interviewees across different levels (Table 1). While organizations should not strive for a widely accepted or common definition of successful adaptation, there should at least be a shared understanding across organizations involved in the project. The results highlighted that 'justice and equity aspect' could be that common understanding point, and it should be at the centre of adaptation planning. To ensure and promote equitable, inclusive, and sustainable adaptation projects, it is recommended that international aid organizations adopt an adaptation process that is guided by the principles of locally led, justice focused and equitable adaptation. This would help the organization to ensure that the adaptation projects do not exacerbate the root causes of vulnerability.

(ii) What are the pre-determining factors that might lead to the negative consequences of adaptation projects?

Interviews and projects documents analysis revealed that failure to consider contextual factors and insufficient monitoring and evaluation are the major factors determining maladaptive pathways. Such contextual factors include power dynamics, varying vulnerability, competing needs, and behavioural/cultural aspects. Failure to consider these factors runs the risk of producing limited or no impact on reducing vulnerability of the communities' projects work with. In the worst case, it might result in adverse impacts undermining the resilience and adaptive capacity. In addition, context specific climate risk scenarios also play a vital role, which is not often acknowledged by the adaptation projects. Therefore, I/NGOs can incorporate comprehensive participatory and contextually driven analyses, such as socio-political, risk, and vulnerability analyses, to address this issue. This should prioritize the identification of contextual issues, enabling organizations to effectively tailor their projects to the communities they serve. Similarly, it was identified that limited monitoring and evaluation is one of the factors leading to negative outcomes of the adaptation projects. Narrow monitoring metrics and rigid frameworks do not allow practitioners to be flexible to the dynamic contexts project

¹ Community-based and Community-led approach mentioned here refers to slightly different approaches. In a community-based approach, local actors may be invited to plan and implement certain intervention, may be able to direct some priorities, and funding reaches the community via intermediate. Whereas, in community-led approach, local actors decide what is implemented, how and by whom. Likewise, local capacities are supported to design, implement, monitor, and maintain measures.

operates in. So, it is crucial for organizations to co-create such tools in coordination with the intended beneficiaries of the project. The implications of this study suggest that existing monitoring and evaluation tools should be adapted and equipped with essential time and resources, thinking beyond the project timeline. Organizations should consider the long-term risks and outcomes associated with the projects and build them into the project frameworks.

(iii) What are the challenges in the existing practice of planning and implementing adaptation projects for I/NGOs? How can these be addressed?

This research identified structural issues in funding mechanism, conceptual ambiguity, absence of learning culture, narrow perspective, and poor project practice as key challenges in terms of planning and implementing effective adaptation projects. The current aid mechanisms have structural issues preventing them from reaching the grassroots level and prioritizing the needs of those most affected by climate change. Short-term, project-based financing creates unsustainable decision-making structures, disproportionately benefiting certain groups, leading to wider inequalities and vulnerabilities. Therefore, aid agencies should promote patient, predictable and flexible funding, making it easier for community-based organizations to access finance, and allowing communities to make adaptation decisions based on their needs. Moreover, this also leads to conceptual ambiguities where organizations adjust existing projects as adaptation to secure funding. This research emphasizes the need for a transparent and collaborative approach among organizations and donors to promote a learning culture and incorporate it into future project planning. Lastly, the research argues that current practices focus too narrowly on short-term technical interventions without considering the root causes of vulnerability. Given the results of this research, it is recommended that organizations should promote long-term flexible programming and a collaborative approach that considers multiple perspectives, acknowledging the dynamic context of climate risk.

While this finding is not new, it takes the discussion further and raises concerns among aid organizations to rethink how they are approaching adaptation. In conclusion, this thesis has contributed to the burgeoning literature on maladaptation from practitioners' perspectives, shedding light on the challenges and opportunities. There is no easy practice for transformative adaptation and no silver bullet to ensure projects do not have maladaptive outcomes. It is imperative for donors and implementing organizations to acknowledge this and shift the narrow perspective, decision-making, governance, and institutional culture. Overall, it is recommended that future research explores maladaptation concept as a tool to reshape current adaptation practices among organizations and ensure effective and sustainable adaptation. Additionally, further research is needed to understand how donor and partner organization relations shape decision-making processes and effectiveness of the project outcomes.

The following table provides guiding questions for the practitioners to be more reflexive and consider potential negative outcomes of the projects. As reported by the interviewees and noticed during the research, there is often not much conversation among organizations and stakeholders regarding the potential negative consequences of adaptation actions. So, the table suggest some questions that could be applied and reflected upon during different phases of

project management. This aims to raise concerns among practitioners and foster learning from each other's experiences. It is important to note that the purpose of the checklist is not to identify maladaptive outcome in specific, rather to ensure, right from the beginning, that factors outlined in Section 6 are not overlooked. These factors may inadvertently lead to unintended and unforeseen effects. The checklist serves as a discussion tool, allowing practitioners to critically assess their planning and implementation of projects, highlighting areas that may require improvement.

Table 3: Recommendation for organizations to address the existing gaps and challenges identified in adaptation practice. The guiding questions are structured around key themes identified by the research. To simplify, the more the questions of the checklist are answered with 'no' or 'partially', the higher the maladaptation risk. Inspired from (REGILIENCE consortium, 2023) self-assessment tool on maladaptation.

Key factors identified	Guiding question to reflect upon the current adaptation practice	Yes	Partially	No
Contextual understanding	<p>Is the project considering current and future climate risk scenarios of the project target region?</p> <p>Given the dynamic nature and context, existing risk could be intensified by climate variability or new risk could emerge in the worst case. Thus, adaptation projects should not only consider current scenario, but expected future climatic risks (Interviews)</p>			
	<p>Is the inherent political/economic power dynamics explicitly acknowledged by the project?</p> <p>Vested interest of certain groups, trade offs between whose interests are being served and neglected? Who decides and who is being excluded from the decision making process? Project should be explicit on why adaptation priorities have been in certain way, the role of institution and governance. (Interviews, Glover & Granberg, 2020; Nightingale et al., 2020)</p>			
	<p>Are the project interventions tailored to contextual needs, priorities, behavioral, cultural and other contextual factors?</p> <p>Adaptation is highly context specific and hence projects should not be disconnected from the reality (interviews)</p>			
Justice and Equity	<p>Does the project consider the root causes of marginality and differential vulnerability?</p> <p>Project should understand the distribution of risk and benefit so that it would avoid reinventing the existing disparities (Interviews)</p>			
	<p>Does the project consider different aspects of justice?</p> <p>Who suffers from climate risk and who benefits from adaptation response? Who makes adaptation decisions? And whose concerns matter? (Adger et al., 2005; Singh et al., 2022, Taylor et al., 2022)</p>			

Inadequate monitoring and evaluation	<p>Is the project equipped with monitoring mechanism to interrogate any possible adverse or unintended outcome?</p> <p>Monitoring instrument such as risk matrix should also focus on potential risk beyond the project timeline, rigid monitoring tools heavily focused on planned activities vs achievement should be adapted. (Project Document Analysis and Interviews)</p>		
	<p>Is the post project evaluation built in the project structure?</p> <p>Despite the methodological and conceptual challenges, it is important to assess and evaluate both effective and negative impacts of projects once the project is completed. (Interviews)</p>		
Funding structure and mechanism	<p>Does the funding model allocate time and resources for contextual vulnerability and capacity assessment?</p> <p>If not, communication, open dialogue, and common understanding between donors, and implementors is key. What role can an organization play to ensure this? Limited interview with donors and guidelines/principles endorsed indicates that, everyone accepts the need to shift adaptation practice. Using maladaptation, as a discussion tool, organizations should take the agenda further</p>		
	<p>Is the finance reaching to the people/communities in real need?</p> <p>Or is it simply following the pre-existing network and structure which have been the historical cause of marginalisation. Organizations should reflect and be explicit (K. Browne & Claudien Razafarimanana, 2022)</p>		
Conceptual ambiguity	<p>Is the project or organization explicit on how their framing influences adaptation practice?</p> <p>Project should constitute platform for engaging diverse knowledge beyond the limited scientific and expert knowledge.</p>		
	<p>Is the project reflexive on adaptation framing and decisions?</p> <p>Organizations should critically reflect upon who is currently and who should be defining 'good' adaptation (Piggott-McKellar, Nunn, et al., 2020)</p>		
Learning culture	<p>Does the project offer space for experimenting and learning?</p> <p>Considering the uncertainty and system dynamics, organization should accept that projects might fail (failed project does not necessarily mean maladaptation, figure 3), the key priority should be to learn and adapt</p>		
	<p>Does the project acknowledge adaptive management?</p> <p>Learning by the project stakeholders should be translated in practice instead of collecting it just for the sake of reporting and presenting (Interviews)</p>		
	<p>Is the learning held within the organization? Is it helpful for future projects?</p> <p>There should be a common platform where organizations working on climate change adaptation can learn from each other. Organizations should adapt themselves first before helping communities to adapt (Interviews)</p>		

Shift towards holistic perspective	<p>Is the project focused on outcome vulnerability or contextual vulnerability?</p> <p>Vulnerability is not just the outcomes of climate change impacts, but a complex interaction of pre existing conditions that make certain people more vulnerable than others (O'Brien et al., 2007)</p>	Green	Yellow	Red
	<p>Is the project overemphasizing on scientific or technocentric framing of adaptation?</p> <p>Adaptation operates within contextual factors and thus project should think beyond technical fixes (Bertana et al., 2022)</p>	Green	Yellow	Red
Project nature and structure	<p>Is the project flexible enough to respond to uncertainty and climatic variability?</p> <p>Rigid programme structure does not address the needs and priorities and leads to failed adaptation. This is also not consistent with the dynamic nature of risk and vulnerability (Interviews)</p>	Green	Yellow	Red
	<p>Does the project commit resources to invest in local institutional strengthening, partnership and relationship building rather than mere stakeholder consultation?</p> <p>This is one of the principles of locally led adaptation to ensure sustained local leadership and enhanced adaptive capacity. So, projects should be explicit on this. (Coger et al., 2022; Taylor et al., 2022)</p>	Green	Yellow	Red
	<p>Is the organization taking programmatic and portfolio approaches or just pilot projects without explicit sustainability and learning mechanism?</p> <p>Programmatic approach provides opportunity and time for re-evaluating outcomes and impacts, enhance trust and relationship (Interviews, Taylor et al., 2022)</p>	Green	Yellow	Red

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9. Appendices

9.1 Project brief shared beforehand with participants

Title: Analyzing the risk of maladaptation; Implications for planning adaptation projects for development agencies

Climate adaptation has become a pressing concern in the recent decade because of its evident impacts on the social and natural systems despite the efforts in reducing greenhouse gas emissions. While climate adaptation projects around the world are proliferating, emerging theoretical development and empirical case studies provide urgency and a basis to evaluate the consequences of adaptation actions (Eriksen et al., 2021; Simpson et al., 2023). However, the phenomenon and factors that could lead to adaptation becoming a form of maladaptation is still not sufficiently understood or established (Schipper, 2020).

To date, there has been very limited independent review of the positive/negative impacts on social vulnerability of internationally funded adaptation projects. Nevertheless, a large number of theoretical developments and individual empirical case studies are emerging that provide a basis to identify systemic features of the framing, financing, planning, implementation, monitoring and evaluation of adaptation interventions (Atteridge & Remling, 2018; Eriksen et al., 2021; K. Browne & Claudien Razafiarimanana, 2022). Yet, identifying the mechanisms through which negative effects can unfold in adaptation interventions is essential for informing future adaptation policy and actions. Therefore, this study aims to examine how adaptation actions might lead to adverse impacts so that they could be avoided in future planning and implementation of adaptation projects by answering following questions.

- What are the principles that characterize effective adaptation?
- What are the predetermining factors that might lead to negative consequences of adaptation projects?
- What are the challenges in the existing practice for planning and implementing adaptation projects among the I/NGOs? And how these could be addressed?

This study applies a primarily inductive research approach through qualitative descriptive case study, including semi structured interview and project document analysis.

Your participation would be immensely valuable to gain insights on adaptation from practitioners' perspective, and to identify existing challenges and opportunities for effective adaptation.

Thank you!

9.2 Invitation email

Subject: Invitation to participate in a semi-structured interview

Dear [Name],

I hope this email finds you well. I am Bikram Sedhai, and I am a student of Disaster Risk Management and Climate Change Adaptation master's programme at Lund University.

I am reaching out to you because I am conducting research on the topic of addressing the risk of maladaptation and I believe that your insights and perspectives would greatly contribute to the findings of my study.

As part of my research, I am seeking participants for a brief interview to gather insights and perspectives on climate adaptation projects. Your participation in this interview would be greatly appreciated and would help contribute to my understanding of the subject.

I would like to invite you to participate in a semi-structured interview, which will take approximately 30 minutes of your time. The purpose of the interview is to gather information and perspectives on the challenges and opportunities in addressing the risk of maladaptation. Your participation in this interview will be significantly valuable in helping to advance our understanding of this important issue. Please find the attached note for the research project.

The interview will be conducted via [preferred method of communication (e.g. Zoom, Skype, Teams)]. If you are interested in participating, please let me know your availability and the preferred method of communication. I will then arrange a convenient time and date for the interview.

Further, I would appreciate you forwarding this email to your colleagues or other potential interviewees you might know.

Thank you for considering this request. I am looking forward to your positive response.

Best regards,

Bikram Sedhai

Bi2875se-s@student.lu.se

9.3 Interview consent form

Thesis Title: Analyzing the risk of maladaptation; Implications for planning adaptation projects for development agencies

Purpose of the study: This study aims to examine how adaptation actions might lead to adverse impacts so that they could be avoided in future adaptation projects among international non-governmental organizations. Overall objective of the research project is to identify potential ways of addressing the risk of maladaptation and providing inputs on planning and implementing adaptation projects for development agencies.

Procedure: You have been asked to participate in a semi-structured interview as part of this study. The interview will last approximately 30 minutes and will take place online. The interview will be recorded and transcribed for the purposes of analysis. The main purpose of this interview is to understand and explore what adaptation means and different associated factors from practitioners' perspective. Interview also aims to identify existing challenges and opportunities in adaptation practice and potential recommendations to reduce the risk of maladaptation.

- I understand that my participation in this study is completely voluntary. I may choose not to participate, or withdraw from the study at any time of the study without any consequences.
- I understand that I can stop the interview at any time if I feel uncomfortable.
- Please Choose one of the following:

	I understand that I can choose to be quoted and referenced and I have no need for and waiver my right for anonymity.
	I understand that I can choose to remain anonymous regarding any references to what I say in the interviews. No quotes will be attributed to me and any information I give will be paraphrased in a way that cannot be traced back to myself.

- I understand that all data, including personal data, will be treated with utmost confidentiality and according to GDPR rules and Lund University's research code of conduct
- I understand that I am free to contact the researcher at any time to seek further clarification and information.

By signing below, I indicate that I have read and understood the above information and that I voluntarily agree to participate in this study.

Name of participant:

Date:

Signature:

9.4 Generic interview guide

Following interview guide is intended to support the data collection through a semi structured interview. Depending on the background and context of the interviewees, the questions could be used partly or fully, and adapted as suited, and the order of the questions could also be adapted accordingly.

Segment	Interview question	Probing question
General Introduction	<ol style="list-style-type: none"> 1. Can you please introduce yourself and your area of work? 2. Can you tell us a bit about your background? 3. Can you provide an overview of your organization's mission and how it relates to climate adaptation? 	
Segment I	<p><i>Open ended questions to establish a mutual understanding of key concepts and letting interviewee have their own narrative. (Input to research question 1 and 2)</i></p> <ol style="list-style-type: none"> 4. In your opinion, how is climate change adaptation understood by your organization? 5. What is effective adaptation for you and your work? 6. Are you familiar with the concept of maladaptation²? 7. As a practitioner, do you think there are benefits of applying such concepts in adaptation projects? 	<p>4. Could you please elaborate a bit more?</p> <p>6 a. If yes, what does your organization consider as maladaptive?</p> <p>b. If no, share the common definition of maladaptation. What do you think of this concept? Do you think it is a useful idea for INGOs?</p>
Segment II	<p><i>Input to research questions 1 and 2 (focused and detailed questions)</i></p> <p>Adaptation, as a field of study has identified different dimensions of adaptation initiatives and presents that not all adaptation reduces vulnerability. Not all adaptation will ‘do good’; there will be trade-offs, feedbacks and negative consequences.</p> <ol style="list-style-type: none"> 8. how does your organization address the potential unintended consequences in the context of climate change adaptation projects? 9. How does your organization assess/measure the success of adaptation interventions? 10. In your experience, what are the factors that influence the effectiveness of your action? 	<p>8. How do you characterize whether a project is effective or not?</p> <p>Do you think adaptation projects could somehow exacerbate the issue that are sought to be solved?</p> <p>11 a. If yes, how were these outcomes identified and addressed? Were there any warnings, signs, or indicators that these maladaptive outcomes could occur?</p>

² adaptation measures that do not succeed in reducing vulnerability but increase it instead. Briefly mention about unintended consequences of projects

	<p>11. Have you observed any examples of negative consequences of adaptation projects in the communities you work with?</p> <p>12. To what extent do you think adaptation projects acknowledge contextual vulnerability of the communities you work with?</p> <p><i>For only interviewees involved in three case study projects</i></p> <p>13. How does the xxx project fit into a larger, long-term adaptation need/strategy for the community or region?</p> <p>14. What is the xxx project main aim?</p> <p>15. In your opinion, what were the three key successes? And three key learnings?</p> <p>16. After the completion of project, what do you see as a major risk with xxx projects?</p> <p>17. Looking back to the completed project, have you noticed any project intervention that produced counter-productive effects in relation to vulnerability or potential impacts that were formally intended to be addressed?</p> <p>18. How and to what extent do you think the framing of adaptation influenced the project? What is adaptation? Who should adapt? What and how to adapt?</p> <p>19. What was the opportunity for the project to facilitate adaptation?</p> <p>20. The xxx project document mentioned some potential socio-environmental impacts of adaptation project, how were those considered/mitigated during project implementation phase?</p>	<p>b. If no, how does the projects ensure that potential negative consequences are considered and addressed during planning and implementation?</p> <p>14. a. How do you think the project addressed the dynamic vulnerability?</p> <p>b. In your opinion, how are current planning, implementation, and MEL instrument effective to do this?</p> <p>15. What would you like to change if you get to plan and implement a similar project again?</p> <p>16.a Do you think maladaptation could be a risk to a project?</p> <p>b. Is there any other tool or mechanism like risk matrix which captures this?</p> <p>19. Opportunity could be any tools, policy, learning, innovation, etc.</p>
Segment III	<p><i>Input to research question 3</i></p> <p>21. Can you describe your organization's approach to climate adaptation? What specific measures have you implemented to address the impacts of climate change via adaptation projects?</p> <p>22. What challenges has your organization faced in implementing climate adaptation measures?</p> <p>23. Could you please elaborate on how maladaptation is currently conceptualized or considered during different phases of the projects?</p>	<p>24 a. How participatory are such processes?</p> <p>b. How are the temporal and spatial boundaries of evaluation determined?</p>

	<p>24. Could you provide a brief overview of the evaluation process of the adaptation projects?</p> <p>25. What are some of the key lessons that your organization has learned in terms of addressing climate change and promoting adaptation?</p> <p>26. In your opinion what can be done/improved concerning the adaptation outcomes? Any processes, policies, stakeholders?</p>	<p>c. In the current practice, how is maladaptation incorporated during project evaluations?</p>
Ending	<p><i>Return to any points that were brought up previously in need of further clarification. Allow interviewee to bring up any points not discussed.</i></p> <p>27. What recommendations would you have for future climate adaptation projects to avoid maladaptive outcomes?</p> <p>28. Do you have any questions or comments you would like to add before ending the interview?</p> <p>29. Are there any topics you find important in this context that we have not discussed today?</p> <p>30. Are there any other people you think I should talk to?</p> <p>Thank the interviewee</p>	

For Academics and others

- Can you please introduce yourself and your area of work?
- After research, how was the response from international development agencies, donor organizations? Have you continued researching on this topic?
- How is adaptation framed in the current mainstream research? And how do you think it has shaped the adaptation practice in the international arena/internationally funded projects?
- How do you define a successful adaptation? Any characteristics or principles of effective adaptation? How should development organizations measure/evaluate effects of adaptation projects?
- What do you think are the main conceptual strength and limitations of framing and defining maladaptation?
- Maladaptation as articulated in the literature and your research takes many forms, in your opinion what do you think are the factors that determine such pathways?

- Where are the causes of maladaptation located? Do these lie outside the realm of adaptation?
- Could maladaptive outcomes be reasonably expected or foreseen by practitioners? How should it be accounted in different phases of project management?
- What challenges do you see in operationalization of maladaptation in adaptation projects? Could you elaborate on potential opportunities for considering maladaptation risk while planning?
- In the context of multiple adaptation pathways, how do you think INGOs could see beyond climate impacts? Because they need
- What do you think about the current bilateral/multilateral funding mechanism or overall practice of development agencies? Do they address the potential risk of maladaptation? What do you think could be improved?
- What do you think of subjective and value laden nature of adaptation/maladaptation? And what does this look like in practice? How is subjectivity to be addressed in adaptation assessments?
- Would you like to give any suggestions for adaptation practitioners to develop projects with low risk of maladaptive outcome?
- Do you have any questions or comments you would like to add before ending the interview?
- Are there any topics you find important in this context that we have not discussed today?
- Would you recommend any research project that I should refer?